



WFP Food Security for the Ultra Poor (FSUP)

Outcome Survey Report
Bangladesh, 2012



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LIST OF ACRONYMS

BADC	Bangladesh Agricultural Development Corporation
BBS	Bangladesh Bureau of Statistics
BDI	BRAC Development Institute
BCC	Behavior Change Communication
BRDB	Bangladesh Rural Development Board
CBN	Cost of Basic Needs
CBO	Community Based Organization
CSI	Coping Strategy Index
CW	Contact Woman
D-i-D	Difference-in-Difference
EDO	Economic Development Officer
EU	European Union
FCS	Food Consumption Score
FSUP	Food Security for the Ultra Poor
HH	Household
HIES	Household Income and Expenditure Survey
IGA	Income Generating Activity
MBBS	Bachelor of Medicine/ Bachelor of Surgery
MDG	Millennium Development Goal
NGO	Non-Governmental Organization
PPP	Purchasing Power Parity
SHKMG	Self Help Knowledge Management Group
SSC	Secondary School Certificate
BRAC-TUP	BRAC Targeting the Ultra Poor project
UN	United Nations
WFP	World Food Programme

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EXECUTIVE SUMMARY

The World Food Programme (WFP) with funding from the European Union (EU) began the Food Security for the Ultra Poor (FSUP) project in January 2009 with the goal to contribute to eliminating extreme poverty and hunger amongst ultra-poor households in disaster prone areas. Specifically it sought to achieve measurable and sustainable changes in the food security and nutritional wellbeing of 30,000 participating ultra-poor women and their households through significant and sustainable improvements in their livelihoods.

BRAC Development Institute (BDI) conducted three rounds of surveys of a sample of participating (treatment) and non-participating (control) households to determine the impact of the FSUP project. This report presents the findings on changes between the 2010 baseline, the 2011 and the 2012 outcome surveys across different socio-economic indicators of project participants and their households, including in food security and their ability to withstand shocks to their lives and livelihoods.

The results suggest that the livelihood support in the project has had significant positive impacts on the economic condition of the participating women and their households. Between the 2010 baseline and the 2012 outcome survey, monthly household income increased by 4,424 Taka amongst the treatment group, double as much as in the control group. The average number of income sources increased from 2.8 in 2010 to 4.9 in 2012. 98% of the participating women have earnings, on average 1,755 Taka per month. This translates to each woman contributing approximately 31% of total household income. The women's savings have also increased remarkably at 4,404 Taka on average in 2012. Household asset ownership has increased substantially with the value of total assets owned at the time of the second survey at 67,958 Taka (up from 20,103 Taka in 2010). Ultra-poor women are more engaged, feel more secure, and face lower incidences of borrowing from others.

The enhanced earning capacity of the participating women has brought about remarkable improvements in the status of household food security measured against food consumption, frequency of meals taken by the households, and dietary diversity in terms of major food items. The survey estimated 78% of the participating women's households with "acceptable" levels of food consumption as compared to only 17% at the time of their joining the program. The proportion of assisted households who often have access to minimum two meals a day has increased from 59% to 99%. There has been an increase in monthly per person food expenditure of 414 Taka (about a 90% increase over the baseline value) and there is clear evidence of increasing nutritional intake or diet diversity, especially in animal-based food, vegetable and other categories. Result from the difference-in-difference estimator shows that consumption of animal-based food has increased by about 3 units, an increase of 167 percentage points that can be attributed to the project.

There is clear evidence of improvements in other socio-economic indicators primarily due to the range of awareness activities in the project. The participating women are more knowledgeable in disaster preparedness across all types of disasters and take more preparation compared to the control group; the Self Help Knowledge Management Group (SHKMG) plays an important role in this regard in terms of taking community initiatives. The women also exhibit greater knowledge and access to different types of public and private service providers. There were considerable improvements in the knowledge and practices of sanitation in the households. The proportion of the program households who own a latrine

has increased by 27 percentage points (from 48% to 75%) as compared to 11 percentage points for non-program households.

Finally, there was strong evidence that the FSUP project played a key role, in helping the women and their households move out of ultra-poverty. This is measured by the progress made up to a defined threshold level in terms of household income, expenditure, asset and food consumption. The survey estimated around 63% of treatment households moving beyond the income poverty line of US\$ 1.25 per person a day, which is 36 percentage points higher than the control households (27%). Based on the food consumption measure, 78% of treatment households moved out of 'poor and borderline' and achieved an 'adequate' food consumption level which is 25 points above the control households (53%).

In order to determine the sustainability of this success and the long-term graduation of households further surveys will need to be undertaken with the same cohort of households in the coming years.

A NOTE ON STATISTICAL INTERPRETATION

The p-value is a number obtained using statistical tests, which indicates the strength of a finding. The higher the p-value is, the higher the chance that the variation between the two groups is due to random sample differences. The table below provides a simple guide to interpret these values as the smaller the p-value, the stronger the evidence is that the difference in the groups is due to project intervention and not for any sampling error.

Interpreting p-values

p-value < 0.010	very strong evidence
0.010 ≤ p-value < 0.050	strong evidence
0.050 ≤ p-value < 0.100	some evidence
0.100 ≤ p-value	no statistical evidence

SUMMARY OF KEY RESULTS

The following table presents results on all key socio-economic indicators and compares the values between the baseline and the 2012 surveys. The table also shows the difference-in-difference estimates and the relevant statistical significance levels.

Key Indicators	Participating Group (Treatment)			Non-participating Group (Control)			D-i-D $\Delta 1 - \Delta 2$
	Baseline	2012	$\Delta 1^*$	Baseline	2012	$\Delta 2^{**}$	
HH = Household							
Economic Conditions							
Average monthly HH income (Taka)	1,953	6,377	+4,424	1,822	4,174	+2,352	+2,072 ^a
Median of monthly HH income (Taka)	1,917	6,000	+4,083	1,750	4,000	+2,250	+1,833 ^a
Average monthly HH expenditure (Taka)	2,851	6,506	+3,655	3,066	5,028	+1,962	+1,693 ^a
Average number of HH income sources	2.8	4.9	+2.1	3.3	3.9	+0.6	+1.5 ^a
Average HH asset value (Taka)	20,103	67,958	+47,855	20,418	47,471	+27,053	+20,802 ^a
% of participating women who earned	72	98	+26	76	87	+11	+15 ^a
Average monthly earnings per woman who earned (Taka)	327	1,755	+1,428	229	603	+374	+1,054 ^a
% of participating women with savings	39	100	+61	50	49	-1	+62 ^a
Average savings per participating woman who saved (Taka)	950	4,404	+3,454	1,436	2,266	+830	+2,624 ^a
Food Security							
% of HH who could afford at least two meals per day	59	99	+40	60	97	+37	+3
% of participating women consuming three full meals in a day	32	98	+66	38	89	+51	+15 ^a
Average food consumption score	33	56	+23	35	46	+11	+12 ^a

(FCS) per HH							
% of HHs with "Borderline" or "Poor" food consumption levels (based on FCS)	83	22	-61	81	47	-34	-27 ^a
Monthly expenditure on food per HH member (Taka)	461	875	+414	522	669	+147	+267 ^a
% of HHs' monthly expenditure on food	65.3	59	-6.3	66.1	60	-6.1	-0.2

Disaster Risk and Resilience

% of participating women who faced disaster loss	40	20	-20	50	35	-15	-5
Average Coping Strategy Index score	2.1	1.3	-0.8	2.4	1.5	-0.9	+0.1

Health and Sanitation

% of HHs with at least one member sick in the previous month	18	14	-4	21	20	-1	-3
Average treatment cost last year for HHs with a sick member (Taka)	4,396	8,999	+4,603	5,137	6,011	+874	+3,729
% of HHs who own a latrine	48	75	+27	52	63	+11	+16 ^a
Awareness and Behavioral Index value	17.8	27.1	+9.3	19.6	22.7	+3.1	+6.2 ^a

Access, Participation and Mobility

Access score for public service providers	1.84	2.10	+0.26	2.06	2.05	-0.01	+0.27
Access score for private service providers	0.02	0.31	+0.29	0.01	0.14	+0.13	+0.16
% of women who are comfortable going to the upazila market alone	5	16	+11	7	14	+7	+4 ^b
% of women who are comfortable going to the upazila health center alone	4	11	+7	5	8	+3	+4 ^b

Out of Ultra-Poverty

% of HHs with per capita income of more than US\$1.25 a day	2.7	63.2	60.5	1.8	27.6	25.8	34.7 ^a
% of HHs that are above the lower poverty line (1,236 Taka in 2010, 1,490 Taka in 2012)	7.4	43.2	35.8	9.3	22.3	13	22.8 ^a
Proportion of HHs that surpassed the graduation threshold for asset value (30,970 Taka in 2010 and 37,337 Taka in 2012)	28.3	61.9	33.6	23.9	38.9	15	18.6 ^a
% of HHs with an “acceptable” level of food consumption (Food Consumption Score >42)	17	78	61	19	53	34	27 ^a

* $\Delta 1$ = Treatment 2012 – Treatment 2010 Baseline;

** $\Delta 2$ = Control 2012 – Control 2010 Baseline

^a Project impact is statistically significant at the 1% level

^b Project impact is statistically significant at the 5% level

INTRODUCTION

The World Food Programme (WFP), with funding from the European Union (EU), initiated the *Food Security for the Ultra Poor* (FSUP) project in January 2009. The overall objective of the project was to assist the Government of Bangladesh in achieving the Millennium Development Goals (MDGs) by contributing towards food security and nutritional well-being. Specifically, the project targeted ultra-poor households in disaster prone areas with the goal of helping the government in achieving Goal 1 of the MDGs, 'eradicating extreme poverty and hunger'. Under the project, 30,000 ultra-poor women, located in eight upazilas in Sirajganj, Bogra, and Pabna districts, were selected to receive a comprehensive support package, consisting of both monetary and non-monetary assistance. The overall impact of the project can broadly be categorized into two groups. First, ultra-poor households moved up the poverty ladder as their incomes improved as a result of the income generating activities (IGAs) that the women and their households choose to engage in. Second, the sustainability of these gains has so far been protected with the help of skills-development and training received. This section will present an overview of the different components of the FSUP project. A brief overview of the relevant demographic characteristics is also included.

Project Overview

The FSUP project was implemented in eight upazilas; 3 each in Sirajganj (Sirajganj Sadar, Belkuchi, Shahjadpur) and Pabna (Bera, Bhangura, and Sujaganar) districts and 2 in Bogra district (Dhunot and Sariakandi). In the first cycle of implementation, 5,000 women and their households were supported from February 2010 to January 2012. The second cycle of implementation saw a further 25,000 women and their households receive assistance from October 2010 to November 2012. FSUP's financial package consisted of a one-time cash grant for investment as well as a monthly consumption allowance. Each ultra-poor woman received a fixed cash grant of 14,000 Taka as well as a monthly consumption allowance of 500 Taka for a period of two years. During the lean season, this was doubled to 1,000 Taka per month (for two months per year). The one-time cash grant was designed to cover the initial investment necessary to start their chosen Income Generating Activity (IGA), while the monthly allowance aimed to protect the women and their households against financial and consumption instability, especially during the lean season. Non-monetary assistance in the form of training in skill and human capital development, access to local self-help knowledge management groups, disaster preparedness training, etc. was also provided.

To ensure accuracy in the identification of ultra-poor households, non-governmental organization (NGO) teams were trained by WFP in selection. The NGO teams then selected ultra-poor households with help from the local community. A list of households with the poorest intake of food was drafted, which was updated based on whether a particular household met certain requirements. Box 1 below outlines the selection criteria; a household had to meet at least four of the five criteria.

Box1: Selection criteria for project participants

1. Inadequate food supply, household members must often sacrifice meals.
2. The household is headed by a woman with no male income earning members.
3. The household is not involved in any regular employment activities, and, therefore, earns infrequent income.
4. Poor and impoverished living conditions for the household, considering particularly health, hygiene, and access to sanitation facilities.
5. The household owns less than 0.15 acres of land.

Women who were already participating (or, had recently participated) in a similar project were excluded. Baseline survey data indicated that 86% of the participants included met four of these requirements, while 98% met at least three.

Once the selection process was complete, the women were organized into *Self Help Knowledge Management Groups* (SHKMG). Each SHKMG group consists of 20 to 30 women members and has a committee comprising of a president, a secretary, and a treasurer. Group meetings were organized twice every week with a local Contact Woman (CW) present and (for most) a project Economic Development Officer (EDO). An EDO was tasked with communicating between the women and the NGO as well as helping the women with the IGAs; each EDO was responsible for 300 to 350 women participants. Both the EDO and the CW were mandated to periodically¹ visit each household.

Before receiving the one-time cash grant, the women were trained in Entrepreneurship Development and IGAs. Box 2A below provides a brief outline of these two training modules.

Box 2A: Training for project participants (before receiving cash grant)

- | | |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Entrepreneurship development | The ultra-poor women were trained in the process of choosing a particular IGA, matching their broad skill set with a particular IGA, understanding market conditions, operating the IGA economically and, lastly, how to cope with changing economic conditions. |
| 2. Income generating activities | Once an IGA was chosen, the women were provided with specialized training. This was especially relevant for IGAs such as bull fattening, crop cultivation, poultry and goat rearing etc. ² |

And, after receiving the fixed grants, the women were provided training on disaster risk reduction, nutrition and life skills. Box 2B below provides a brief outline of these two training modules.

Box 2B: Training for project participants (after receiving cash grant)

- | | |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Disaster risk reduction | The women were informed about potential impacts of various natural disasters, and what could be done to mitigate the negative effects of such disasters. Emphasis was placed on <i>preparatory</i> strategies to protect assets and homes. |
| 2. Nutrition and life skills | This block of training was aimed at sharing information on food security, food groups, health, hygiene and sanitation issues, and women's rights. For example, the importance of breast-feeding, timely immunization, micro-nutrients, healthy cooking practices etc were covered. |

¹ An EDO was to visit twice every month; the CW was to visit four times in a month.

² For example, how to optimally manage the IGA under fluctuations in input markets, output markets, product prices and demand-side factors, etc.

Survey Timeline and Methodology

In order to estimate the outcome of the FSUP project, three rounds of surveys were conducted. The first round was the baseline, which took place before the commencement of the project, but, after the selection of the project participants in February 2010. A control (non-participating) group was also identified for the baseline survey.³ Both the groups were followed-up in a survey conducted from February 2011 to March 2011 and in another survey conducted from May 2012 to June 2012. For the baseline survey, a three-stage random cluster sampling was used to select sampling units. In the first stage, unions were randomly selected from the project upazilas. At the upazila level, all 1,260 ultra-poor participating households interviewed were randomly selected from the first cycle's 5,000 households and compared with 647 households belonging to the control group (not-participating). During the 2012 survey, 1,190 participating households and 647 non-participating households were surveyed.

In addition to the quantitative surveys, enumerators also collected qualitative information. They conducted 36 qualitative interviews with participating women. The objective was to combine this qualitative information with conclusions from quantitative analysis to build a comprehensive understanding of the project's impact on the participating women and their households. Some of these cases are included in this report.

Analytical and Statistical Framework

In the absence of random assignment of the project placement, a quasi-experiment can be designed. This is facilitated by: (i) the baseline survey done before the start of the project; (ii) the two follow up surveys done during the project and after the project was implemented; and (iii) inclusion and tracking of a similar non-participating or 'control' group right from the baseline survey. Accordingly, it would be possible to track changes in the status of the women and their households by comparing their outcome indicators before, during, and after the implementation of the project, *controlling* for time factors that would cause changes anyway. The latter is controlled for through measuring changes in the non-participating group. Note, however, that unobservable location-specific, time-varying factors cannot be controlled for due to the absence of random project placement.

The set of statistical tools to be used throughout this report can be divided into two sets. First, and the primary set, will be those that are descriptive in nature and technically simple. These tools include comparison of means and corresponding statistical tests for their differences, cross-tabulations, graphs, bar-charts and pie-charts and are less rigorous, but, often very intuitive. Second, the more rigorous difference-in-difference (D-i-D) approach will also be applied whenever possible. In particular, we are interested in estimating the following equation:

$$y_{it} = \alpha + \beta_0 * D_{2012} + \beta_1 * Treatment + \beta_2 * D_{2012} * Treatment + u_{it}$$

Where y_{it} is an indicator, D_{2012} is a dummy variable to represent the year 2012; "Treatment" is to represent the project participants group. To calculate the outcome of the project, we are interested in capturing the interaction effect of the D_{2012} and the Treatment variables, that is, the coefficient β_2 .

³ The non-participating households were selected using the same set of criteria that was used to select project participants (see box 1). A census was carried out in randomly selected non-participating villages to identify households/ individuals that met the project's inclusion and exclusion criteria. This list of admissible households/ individuals was then used to randomly select non-participants (control group) from.

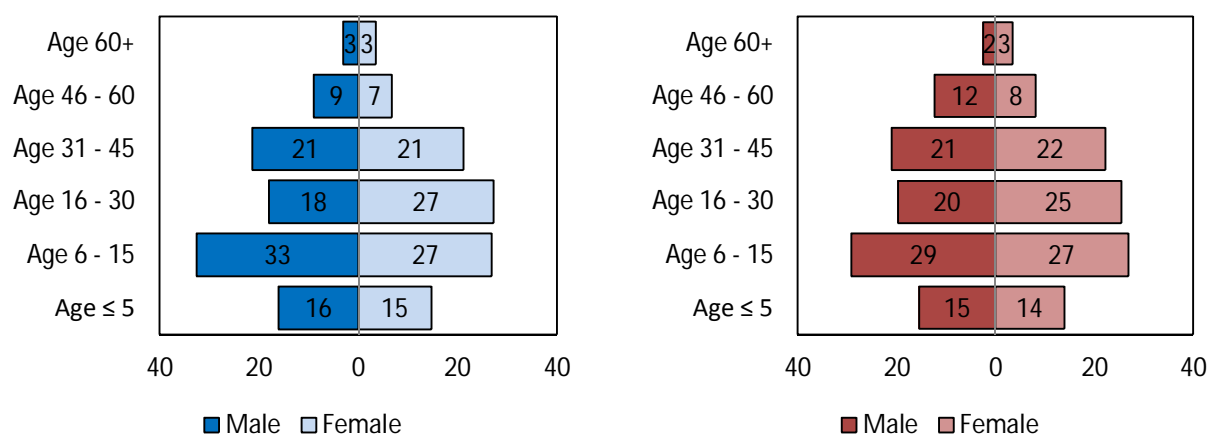
Demographics

The following provides a summary description of the various socio-demographic characteristics of the households.

Age-Sex Distribution

Figure 1 shows the age-sex distribution in the participating (or treatment) and non-participating (or control) households in 2012. The age groups are the same as those used during the 2010 baseline survey. The total survey population in 2012 was 8,039 of which 65% were from the treatment group and 35% from the control group.

Figure 1: Population pyramid for male and female household members in the treatment (blue) and control (red) groups in 2012 (percentage of male/female household members)



In the treatment group, about 52% of household members were female whereas in the control group, the proportion of females was 53%. Furthermore, in the treatment group, among the male population, about 49% were of age below 16 years whereas of all female individuals, about 42% were below that age. In the control area, the percentage of male and female population below 16 years old was 44% and 41% respectively. Both these values were higher compared to national averages, which is to be expected as the project had an age limit of 18 to 49 years old for participating women and hence a tendency towards households with children below 16 years. The *Household Income and Expenditure Survey (2010)* showed the proportion of male and female population under 16 years of age was 38% and 35% respectively.⁴ As mentioned in the baseline survey report, BRAC's TUP program has similar characteristics.⁵

Educational Achievement

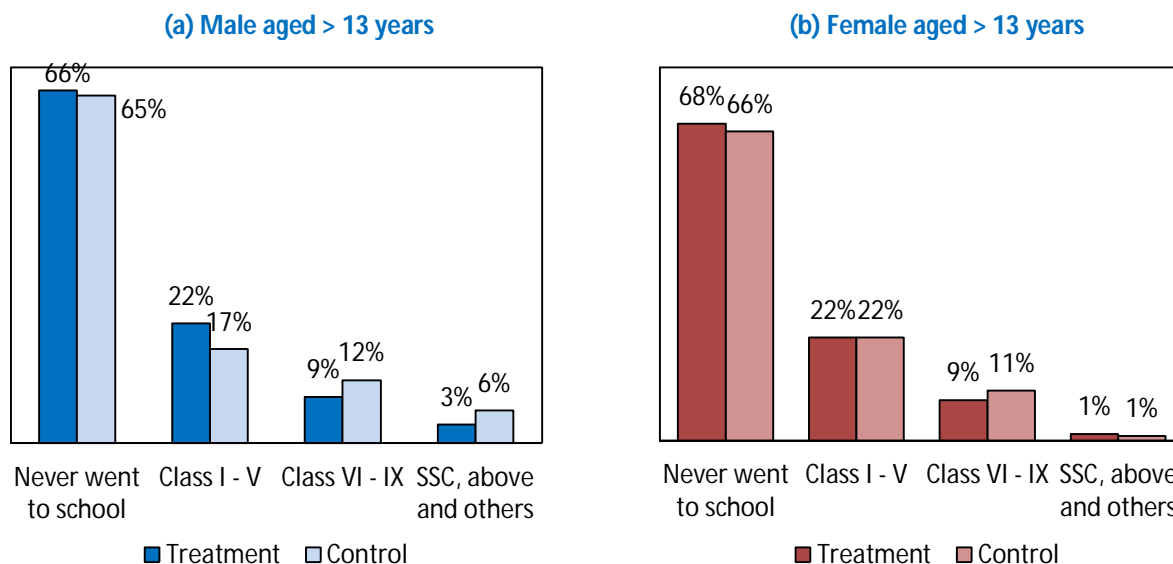
Figures 2(a) and 2(b) below show the educational attainments of male and female household members above 13 years in 2012 in treatment and control areas respectively. As evident from these figures, the percentage of household members who have never had any schooling was quite high. Considering female household members aged 14 years and above, for example, about 68% in the treatment group and 66% in the control areas never went to school. To a large extent, this is following up from the

⁴ Household Income and Expenditure Survey 2010, Preliminary Report.

⁵ FSUP Baseline Survey Report 2010.

baseline survey where the percentage of female household members who never went to school was 71% in the treatment group and 65% in the control areas.⁶ The percentage of male household members who never went to any school was 66% in the treatment group (74% in 2010) and 65% in the control group (68% in 2010). As the baseline report shows, these numbers are comparable to other programs targeted at the ultra-poor (for example, BRAC's TUP program).

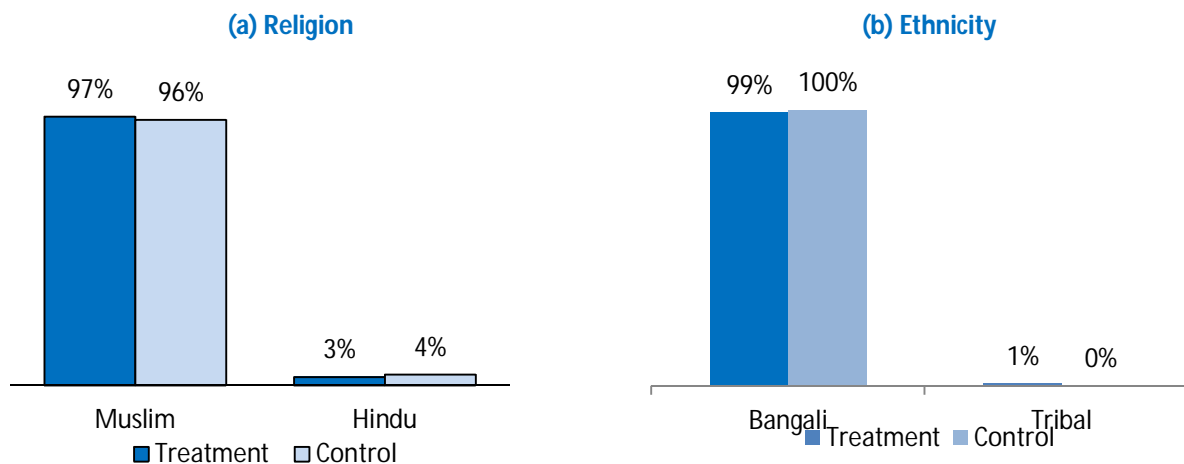
Figure 2: Educational attainment of household members aged > 13 years in 2012



Religion and Ethnicity

Figure 3 shows distribution of religion and ethnicity in treatment and control groups. As expected, the proportion of Muslim households remained the same in both treatment and control groups: about 97% and 96% of households were Muslim in treatment and control groups respectively whereas the rest of the population was Hindu. The ethnicity on the other hand was even more homogenous with 99% and 100% households in treatment and control groups respectively being Bengalis.

Figure 3: Religion and ethnicity distribution

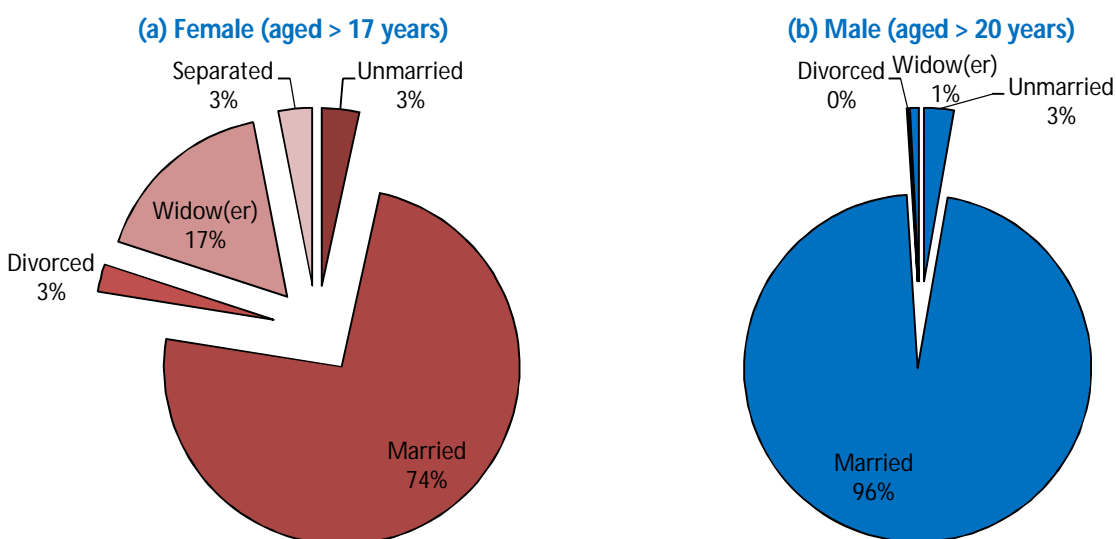


⁶ Impact of the project on educational attainment is discussed in a separate section below.

Marital Status

The minimum legal age for marriage in Bangladesh is 18 years for women and 21 years for men. Following the 2010 baseline survey report, the marital status of women aged 18 years and above and men aged 21 years and above were considered and presented in figure 4. 74% of females aged 18 and above were married whereas about 96% of males aged 21 and above were married in the treatment group. The percentage of unmarried men and women were similar. The percentage of female widows, however, was significantly higher (17% compared to 1% in male population). As was observed in the baseline, only 4% of men below 21 years and 8% of girls below 18 years were married.⁷

Figure 4: Marital Status in treatment group



Household Characteristics

Table 1 shows a number of indicators that reflect household demographic characteristics. It turns out that the average household size was larger in the treatment group and the difference is statistically significant at the 10% level. The difference was similar in 2010. This difference can, to some extent, be attributed to the female headed households: the average size was 0.39 persons higher in the treatment group and is statistically significant at the 1% level.

Table 1: Selected indicators of household characteristics in treatment and control group

Characteristic	Participating (treatment)	Non-participating (control)	Difference
Household size	4.41	4.31	0.101 ^c
HH size of female headed HHs	3.19	2.80	0.387 ^a
HH size of male headed HHs	4.66	4.60	0.06
% of female headed HHs	17	16	0.008

^a Project impact is statistically significant at the 1% level; ^b Project impact is statistically significant at the 5% level

^c Project impact is statistically significant at the 10% level

⁷ Figure 1 may give some indication that girls married early have already left the household. There is an overall tendency not to admit if the wife is under 18 years old, or the husband is under 21 years old; hence this percentage is low.

This significant difference was present in 2010 as well. When it was compared taking only the male-headed households, however, no significant difference was found (as was the case in 2010). The percentages of female headed households, however, were similar (17% and 16% in treatment and control groups respectively). The proportion of female household members was significantly higher in control groups than treatment groups and this difference was statistically significant at the 5% level.

Table 2 exhibits a comparison of household characteristics between the treatment and control groups. The mean age of the household head was about 40 years in treatment areas, about 0.95 year less than that in control areas, a statistically significant difference. Interestingly, considering the female headed households only, the mean age of the female head was 41 years which was 1.12 years less than control area, but this difference was not statistically significant.

Table 2: Characteristics of household heads

Characteristic	Participating (treatment)	Non-participating (control)	Difference
Mean age of HH head (years)	40	41	-0.95 ^b
Mean age of head for female headed HHs	41	42	-1.12
% of HH heads with some education	20	19	0.016
% of female heads with some education	11.8	8.6	0.033

^b Project impact is statistically significant at the 5% level

The education levels of the household heads are also compared and no significant difference was found. In particular, the percentage of household heads that had some education was about 20% in the treatment group and 19% in the control group. But there is no statistically significant difference. By the same token, the difference between the percentage of female household-heads who had some education was 11.8% in the treatment group and 8.6% in the control group, but there was no statistically significant difference.

Organization of the Report

The report is organized as follows. A summary table of all major results (with difference-in-difference estimation) has already been presented. A brief summary of the different elements of the FSUP project, including a demographic profile, has been provided. The next seven sections present a systematic evaluation of the project's impact.

1. **Section One:** Economic Conditions
2. **Section Two:** Food Security
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In each section, data permitting, comparisons are made between groups (treatment and control) as well as across time (between 2010 baseline, 2011, and 2012 surveys). Also, whenever appropriate, qualitative information and case studies are shared to shed light on issues and stories that go beyond mere numbers and statistics.

Section 1

ECONOMIC CONDITIONS

The FSUP project is primarily designed to provide cash transfers to ultra-poor women for the purposes of ensuring immediate food security and of accumulating productive assets, leading to higher income, longer term income streams and future food security. This section aims to provide a statistical analysis of the economic impact of the project on the lives and livelihoods of the participating women and their households. Effects on economic activities, asset ownership, income generating activities, and savings and loan behavior will be explored in detail. Whenever appropriate, attention will be given, specifically, to measuring the impact experienced by the participating women. Lastly, selected qualitative information will also be presented to build on the conclusions drawn from quantitative analysis.

Impact on Economic Conditions

The economic impact of the FSUP project was expected to be realized through, at least, two avenues. First, the monthly cash transfer and one-time cash grant *directly* contribute to generating productive assets for the ultra-poor households. This effect can be classified as an outcome. The second is an *indirect* and longer term effect, where, the productive assets were gainfully employed in income generating activities, thereby, resulting in more sustainable income flow for these resource poor households. This generated savings and further asset creation. The project also included entrepreneurial training, which may have contributed directly to healthier income prospects for the future.

Table 3 presented on the following page summarizes the results for the major economic indicators and compares between participating households/individuals (or treatment) and non-participating ones (or control). Table 3 also shows how each result changed from the 2010 baseline to the 2012 survey and the impact of the project through difference-in-difference estimate against each indicator.

Table 3: Major economic indicators

Indicator	Participating (treatment)				Non-participating (control)				D-i-D
	Baseline	2011	2012	$\Delta 1$	Baseline	2011	2012	$\Delta 2$	$\Delta 1 - \Delta 2$
Average monthly HH income (Taka)	1,953	4,517	6,377	+4,424	1,822	3,023	4,174	+2,352	+2,072 ^a
Average monthly per capita income (Taka)	502	1,233	1,534	+1,032	483	826	1,018	+535	+497 ^a
Median of monthly HH income (Taka)	1,917	4,052	6,000	+4,083	1,750	2,584	4,000	+2,250	+1,833 ^a
Average monthly HH expenditure (Taka)	2,851	4,788	6,506	+3,655	3,066	3,832	5,028	+1,962	+1,693 ^a
Average number of HH income sources	2.8	3.3	4.9	+2.1	3.3	2.7	3.9	+0.6	+1.5 ^a
Average HH asset score	0.14	0.18	0.21	+0.07	0.17	0.16	0.14	-0.03	+0.1 ^a
Average HH asset score - productive	0.103	0.15	0.156	0.053	0.124	0.118	0.121	-0.03	0.056 ^a
Average HH asset score – non-productive	0.227	0.25	0.324	0.097	0.259	0.256	0.293	0.034	0.063 ^a
Average HH asset value (Taka)	20,103	48,113	67,958	+47,855	20,418	26,461	47,471	+27,053	+20,802 ^a
% of participating women who earned	72	92	98	+26	76	64	87	+11	+15 ^a
Average monthly earnings per woman who earned (Taka)	327	1,129	1,755	+1,428	229	445	603	+374	+1,054 ^a
% of women's income share in total HH income	20	26	30.8	+10.8	17	19	18.5	+1.5	+9.3 ^a
% of participating women with savings	39	100	100	+61	50	49	49	-1	+62 ^a
Average savings per participating woman who saved (Taka)	950	2,757	4,404	+3,454	1,436	2,836	2,266	+830	+2,624 ^a
% of participating women with loans	47	26	29	-18	76	69	67	-9	-9 ^a
Average loans per woman who borrowed (Taka)	2,842	2,748	3,672	+830	6,147	7,106	5,694	-453	+1,283 ^a

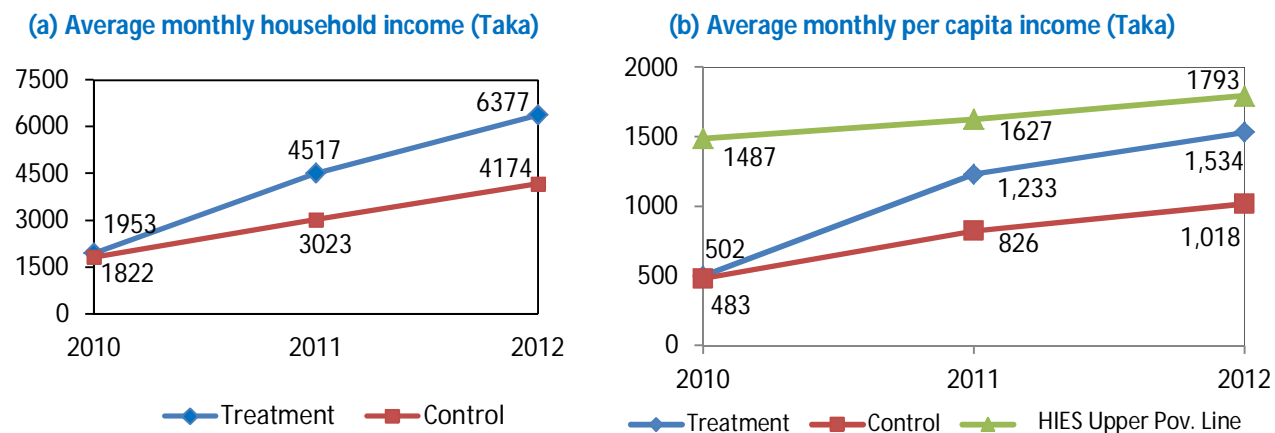
$\Delta 1$ = Treatment 2012 – Treatment 2010 Baseline; $\Delta 2$ = Control 2012 – Control 2010 Baseline

^a Project impact is statistically significant at the 1% level

Household Income

As expected, there was a significant increase in the monthly income of the participating women's households. It was found that the mean monthly household income increased by about 227% between the 2010 baseline and the 2012 survey, from 1,953 Taka to 6,377 Taka. The corresponding increase for the control households was 129%, from 1,822 Taka to 4,174 Taka (see graph (a) in figure 5). Using the difference-in-difference estimation, we can reasonably conclude that, due to the project, there has been an increase of about 2,072 Taka in mean monthly household income. A similar trend was observed in per-capita monthly income. The per capita monthly income increased by around 207% for the participating women's households (502 Taka to 1,534 Taka) and by about 111% for the control group (483 Taka to 1,018 Taka) between the baseline and the 2012 survey (see graph (b) in figure 5). Graph (b) also shows the upper poverty line from the Household Income and Expenditure Survey (HIES) 2010 with inflation adjusted values for 2011 and 2012. It is evident that the gap between the upper poverty line and the per capita income had diminished significantly for the treatment group (relative to the control group).

Figure 5: Income trends



There was also a significant increase in the number of household income sources. For the participating women's households, the number of income sources almost doubled from 2.8 to 4.9. In the control group, there was only a slight increase from 3.3 to 3.9 income sources. Difference-in-difference estimation shows that an increase of (about) 1.5 income sources can be attributed to the project and the impact is statistically significant at the 1% level. The case of Rejia below provides an example of how income sources increased for the participating women.

Rejia: Single mother living with two daughters

District: Bogra

Union: Khordbolail

Upazila: Shariakandi

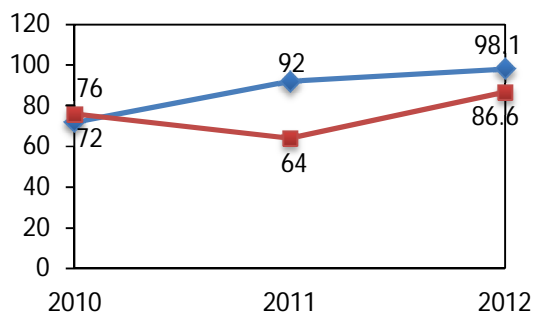
Rejia (45) has been living on government land beside Pascim Para Damin Shariakandi upazila under Bogra District for the last twelve years. Her husband married again elsewhere and left her and her children in 2004. Since then, she led a difficult and economically vulnerable life with two daughters, Bulbuli (16) and Hajera (15), constantly struggling to provide adequate food for herself and her daughters. She was selected as a participant under the FSUP project in 2010. Since that time, she has been able to save 100 Taka every month in her self-help group. Rejia received training on bull fattening as well as the 14,000 Taka fixed grant after successfully completing the training. She bought a cow with 13,000 Taka and used the rest of the grant money to buy some poultry. After six months, she sold the cow for 22,000 Taka and re-invested the money in more diversified animal husbandry. Rejia now generates income from four sources (cow rearing, goat rearing, poultry and agro-based day laboring) and last year was able to start crop cultivation after leasing 22 decimals of land.

Female Income

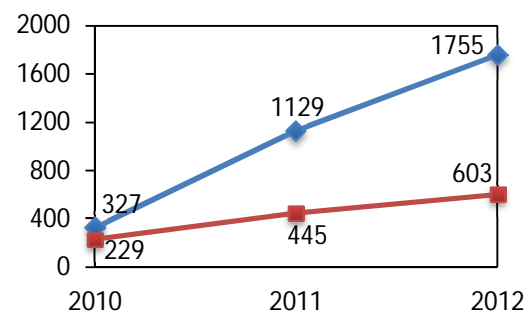
About one third of the increase in mean monthly household income in the treatment group can be attributed to the significant increase in the income of the participating women. The percentage of women who have some earnings has increased from 72% to 98% in the treatment group, while, in the control group, it has increased from 76% to only 87%. Figure 6 below presents the trend lines for the women's income indicators.

Figure 6: Women's earnings

(a) Percentage of participating women earning



(b) Average monthly income of participating women (Taka)



◆ Treatment ■ Control

◆ Treatment ■ Control

In addition, the average income per woman (who earns) was much higher for the project participants. In the baseline survey, the average female monthly income of the participating women was 327 Taka, while it was 229 Taka for the control group. In the 2012 survey, it was seen that the average woman's income increased to 1,755 Taka for the project participants (437% over their baseline value) and 603 Taka for the control group (163% over their baseline value).

Lastly, the share of women's income in overall household income has increased. Amongst the treatment group, the share of women's income against household income has increased from 20% to 31%. In the control group, this share has increased from 17% to 18%. Difference-in-difference estimation then shows a 10 percentage point increase in women's income share directly due to the project.

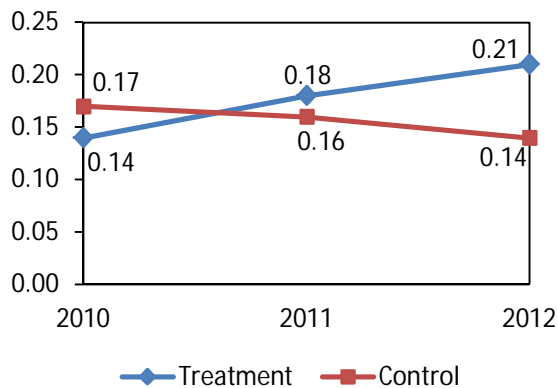
Asset Ownership

There have been significant improvements in the ownership of assets as well. To analyze this we first look at changes in assets scores for: (i) all household assets; (ii) only productive assets (without land); and (iii) only non-productive assets. Second, we investigate changes in household asset values: (i) for all assets; and (ii) for productive and non-productive assets. We conclude by analyzing changes in ownership of a number of key productive assets (for the households of participating women only).

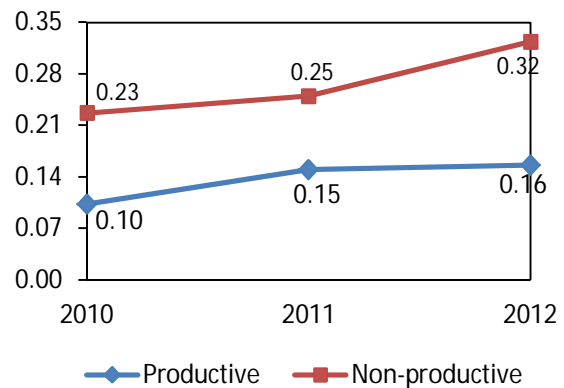
The two graphs in figure 7 show how asset scores change over time; graph (a) plots the overall asset scores (for treatment and control) and graph (b) shows the participating women's households' asset scores (productive and non-productive). Graph (a) depicts a steady increase in the overall asset score for the households of project participants. Compared to the baseline survey, the survey found that the asset score has increased from 0.14 to 0.21. During the same period, for the control households, it has decreased from 0.17 to 0.14. It is found, from difference-in-difference estimation, that the project's contribution in the asset score improvement was 0.10. In graph (b), productive asset score, in the treatment group, had also risen from 0.10 to 0.16, which suggests a project contribution of (approximately) 0.056 units. Similarly, (approximately) 0.063 units of change in non-productive asset score can be attributed to the project.

Figure 7: Asset scores

(a) Average household asset scores including land



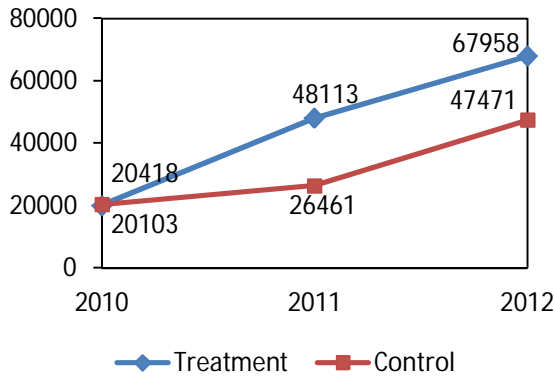
(b) Participating women's households' productive and non-productive asset scores (excluding land)



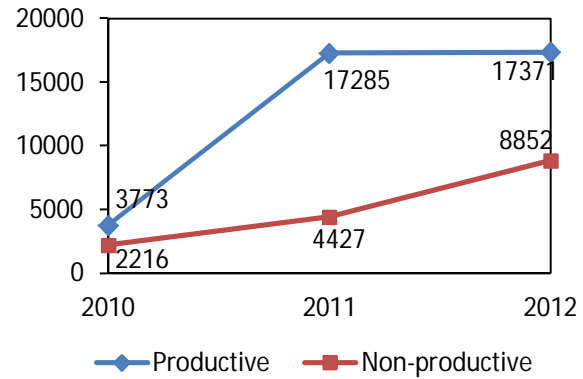
Similar trends of improvements were also observed in productive, non-productive, and overall asset values. Graph (a) of figure 8 depicts the increase in value of total assets for the treatment and the control groups. Total asset value increased from 20,103 Taka to 67,958 Taka (by about 238%) for the households of the participating women and from 20,418 Taka to 47,471 Taka (by about 133%) for the control group.

Figure 8: Value of assets (Taka)

(a) Average household asset values (Taka) including land value



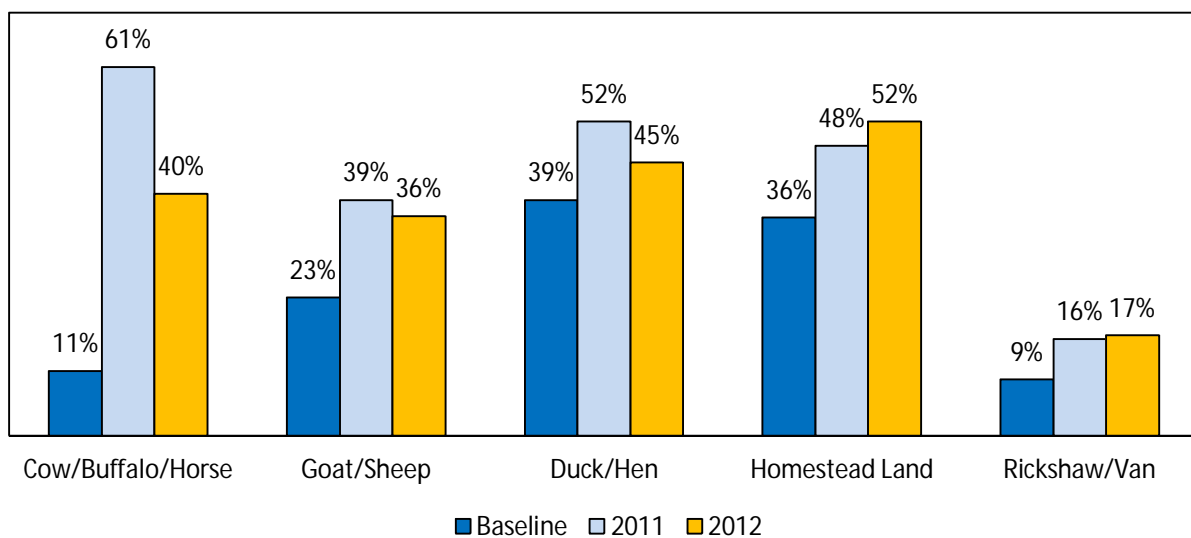
(b) Participating women's households' productive and non-productive asset values (Taka) excluding land value



Graph (b) shows productive and non-productive asset values for the participating women's households over time. It is seen that the value of productive assets increased from 3,773 Taka to 17,371 Taka (by about 360%) and that of non-productive asset increased from 2,216 Taka to 8,852 Taka (by about 300%). An interesting observation that comes out is that the value of non-land productive assets was (almost) stagnant between 2011 and 2012 (17,285 Taka compared to 17,371 Taka). This is very consistent with household asset score of the non-land productive assets and reflects that the main investment period was between 2010 and 2011.

Figure 9 below depicts the percentage of participating women's households that own a particular type of productive asset and shows how ownership changed from the 2010 baseline to the 2012 survey. Compared to the baseline, there was a very strong evidence of improvement in the percentage of ownership of each type of asset.

Figure 9: Changes in asset ownership



Income Generating Activities (IGA)

One of the stated objectives of the FSUP project was to achieve food security and economic growth through improved livelihoods for the women participants' households. This part of the report elaborates the general pattern of women's involvement in various IGA and how the pattern has changed over time between the year 2011 and 2012. As can be seen from the table, the initial investments in 2011 were predominantly in animal-based IGA, like cattle, buffalo, goat and chicken rearing. The 2012 survey data reflects shifting away from the women's initial investment towards crop cultivation which needs to be undertaken by or with their husband.

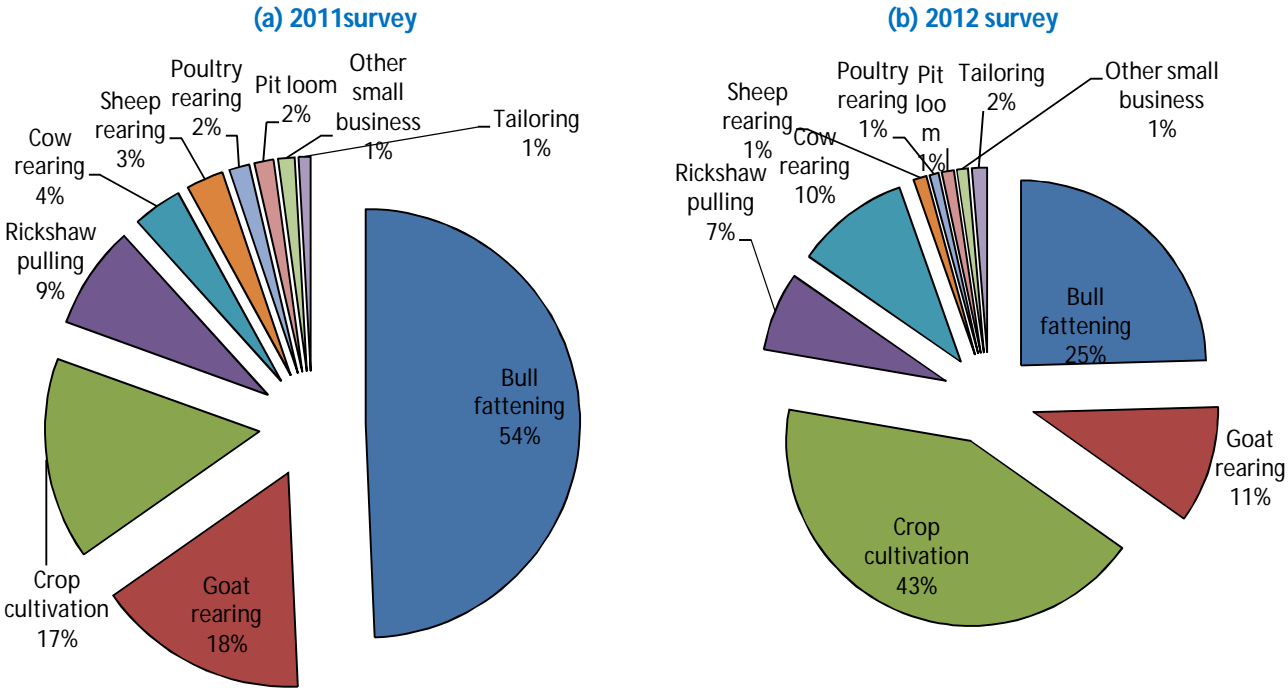
Table 4: Change in the proportion of households engaged in various IGAs

Indicator	% of households (in 2011 survey)	% of households (in 2012 survey)
Bull fattening	54.4	25
Goat rearing	17.6	11.3
Crop cultivation	16.8	43
Rickshaw/van pulling	8.6	7.3
Cow rearing	4.1	10
Sheep rearing	3.1	1.3
Poultry rearing	1.7	1.0
Pit loom	1.6	1.3
Other small business	1.4	1.2
Tailoring	1.0	1.6

Note: Excluding IGAs that were operated by less than 1% of the households

The two graphs in figure 10 below presents a contrasting picture of the most frequently chosen IGAs and how the choices have changed from 2011 to the 2012 survey.

Figure 10: Frequency of chosen IGAs



About 1,119 households responded who were engaged in 1,436 IGAs in total. This implies that a number of households were engaged in more than one IGA. Table 4 shows that there was a significant increase in the number of households engaged in crop cultivation (15% to 43%) and cow rearing (4.1% to 10%). On the other hand, fewer households engaged in bull fattening, goat rearing and sheep rearing (compared to the percentage undertaking these IGAs in 2011). In particular bull fattening has decreased substantially from 54.4% of households reported engaging in it in the 2011 outcome survey, to only 25% of households in 2012. Table 5 below presents some further results on the various aspects on the frequently chosen IGAs selected above.

Table 5: Summary results for particular IGAs

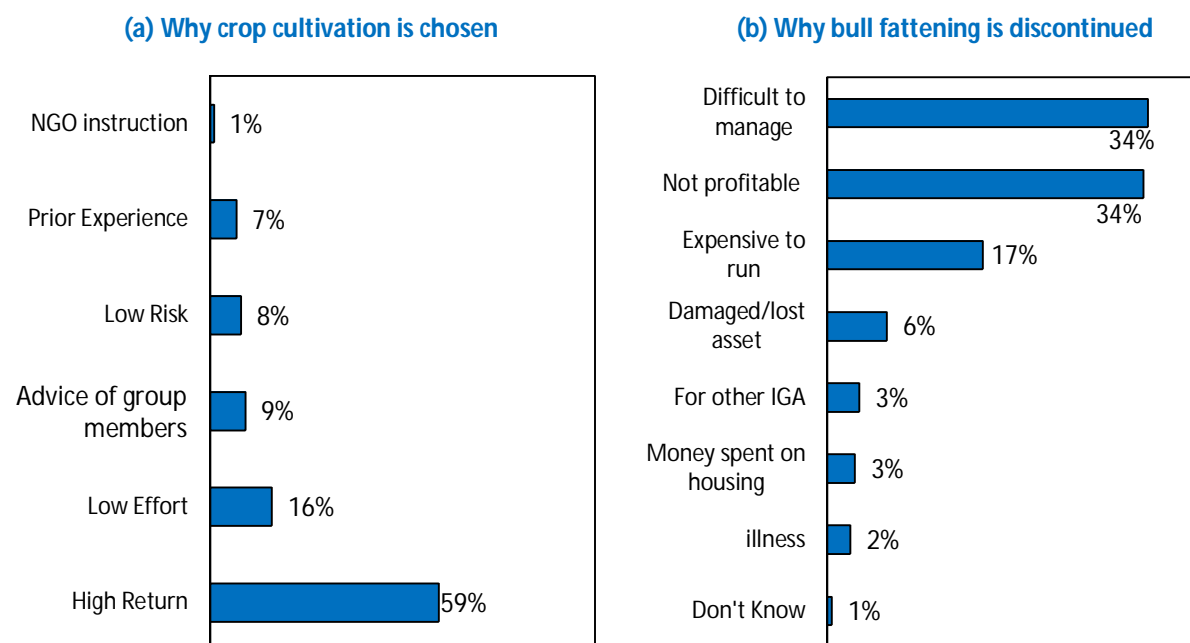
Indicator	Days engaged	Initial investment (Taka)	% of households with previous experience
Bull fattening	363	14,646	60
Goat rearing	280	7,998	57
Crop cultivation	312	13,100	53
Rickshaw/van pulling	331	6,544	69
Cow rearing	247	18,763	59
Sheep rearing	314	8,358	56
Tailoring	180	4,500	100

In this last part, we aim to further explore why a large proportion of households were starting to choose crop cultivation and why a large percentage chose to move away from bull fattening. It is found that 59% of those households engaged in crop cultivation believed that it would generate high returns whereas 15% reported to have expected a low effort to run this IGA. Qualitative evidence also suggests some of the reasons why crop cultivation seemed to be a frequently chosen IGA.

- Maize, mustard, cucumber, chili, onions, and other vegetables are easily produced crops.
- More than one crop can be produced in a year.
- The option to mortgage in cultivable land against a fixed amount of money that would need to be repaid by the landowner before land is returned (*bondhok*) exists; this makes crop cultivation very lucrative as a potential IGA.

Graph (a) in figure 11 shows relative frequencies of various reasons for which crop cultivation was chosen as an IGA.

Figure 11: A look at crop cultivation and bull fattening



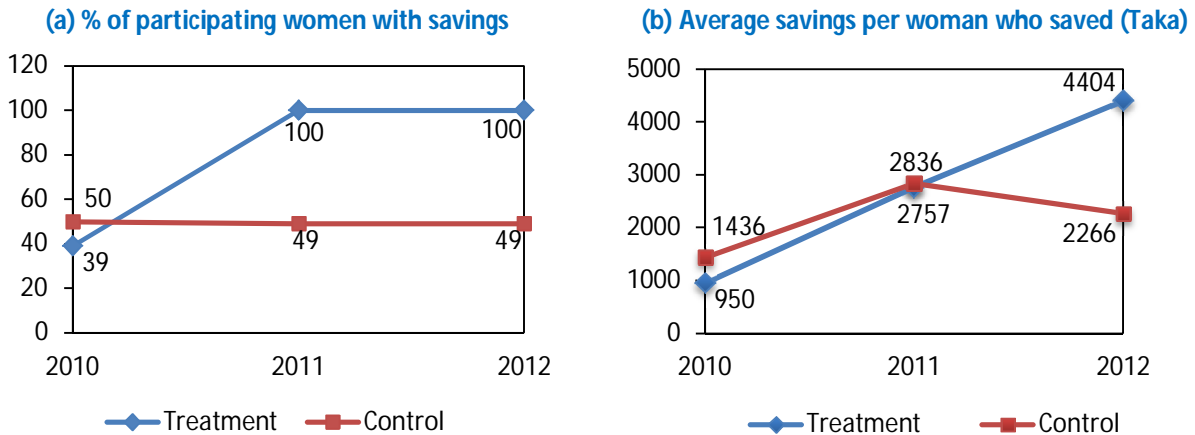
Data indicates that 34% of the households engaged in bull fattening thought it was difficult to manage, and 34% believed that it was not profitable. Figure 11(b) above shows the relative frequencies of the most commonly reported reasons for discontinuing bull fattening. Qualitative interviews shed light on the ground realities as to why bull fattening was discontinued by a large proportion of households. Some of the common difficulties faced by women who chose bull fattening become evident from the following discussion.

- In the case of animal death, there was loss of an economic asset
- Feed prices for bulls were often too high
- In the flood prone areas, continual flooding of grasslands made it difficult to collect grass. Thus, feed prices were high
- Animal's health needed to be regularly monitored
- A lack of physical space for rearing bulls

Savings and Loans

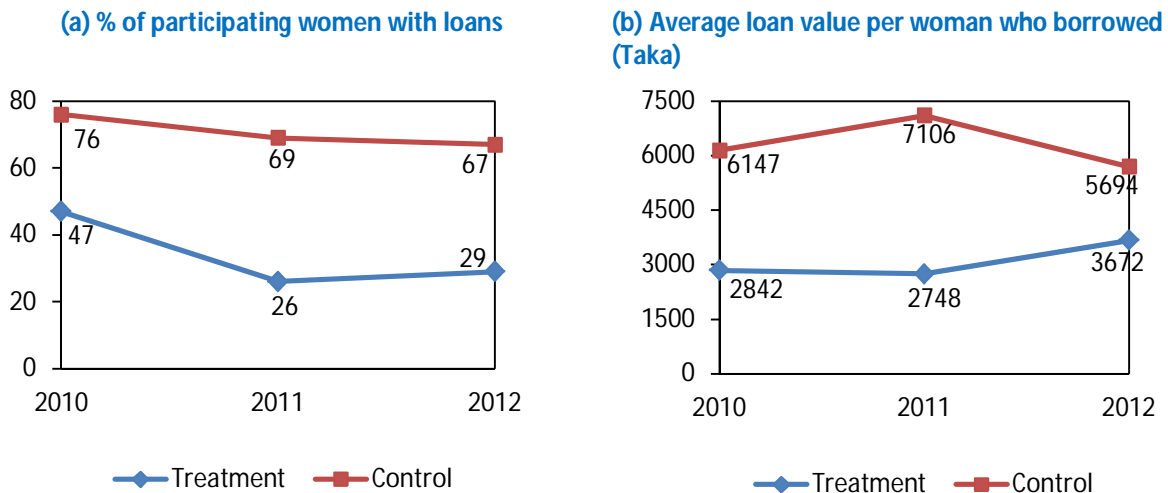
This section explores the impact of the project on savings and loans. It is seen that, at the completion of the 2012 survey, 100% of the participating women had savings as opposed to only 39% in case of the 2010 baseline survey. Average savings per woman increased by more than 350%, from 950 Taka to 4,404 Taka; while, for the control group, average savings increased from 1,436 Taka to 2,266 Taka. The substantial increase in savings should provide the participating women's household with a much needed financial cushion in times of economic variability. Figure 12 below shows the time trends for these key results.

Figure 12: Savings



The proportion of participating women with loans declined substantially from 47% during the 2010 baseline to 29% in the 2012 survey. Qualitative information also suggests that the tendency to take loans (for example, from NGOs) decreased among the participating women. Over the same period of time, for among the control group, this proportion fell from 76% to 67%. Although, for the participating women, the average value of loans increased from 2,842 Taka to 3,672 Taka; for the control group, average loans slightly declined from 6,147 Taka to 5,694 Taka over the same period. In general, a much smaller portion of the participating women were taking loans while these loans, on average increased in value. Figure 13 presents this contrasting picture for the participants and the control group:

Figure 13: Loans



Section 2

FOOD SECURITY

The prime focus of the project was to improve food security through building livelihoods for ultra-poor households that can ensure a sustainable generation of income for access to adequate food. This section aims to examine further if or to what extent the status of food security has changed in line with the improved economic (or purchasing) capacity of the ultra-poor households. The status of food security has been assessed by employing a number of indicators including food consumption level, diet diversity, meal frequency and food expenditure patterns of the households. The comparison of food security status between the 2010 baseline and the 2012 surveys would provide some reflection of the food security situation with and without the provision of a monthly subsistence allowance. Unfortunately due to the lack of anthropometric data, the project's impact on nutrition could not be determined.

Impact on Food Security

The effect on food security will be investigated using data on food consumption score, frequency and composition of meals, and expenditure on food. Table 6 presents the key results for this part:

Table 6: Food security indicators

Indicator	Participating (treatment)				Non-participating (control)				D-i-D
	Baseline	2011	2012	$\Delta 1$	Baseline	2011	2012	$\Delta 2$	$\Delta 1 - \Delta 2$
Average number of full meals eaten by HH members per day	2.5	3	3	+0.5	2.5	2.8	2.9	+0.4	+0.06 ^a
% of participating women consuming three full meals a day	32	97	98	+66	38	77	89	+51	+15 ^a
Average Food Consumption Score (FCS) per HH	33	50	56	+23	35	36	46	+11	+12 ^a
Number of food types consumed in the last week	6.3	8.8	9.8	+3.5	6.7	6.8	8.2	+1.5	+2 ^a
Monthly expenditure on food per HH member (Taka)	461	770	875	+414	522	654	669	+147	+267 ^a
% of HH's monthly expenditure on food	65	64	59	-6	66	65	60	-6	0
% of HHs with 'borderline' or 'poor' food consumption levels (based on FCS)	83	38	22	-61	81	76	47	-34	-27 ^a

$\Delta 1$ = Treatment 2012 – Treatment 2010 Baseline; $\Delta 2$ = Control 2012 – Control 2010 Baseline

^a Project impact is statistically significant at the 1% level

Food Consumption Score

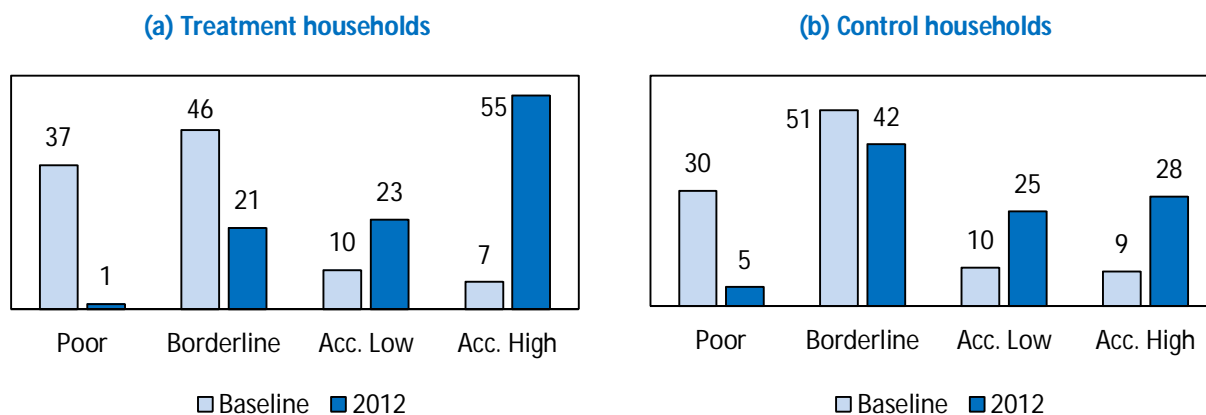
The food consumption score was calculated based on the frequency of consumption of sixteen food⁸ groups or types (consumed over the past seven days). It is found that, between the 2010 baseline and 2012, there was a 70% increase in food consumption score from 33 points to 56 points for the participating women's households. Over the same period, the control group experienced a 31% increase in food consumption score. Following the methodology of the 2011 FSUP Annual Outcome Survey Report, we define four categories:

Box 3: Evaluating food consumption scores

1. Poor consumption	score \leq 28
2. Borderline consumption	$42 \geq$ score $>$ 28
3. Acceptable low	$52 \geq$ score $>$ 42
4. Acceptable high	score $>$ 52

Figure 14 below shows the percentage of households that fall in each of the four categories identified above and, also, shows how these percentages have changed from the 2010 baseline to 2012. The information is provided for treatment and control households.

Figure 14: Percentage of households in different categories of food consumption score



For the treatment group, the percentage of households in the “Poor” category decreased from 37% to 1% and, in the “Borderline” category from 46% to 21% (see graph (a)). Graph (b) exhibits a similar pattern for the control group, but in much smaller magnitudes: the percentage of households in the “Poor” category decreased from 30% to 5% and in the “Borderline” category from 51% to 42%. Taking both together, the percentage of treatment households that had, at best, a borderline food consumption level decreased from 83% to 22%, whereas, in the control group, it has gone down from 81% to only 47%. The difference-in-difference estimate suggests that a 27 percentage point decrease in households having (at best) borderline food consumption level can be attributable to the project.

This decrease in poor and borderline food consumption level results in an increase in the percentage of households in the other categories. More specifically, the percentage of households in the “Acceptable Low” category increased from 10% to 23% and, in the “Acceptable High” category, from 7% to even

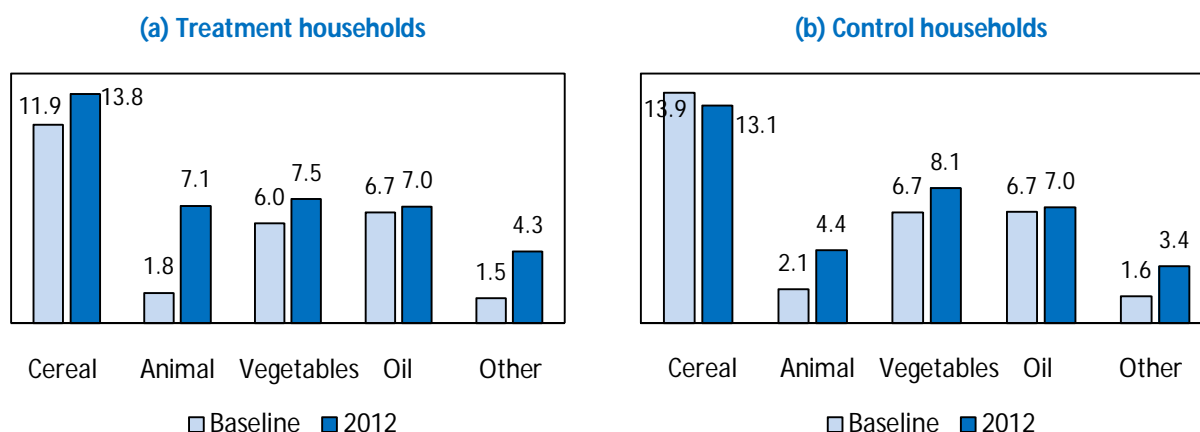
⁸ The number of food types consumed in the last one week is based on sixteen food groups. The food consumption score is computed based on nine food groups, as per WFP methodology.

55%. In graph (b), the control households also exhibit similar patterns of change in the “Acceptable Low” category (increase from 10% to 25% of the households). However, in the “Acceptable High” category the increase in the percentage of households was much smaller from 9% to 28%. Hence, the percentage of households having “Acceptable” level of food consumption has increased by 61 percentage points (from 17% to 78%) in the treatment group whereas in the control group this increase was 34 percentage points (from 19% to 53%). The difference-in-difference estimate indicates a 27 percentage point increase that can be ascribed to the project, as expected.

Dietary Diversity

Dietary diversity relates to the variety of food items consumed by the households. Figure 15 presents the frequency of consumption of different food types between the 2010 baseline and the 2012 survey, for treatment and control households. Data was collected on the number of days in which each of the sixteen types of food was consumed (over the last week). Using this information, the sixteen specific types of food were aggregated (or collapsed) into five broad categories of food as shown in the figures below.⁹ Hence, for each of the five categories, the numbers shown in the figures indicate a combination of both frequency and variety of food consumed within each category.

Figure 15: Frequency of consumption for various food categories



For the treatment households there was an increase in the consumption of all the food types (from the 2010 baseline to 2012), especially in animal-based food, vegetables and other categories. The control households also experienced increased consumption in these categories (except for cereals), but the changes were relatively smaller, especially with regard to animal-based food. In particular, the difference-in-difference estimate for animal-based food shows an increase of about 3 units, a 167 percentage point increase that can be attributed to the project. Given that consumption of animal-based food is important (being an important source of protein) but yet a rarity (especially in ultra-poor households) in rural Bangladesh, these changes can be considered as significant improvements in nutritional intake.

⁹ For example, suppose one household’s frequency of consumption of meat, chicken and fish per week is 1, 2 and 3 times per week respectively. This household’s consumption of animal based food then equals 6.

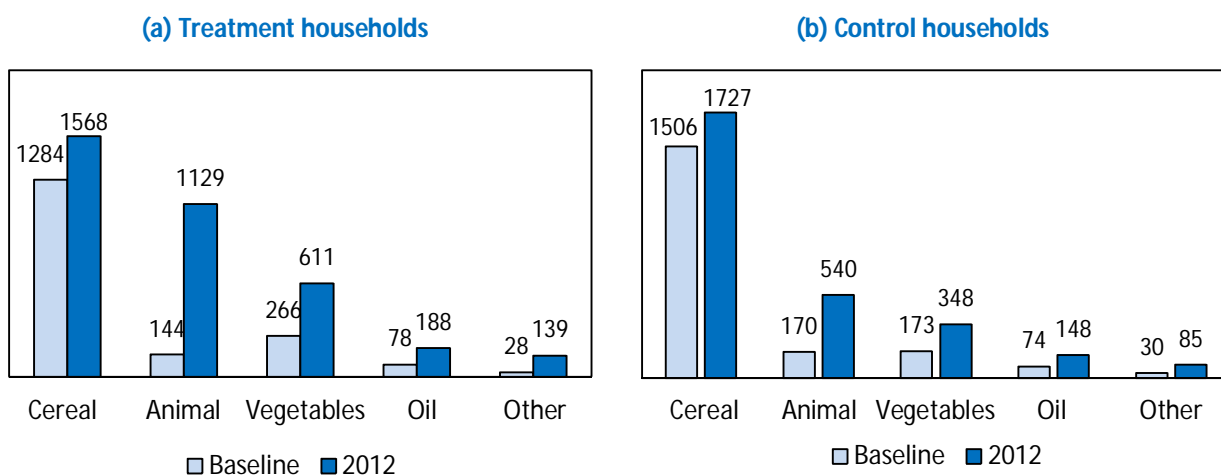
Food Expenditure

One of the objectives of the project was to ensure food security through increasing the income of the participating women and their households. In the short-term this was to be achieved through the monthly cash transfer of 500 taka to the women. The result shows, per capita monthly food expenditure increased from 461 Taka to 875 Taka in the treatment group. Over the same period of time this expenditure increased in the control group from 522 Taka to 669 Taka. Evidence then suggests an increase in monthly food expenditure of 267 Taka that can be attributed to the project.

In addition, with increasing income there was a reduction in the percentage of the monthly per capita expenditure on food items, as is expected from economic theory. The proportion of total expenditure on food items has gone down from 65% to 59% for the treatment group (between 2010 baseline and 2012). A similar trend is observed in the control group: the proportion diminished from 66% to 60% in 2012. The difference-in-difference estimate is insignificant.

Figure 16 below shows the breakdown of monthly per capita expenditure by different categories of food. Graph (a) shows the treatment group and graph (b) shows the control group. We observe an expected pattern in most food categories, that is, spending increased between baseline and 2012 (for both treatment and control). Two observations in particular stand out. First, consistent with the previous observation of increased frequency of animal based food intake, expenses on animal-based food (i.e., protein) have increased significantly in the treatment group compared with the control group. The increase in household expenditure on animal-based food from 2010 to 2012 in the treatment group was 985 Taka which, after adjusting for inflation of food items, was about 802 Taka (about 557% increase over the baseline expenditure on animal protein). In the control group, the increase was 370 Taka, which in real (inflation-adjusted) terms, was about 301 Taka (about 177% of the baseline value). The difference-in-difference inflation adjusted estimate is 501 Taka which can be attributed to the project.

Figure 16: Monthly expenditure by food categories (Taka)



The difference-in-difference estimate does not provide even moderate evidence of increase in frequency of oil consumption. However, there was an increase in monthly oil expenditure (from 78 Taka to 188 Taka for the treatment group), even in the difference-in-difference estimates (about 36 Taka).

This indicates that households possibly switched from cheaper cooking oil, such as palm oil to more expensive substitutes like soybean oil.

Frequency of Meals

This part of the report focuses on the number of meals consumed by adult members of the households as well as a number of other measures. The changes are compared across groups and over time. The average number of meals consumed per day remained stable since the 2010 survey (see Table 6 above). Results show that the average number of meals consumed increased from 2.5 to 2.98 meals for the treatment group from 2010 baseline to 2012. For the control group, over the same period, this number increased from 2.5 to 2.92. However, the difference-in-difference does not represent any statistically significant impact of the project. A number of other food security indicators are presented in Table 7 below, and, numbers are compared between groups and across time.

Table 7: Additional indicators of food security

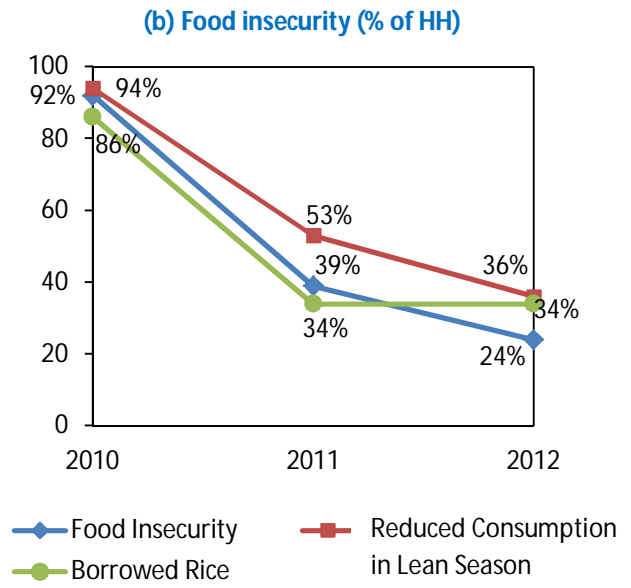
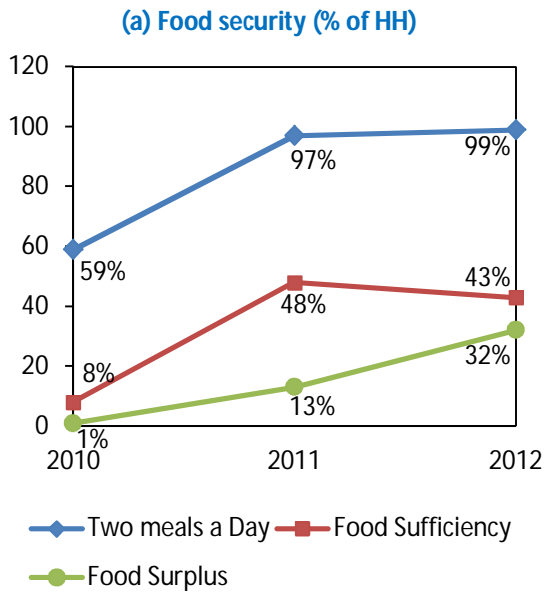
Indicator	Participating (treatment)				Non-participating (control)				D-i-D $\Delta 1 - \Delta 2$
	Baseline	2011	2012	$\Delta 1$	Baseline	2011	2012	$\Delta 2$	
% of women consuming at least two meals in a day	95.6	99.9	99.3	+3.7	97.1	99.8	99.8	+2.7	+1
% of HHs who could afford at least two meals per day	59	97	99	+40	60	90	97	+37	+3
% of HHs who reported food insecurity	92	39	24	-68	97	81	66	-31	-37 ^a
% of HHs who reported food sufficiency	8	48	43	+35	2	16	21	+19	+16 ^a
% of HHs who reported food surplus	1	13	32	+31	1	2	13	+12	+19 ^a
% of HHs who reported declining food consumption during lean season	94	53	36	-58	99	84	72	-27	-31 ^a
% of HHs who borrowed rice last month	86	34	34	-52	87	70	72	-15	-37 ^a
% of HHs who lent rice last month	43	29	39	-4	60	26	23	-37	+33 ^a

$\Delta 1$ = Treatment 2012 – Treatment 2010 Baseline; $\Delta 2$ = Control 2012 – Control 2010 Baseline

^a Project impact is statistically significant at the 1% level

For the treatment group, the changes in all of the indicators above point towards increasing food security (and declining food insecurity). Figure 17 below captures the trend of change in these indicators; graph (a) shows the measures of security and graph (b) shows the measures of insecurity. Results show that all measures of food security, affordability of two meals a day, reporting food sufficiency, and reporting food surplus, show strong improvements from baseline to the 2012 survey. On the other hand, all measures of food insecurity, reporting food insecurity, instances of reduced consumption in the lean season, and borrowing rice from others, show strong declining trends from baseline to the 2012 survey. It turns out that, in all these measures except one, the evidence of project impact is very strong. Only in the case of affordability of two meals a day, there is insufficient evidence of project impact.

Figure 17: Additional food security measures (treatment group)



Section 3

DISASTER RISK AND RESILIENCE

One of the specific objectives of the project was to increase the participating women’s awareness regarding the potential impact of natural disasters, how to prepare for such disasters and what effective coping strategies to follow when disasters strike. This section discusses the incidence and extent of damages from natural disasters experienced by the households. Attention is also focused on disaster preparedness and coping strategies employed when facing disasters. Regarding disaster preparedness, we look at both individual and community level initiatives. The extent of disaster preparedness will also be contrasted between project participants and non-participants. Unfortunately, no information was collected on disaster preparedness at the baseline survey. We, therefore, compare between the project participants and non-participants using data only from the 2012 survey. The Coping Strategy Index score¹⁰ is also employed (as in the baseline survey report).

Incidence and Loss

Table 8 below outlines the three major disaster impact indicators and how they changed between the three surveys. We first discuss the incidence and amount of loss due to disaster. The 2012 survey results show that 20% of participating women faced disaster loss, half of those that reported loss in the baseline survey (40%). For the control group, this number declined from 50% to 35% (from the 2010 baseline to the 2012 survey).

Table 8: Disaster impact

Indicator	Participating (treatment)				Non-participating (control)				D-i-D Δ1 – Δ2
	Baseline	2011	2012	Δ1	Baseline	2011	2012	Δ2	
% of participating women who faced disaster loss	40	35	20	-20	50	33	35	-15	-5
Average disaster loss by HHs who faced disasters (Taka)	1,604	1,995	901	-703	2,232	2,458	1,608	-624	-79
Average Coping Strategy Index score	2.1	1.1	1.3	-0.8	2.4	1.1	1.5	-0.9	+0.1

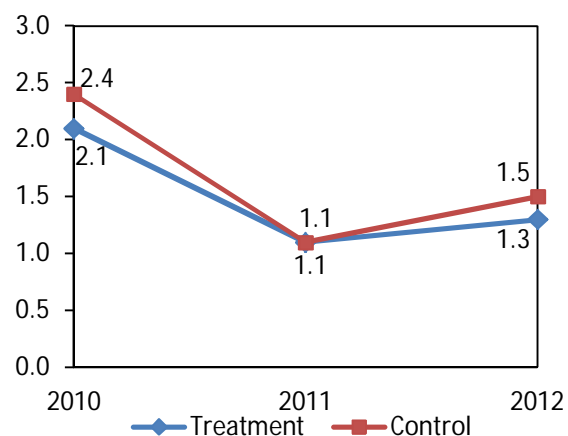
Δ1 = Treatment 2012 – Treatment 2010 Baseline; Δ2 = Control 2012 – Control 2010 Baseline
Results are not statistically significant

Also, on average, treatment households lost 901 Taka due to disasters in 2012, down from 1,604 Taka at the 2010 baseline survey; a decrease of approximately 44%. In contrast, for the control households, the average loss has fallen from 2,232 Taka to 1,608 Taka (by approximately 28%). The decrease in the share of respondents facing disaster loss as well as the decline in the average size of such losses may point

¹⁰ The CSI is calculated following a methodology outlined in TANGO and WFP, 2006 *Rural Bangladesh Socio-Economic Profiles of WFP Operational Areas and Beneficiaries*, TANGO International.

towards increased resilience for the project participants, however the difference-in-difference estimates are not statistically significant.

Figure 18: Coping Strategy Index score



In order to assess how households cope once faced with natural disaster WFP’s Coping Strategy Index (CSI) was computed for the treatment and the control groups and compared with the baseline survey. A higher CSI score indicates a poorer coping strategy and, therefore, greater vulnerability. It is found that there was a decrease in CSI from 2.1 to 1.3 in the treatment group. The CSI also decreased in the control group, from 2.4 to 1.5. Figure 18 shows the change in CSI values across the three surveys. The treatment group hence showed a stronger coping strategy than the control group.

Disaster Preparedness

We now focus on knowledge about and initiatives taken for disaster preparedness. Table 9 below provides a breakdown of the percentage of women in the treatment and control group who were aware about preparation for various disaster events.

From the table, across all the disaster categories, a significantly higher proportion of women in the treatment group knew about preparedness. This is undoubtedly an important positive impact of the project. The percentage of households preparing for floods was more than double in the treatment group compared to that of the control group (98.4% as opposed to 48.5%). For river erosion, 24.5% of the women in the treatment group knew about preparedness compared to 5.9% in the control group. For wind damage the percentage of women who knew about preparation was more than double the control group; 28.4% as opposed to 12.4%. Lastly, in case of fire accidents, 46.5% of the women in the treatment group had preparedness knowledge as opposed to 27.5% in the control group.

Table 9: Percentage of women who knew about disaster preparedness

Disasters	Participating (treatment)	Non-participating (control)
Flood	98.4%	48.5%
Drought	9.7%	0.2%
Cyclone	6.2%	0.3%
River erosion	24.5%	5.9%
Excessive rain	5.5%	2.6%
Water logging	1.3%	0.2%
Earthquake	7.7%	0.6%
Landslide	1.6%	0.2%
Wind damage	28.4%	12.4%
Fire accident	46.5%	27.5%

From the numbers in Table 9, it is seen that there are four major disasters which people most commonly prepare for and which show significant changes (between treatment and control groups). These are: (i)

flood; (ii) river erosion; (iii) wind damage; and (iv), fire accident. Table 10 below provides a detailed look at the numbers for actual preparation for these four disasters.

There was a higher percentage of households in the treatment group taking preparation for all the events than in the control group, with the exception of river erosion for which there was no difference.

Table 10: Percentage of households prepared

Disaster	Participating (treatment)	Non-participating (control)
Flood	28%	21%
River erosion	3%	3%
Wind damage	5%	3%
Fire accident	1%	0.5%

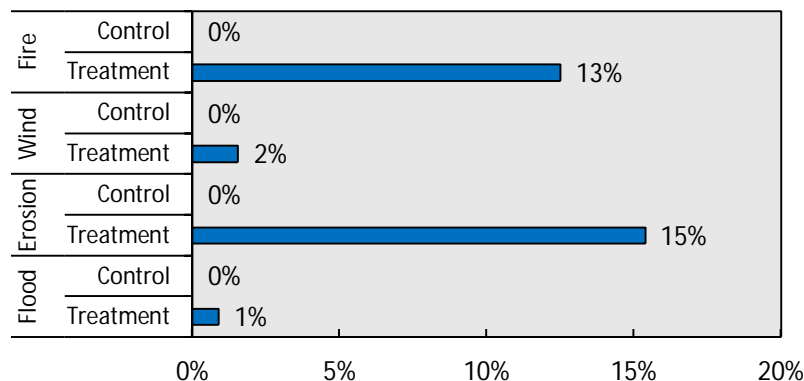
Coping Strategies

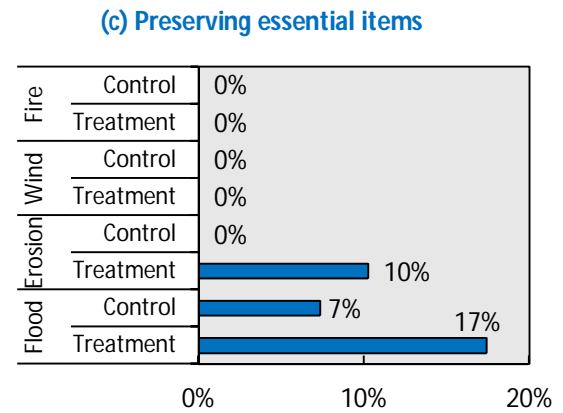
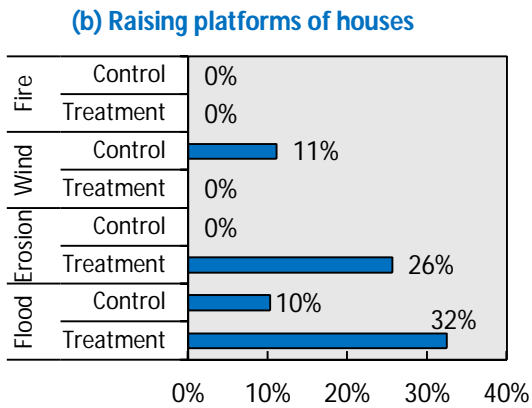
Table B1 in the appendix provides detailed information on each of the coping strategies chosen to tackle the four types of disasters identified above. In general, it must be noted that, for all the four disaster types, households in the treatment group invest in a more varied portfolio of actions compared to those in the control group. In addition, it is seen that, across all disaster types, the percentage of households choosing to “preserve cash” was higher for the treatment than the control group. For example, in case of river erosion and fire accidents, a substantially higher proportion of the treatment households choose to preserve cash (15% for erosion and 13% for fire related disasters). This comparison is shown in graph (a) of Figure 19 below.

In selected cases, other impacts of the project can also be seen. For example, in the case of floods and river erosion an important coping mechanism is to raise platforms of houses. 32% of treatment households were doing so (relative to about 10% of the control ones) in case of floods. In case of river erosion, about 26% of the treatment households were doing so (relative to about 0% of the control ones). These results are shown in graph (b) of Figure 19. A higher percentage of treatment households have adopted the strategy of preserving essential items such as dry food, saline, matchboxes etc. to prepare for floods (about 17% compared to 7% in the control group) and for river erosion (about 10% compared to 0% in the control group).

Figure 19: A look at selected coping strategies (% of households)

(a) Preserving cash as a precaution for disasters





Community Initiatives

In terms of initiatives for disaster risk reduction at the community level, about 11% of the treatment households reported observing (or knowing about) such activity while only 0.3% of the control households were aware of such activities. It should be noted, however, that the above numbers provide, at best, indicative evidence of the true extent (and scale) of community level initiatives taken. A large part of these initiatives were not observed or directly remembered during interviews. In total, 128 households in the treatment group said that they have seen initiatives taken for disaster risk reduction. Table 11 provides a breakdown of the responses.

Table 11: Observing community initiatives

What was observed (known)?	% of HHs*
Fixing the house	3%
Raising the platform of the house	9%
Preserving stove	8%
Keeping information about the nearest shelter	45%
Preserving dry food/saline/matchbox/candle/medicine	2%
Preserving drinking water	0.8%
Preserving fodder for cattle	0.8%
Saving/preserving cash	1.6%
Embankment	25%
Shelter center	5%
Road construction/repair	0.8%

*Total households = 128

Section 4

HEALTH AND SANITATION

This section discusses the impact of the FSUP project on women's and their households' health and sanitation. Specifically, three main areas are explored: (i) sickness and mortality; (ii) health-care seeking behavior; and (iii) sanitation practices. It must be noted that some of the indicators presented in this section were not included in the previous (2011) annual outcome survey report; therefore finding a trend over time (from the 2010 baseline to the 2012 survey) is not always possible. However, some of the baseline numbers are calculated and attention is given to comparing numbers between project participants and non-participants.

Sickness and Mortality

In order to investigate the impact on sickness and mortality, the incidence of sickness and morbidity is determined. The incidence is investigated by whether any member of the household has experienced sickness. The cost of sickness and morbidity was also analyzed in terms of income lost and cost of treatment.

Table 12 shows the main results and how each has changed from the 2010 baseline to the 2012 survey. Since the baseline, the percentage of households having at least one sick member has decreased from 18% to 14% in the treatment group and from 21% to 20% in the control group. There was a slight increase in the percentage of households in the treatment group who lost a family member from 1.9% to 2.3%. During the same time, in the control group there was a decrease in the percentage of households who had lost a family member, from 1.6% to 0.8%. None of the differences however, were found to be statistically significant.

Table 12: Sickness and mortality

Indicator	Participating (treatment)			Non-participating (control)			D-I-D Δ1 – Δ2
	Baseline	2012	Δ1	Baseline	2012	Δ2	
% of HHs with at least one member sick in the previous month	18	14	-4	21	20	-1	-3
% of HHs who lost a family member due to illness in the last year	1.9	2.3	+0.4	1.6	0.8	-0.8	+1.2
Average treatment cost last year for HHs with a sick member (Taka)	4,396	8,999	+4,603	5,137	6,011	+874	+3,729
Death related costs for HHs who suffered a death (Taka) during the previous year	5,536	7,210	+1,674	6,090	11,500	+5,410	-3,736

Δ1 = Treatment 2012 – Treatment 2010 Baseline; Δ2 = Control 2012 – Control 2010 Baseline
Results are not statistically significant

Considering only the households who had a member sick, it is observed that the average cost of medical treatment and related costs in the previous year increased significantly from 4,396 Taka to 8,999 Taka in

the treatment group, while it has increased only modestly from 5,137 Taka to 6,011 Taka in the control. Again, however, this is not found to be statistically significant. When mortality in the previous year is considered, the cost increased from 5,536 Taka to 7,210 Taka in the treatment group and more significantly from 6,090 Taka to 11,500 Taka in the control group. Again, these changes lack any evidence to be attributed to the project.

Health-care Seeking Behavior

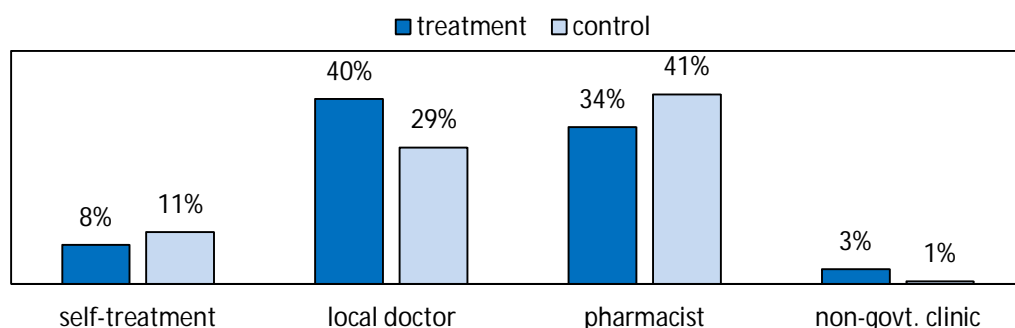
Unfortunately, the households' access to health services was not looked at in the baseline survey. Therefore, a comparison can only be made between the treatment and control groups using 2012 data. A higher proportion of sick members in the treatment group visited some kind of health facilities, but the number is not statistically significant. About 88% of households in the treatment group took treatment from some external source whereas 86% of households in the control group did so. A more interesting issue to explore is what type of medical facilities these patients were accessing. The distribution of health facilities approached is presented in Table 13 below.

Table 13: Distribution of health-care facilities accessed (% of households)

Facility	Participating (treatment)	Non-participating (control)	Facility	Participating (treatment)	Non-participating (control)
No medical treatment	3.3%	2.7%	MBBS doctor	4.0%	5.1%
Social services field worker	0.6%	0.5%	Drug store or pharmacist	33.6%	40.7%
Center for health and family planning	1.3%	1.6%	District general or central hospital	0.1%	0.5%
Upazila hospital	3.1%	4.9%	NGO health services	0.1%	0.0%
Medical college hospital	0.1%	0.5%	Non-government clinic/medical center	3.1%	0.5%
Kabiraz/hakim (traditional healer)	1.0%	1.9%	Paramedic	0.3%	0.0%
Village/local doctor	39.7%	29.3%	Self treatment	8.3%	11.1%
Homeopathic	1.4%	0.5%			

The pattern seemed to be similar with a few distinctions. First, the two most common health facilities that patients visited were pharmacies and local village doctors, in both groups. About 34% of the households in the treatment group and 41% of the households in the control group visited a drugstore or a pharmacist, while 40% of the households in the treatment group and 29% of the households in the control group consulted village doctors for treatment. Considering MBBS and village doctors together, it turns out that approximately 44% of the treatment households go to these two types of doctors, whereas, approximately 34% of the control households go to them. Assuming that these doctors are more knowledgeable than kabiraz, hakim, or pharmacist, it seems that households in the treatment group opt for more professional treatment than those in the control group. Generally, local village and MBBS doctors are perceived to possess greater knowledge and expertise in their fields. For example, on average, the visitors' fee was 3.58 Taka for pharmacists, and 5.88 Taka for village doctors; for MBBS doctors, the visitors' fee was 116 Taka. This suggests that the value of the service provided by village and MBBS doctors are higher than those by pharmacists. Figure 20 below provides a comparison of relative access patterns between treatment and control households.

Figure 20: Relative access patterns for households' medical consultation



Sanitation Practices

To investigate the impact on sanitation related issues, we look at three measures and there is strong evidence that the project has had a positive impact on all of them. First, from the 2010 baseline to the 2012 survey, the percentage of households who own latrines increased from 48% to 75% in the treatment group. Over the same period, this increase was only from 52% to 63% in the control group. This implies a difference-in-difference estimate of 16 percentage points which can be attributed to the project. Table 14 outlines the major results.

Table 14: Sanitation knowledge and practices and behavioral index

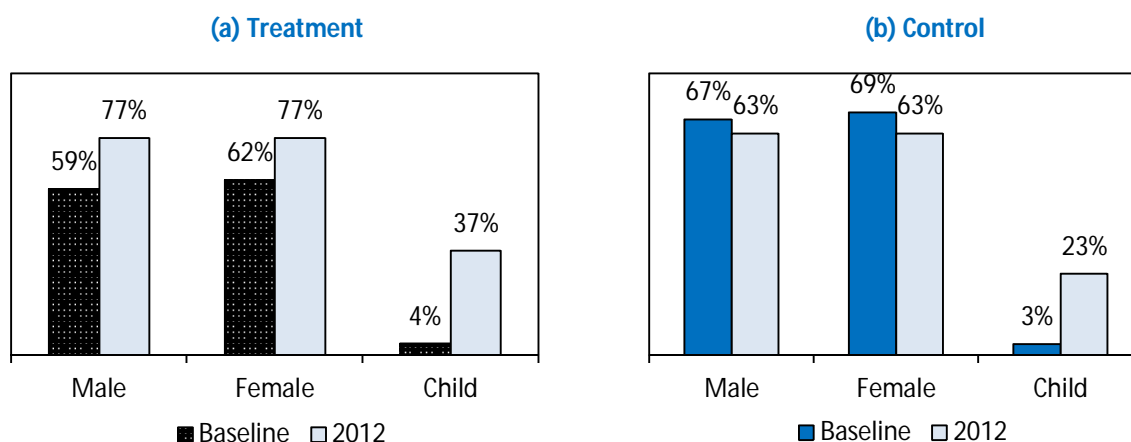
Indicator	Participating (treatment)			Non-participating (control)			D-i-D $\Delta 1 - \Delta 2$
	Baseline	2012	$\Delta 1$	Baseline	2012	$\Delta 2$	
% of HHs who own a latrine	48	75	+27	52	63	+11	+16 ^a
% of participating women (woman respondent for control group) who know about sanitary latrines	72	89	+17	87	81	-6	+23 ^a
% of male members of HHs using sanitary latrines	59	77	+18	67	63	-4	+22 ^a
% of female members of HHs using sanitary latrines	62	77	+15	69	63	-6	+21 ^a
% of child members of HHs using sanitary latrines	4	37	+33	3	23	+20	+13 ^a
Awareness and Behavioral Index value	17.8	27.1	+9.3	19.6	22.7	+3.1	+6.2 ^a

$\Delta 1$ = Treatment 2012 – Treatment 2010 Baseline; $\Delta 2$ = Control 2012 – Control 2010 Baseline

^a Project impact is statistically significant at the 1% level

Second, as far as knowledge of sanitary latrines is concerned, a greater awareness was observed among the treatment group. It is found that, in the baseline survey, about 72% of participating women were aware about it. In the 2012 survey, it rose to 89%, which is a substantial improvement. This is a particular achievement when considering that there was a drop in the percentage of respondent women who were aware of such latrines in the control group (from 87% to 81%). The patterns of change in sanitation practices are depicted in figure 21 below.

Figure 21: Using sanitary latrines (% of households)



It is apparent from Figure 21 that there was a significant increase in the usage of sanitary latrines in case of adults (both male and female) in the treatment group, while there was even a decrease in such usage for adults (both male and female) in the control group (from 67% to 63% for males and from 69% to 63% for females). In both groups however, there was success in increasing the use of sanitary latrines by children. At the baseline only 4% of children in the treatment group utilized sanitary latrines: this increased to 37% in 2012. In the control group the increase was from 3% of children in the baseline to 23% in 2012.

Awareness and Behavioral Index

The Awareness and Behavioral Index (ABI) is based on people’s life skills, including sanitation knowledge and practice, food utilization and nutrition, health, and hygiene.¹¹ The ABI is developed based on a number of knowledge questions as well as practices. The following box outlines the specific questions that are considered in creating the ABI.

Box 4: Indicators used to construct the Awareness and Behavioral Index (ABI)

Food and nutrition:	(i) Knowledge about and consumption of green and leafy vegetables and iodized salt (ii) Knowledge of values of different food types (iii) Practice of washing food before cooking
Health:	(i) Knowledge on the causes of, and protection from night-blindness (nyctalopia) (ii) Knowledge of the effect of and protection from iodine deficiency (iii) Knowledge of the importance of anti-worming tablets (iv) Knowledge of the importance of vitamin A capsules and iron tablets during pregnancy
Hygiene and sanitation:	(i) Knowledge of sources of water contamination as well as the importance of and ways to purify water (ii) Latrine ownership

¹¹ An important issue that was left out is breastfeeding. Only a small fraction of the surveyed households have children of breastfeeding age. Hence, if breastfeeding is included while considering every household, the households without children will naturally have a lower index value just because they will score zero on breastfeeding practice issues. On the other hand, if the households without children are dropped, the sample will be too small. Breastfeeding was therefore not included in constructing the Index.

- (iii) Knowledge about hygienic latrines
- (iv) Use of hygienic latrines

Taking all these factors together and assigning one point and equal weight to each of them, the maximum index value was 40. There was a significant improvement in the ABI in treatment households compared to control households that can be ascribed to the project. The ABI was 17.8 and 19.6 in treatment and control areas respectively in 2010. In 2012, the ABI had improved significantly to 27.1 in the treatment group; it increased in the control group too, but at a lower rate (22.7). This implies a difference-in-differences estimate of 6.2, an increase of 35 percentage points in ABI that can be attributed to the project.

Section 5

ACCESS TO SERVICES

This section discusses the impact of the FSUP project on participants' knowledge about and access to public and private services. Services provided by a list of government departments and private organizations are considered in the survey and a knowledge score is calculated to look at how accessible these services are to participating women and non-participants. It is found that participating women were more aware about both public and private services. It must be noted that indicators presented in this section were not included in the previous annual outcome survey report so for comparison purposes, the same indicators were calculated as in the baseline survey report.

Knowledge about Services

In order to evaluate knowledge about public and private service providers, a total of 20 service providers were considered. 14 of them were public services, 6 were private. Box 5 below provides a list of all the services considered.

Box 5: List of service providers

Public services		Private services
1. Department of Agriculture Extension	9. Government Family Planning	1. Non-governmental Organization
2. Department of Fisheries	10. BRDB	2. Community based Organization
3. Department of Livestock	11. Union Parishad	3. Commercial Bank
4. Government Land Office	12. BADC Seed Department	4. Grameen Bank
5. Department of Youth Development	13. Union Health Services	5. Input Retailers/Dealers
6. Department of Women Affairs	14. Upazila Health Services	6. Private Local Service Providers
7. Department of Cooperatives		
8. Government Immunization Services		

To investigate the women's knowledge and access, their knowledge and access is scored based on the number of services they knew about and had access to at the time of the surveys. For example, an access score of 3 in public services would imply that their household had accessed three public services over the last year. First public and private service providers are considered in general and then those that provide business support services. Table 15 shows the major results and compares the numbers between treatment and control groups and between the 2010 baseline and the 2012 surveys.

Table 15: Knowledge and accessibility

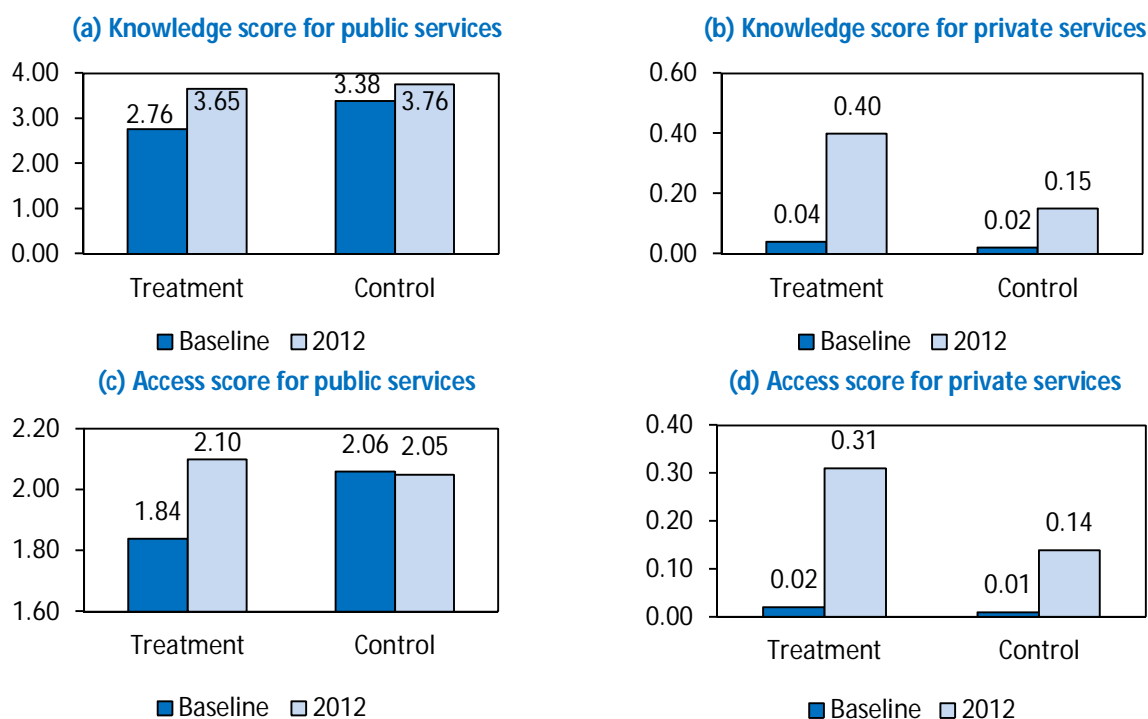
Indicator	Participating (treatment)			Non-participating (control)			D-i-D $\Delta 1 - \Delta 2$
	Baseline	2012	$\Delta 1$	Baseline	2012	$\Delta 2$	
Knowledge score for public services	2.76	3.65	+0.89	3.38	3.76	+0.38	+0.51 ^a
Knowledge score for private services	0.04	0.40	+0.36	0.02	0.15	+0.13	+0.23 ^a
Access score for public services	1.84	2.10	+0.26	2.06	2.05	-0.01	+0.27
Access score for private services	0.02	0.31	+0.29	0.01	0.14	+0.13	+0.16
Knowledge score for public business services	1.17	1.77	+0.6	1.56	1.77	+0.21	+0.39 ^a
Knowledge score for private business services	0.79	2.1	+1.31	0.88	1.04	+0.16	+1.15 ^a
Access score for public business services	0.82	1.05	+0.23	1.12	0.97	-0.15	+0.38
Access score for private business services	0.57	1.70	+1.13	0.57	0.66	+0.09	+1.04

$\Delta 1$ = Treatment 2012 – Treatment 2010 Baseline; $\Delta 2$ = Control 2012 – Control 2010 Baseline

^a Project impact is statistically significant at the 1% level

Results show that there was a significant increase in knowledge about both public and private services. The comparative increase in knowledge and access to public and private services can be seen clearly in the figures below.

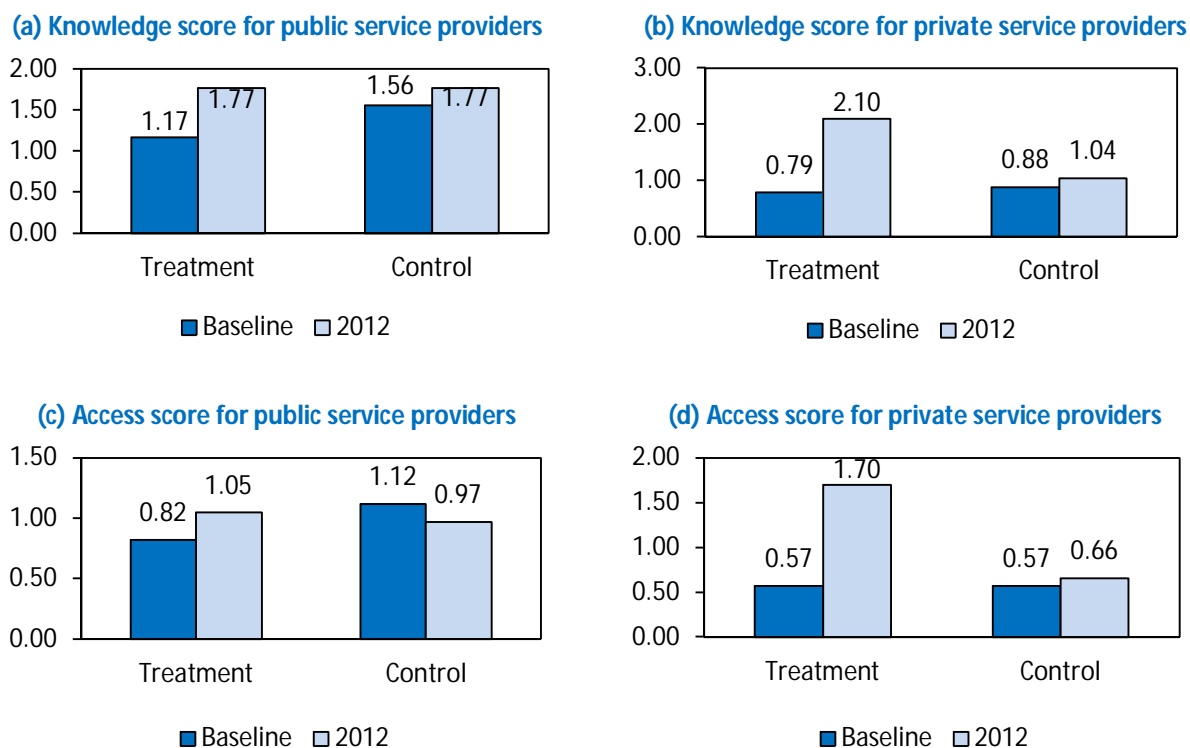
Figure 22: Knowledge and access scores for services



This can also be seen clearly when considering public and private service providers. Figure 23 shows the results for public and private business service providers (such as livestock extension services, market traders/suppliers, etc.). The knowledge score in particular has gone up by a greater extent for the treatment group, 51% as opposed to 13% for the control group. Similarly for private service providers,

there has been an increase in the treatment group of 166% (from 0.79 to 2.1) and in the control group of 18% (from 0.88 to 1.04 only).

Figure 23: Knowledge and access scores for service providers



Access score for public business service providers increased by about 28% (from 0.82 to 1.05) for the treatment group and decreased by about 13% (from 1.12 to 0.97) for the control group (see graph (c) above). When private business service providers are considered, access scores increased by about 198% (from 0.57 to 1.70) for the treatment group and by only about 16% (from 0.57 to 0.66) for the control group (see graph (d) above). The following qualitative account builds on the above analysis and captures the impact of increased access.

The members of SHKMG *Durjoy* in Rangabalia bought a bigha (or one-third of an acre) of land with their savings. Under the leadership of their group leader Kalpana Rani, they visited the upazila Krishi (agricultural) Office where they received seeds and fertilizer free of cost. They were also given general advice and training on relevant matters at the Krishi office. Now, group members go to union council offices to obtain tube wells, sanitary latrines, and old age benefits, etc. Some are also members of the union disaster management committee and two of the members have even been elected as ward members at the union council, Asia from the village Helencha, and Rezia from Tithanmarich. As members of committees of the union council, they are aware of different government projects implemented in their locality. They also actively participate in the upazila forums (other decision making bodies).

Section 6

EMPOWERMENT, EDUCATION AND PARTICIPATION

This section aims to discuss the impact of the FSUP project on women’s empowerment, education, and participation in Self Help Knowledge Management Groups (SHKMGs) and Community Based Organizations (CBOs). Conventional wisdom suggests that in most cases the true extent of the impact on women’s empowerment is hard to quantify in mere numbers. With this in mind, the attempt is made to bring together both statistical and qualitative results to come up with an adequate assessment. The first part of this section evaluates a set of women’s empowerment indicators. The second explores the project’s impact on education and results on participation.

Empowerment

As presented in earlier sections the project has resulted in higher incomes, higher savings, and a larger contribution towards household asset accumulation and savings by women. This clearly indicates greater economic empowerment for women. In this section, changes in further socio-economic indicators for empowerment will be presented. Below, women’s mobility will be determined based on the percentage of women who are comfortable in going on their own to a number of locations.

Table 16 presents the main results: the percentage of women who feel comfortable visiting: (i) the upazila market; (ii) the upazila health center; (iii) other health centers; and (iv) the upazila livestock office. The percentage is compared between treatment and control groups, as well as the 2010 baseline and the 2012 survey. The difference-in-difference estimates are also provided.

Table 16: Empowerment indicators: % of women who are comfortable going to service providers alone

	Participating (treatment)			Non-participating (control)			D-i-D
	Baseline	2012	$\Delta 1$	Baseline	2012	$\Delta 2$	$\Delta 1 - \Delta 2$
Upazila market	5	16	+11	7	14	+7	+4 ^b
Upazila health center	4	11	+7	5	8	+3	+4 ^b
Other health centers	3	8	+5	3	2	-1	+6 ^a
Upazila livestock office	2	4	+2	1	1	0	+2 ^b

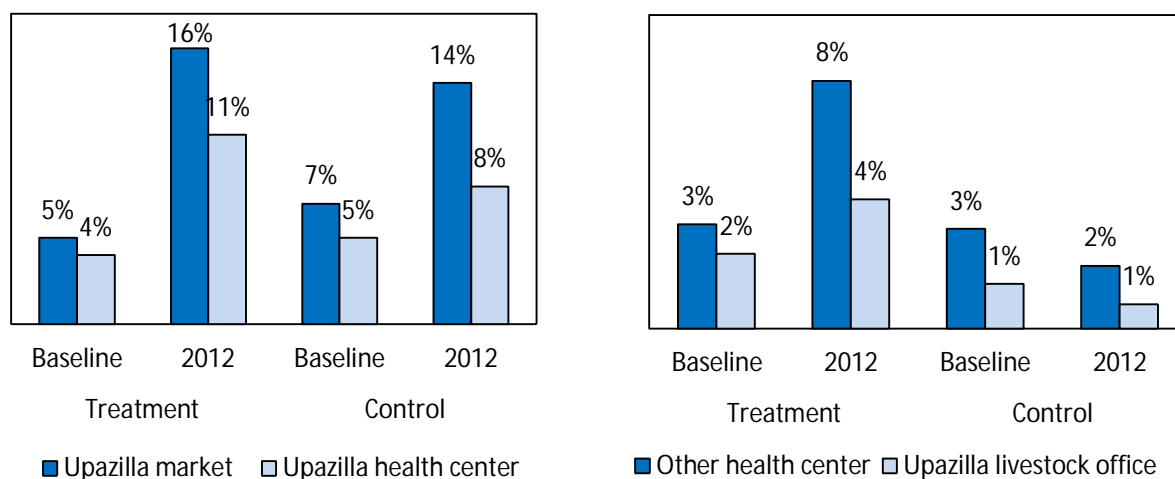
$\Delta 1$ = Treatment 2012 – Treatment 2010 Baseline; $\Delta 2$ = Control 2012 – Control 2010 Baseline

^a Project impact is statistically significant at the 1% level

^b Project impact is statistically significant at the 5% level

As figure 24 shows, in all cases there was a positive change for participating women (treatment group). Women in the control group also experienced an overall positive trend, though to a smaller extent. The difference-in-difference estimate for women’s mobility suggests that an additional 4% of female participants are comfortable going to upazila market alone due to the program. This figure is 4%, 6% and 2% for upazila health center, other health centers and upazila livestock office respectively.

Figure 24: Women's mobility (% of women)



Qualitative findings corroborate the positive contributions on empowerment that were observed across the project areas. The following provides a list of some of the major avenues through which positive changes were observed.

- Strengthened economic conditions of women
- Increased awareness about their share in family properties and land rights
- Improved access to and communication with service providers, e.g. upazila livestock office
- Improved communication with union parishad, for example, women can, discuss matters directly with union parishad members and the chairman
- Decreased instances of child marriage and discrimination against women.
- Declined rate of borrowing from NGOs
- Increased male consciousness about women's rights and place in society

Education

This section discusses the project's effect on children's education. For education, the proportion of children between 6 and 14 years old attending school and the reasons why some students were not attending school are considered. It turned out that the proportion of children between 6 and 14 years old going to school differed between the two groups. In particular, it was observed that about 80% of children in the treatment group were going to school while 86% of children in the control group attended. The difference was also statistically significant at 1% level¹².

¹² Comparison with baseline is not provided because baseline data is not available.

Table 17: Reasons reported for children not going to school (% of households)

Reason	Participating (treatment)	Non-participating (control)
School is too far away	1%	1%
Denied admission by school	8%	1%
Household chores	3%	1%
No interest in education	37%	34%
Lack of security in society	0%	0%
Marriage	2%	4%
Financial problems	8%	17%
Household preferences	1%	3%
Failed	1%	0%
Too young to go	29%	24%
Engaged in income generating activity	9%	17%

A number of reasons were given by households for why children did not go to school and are presented in table 17. A few interesting observations can be noted. First, of all children not going to school, most of them were not doing so due to a lack of interest (37% in the treatment and 34% in the control group). On the other hand, table 17 depicts two potential benefits of FSUP. One stems from the observation that among participating households there was a lower percentage of students not going to school due to financial problems (8% for treatment as opposed to 17% for control households). The other one was a lower percentage of children not going to school due to engagement in income generation (9% for treatment as opposed to 17% for control households). FSUP may have played a role here by increasing household income and reducing the demand for children to engage in income generating activities.

There was no decrease in the amount of time mothers spend with children due to the project. When asked about time spent with children, no significant difference came up between treatment and control groups. Among households with children the average number of hours spent by a mother with her children was 2.89 per day in the treatment and 2.82 per day in the control group¹³. This difference is not statistically significant.

A similar picture emerged when the amount of time spent on household chores was considered. The mean time spent in such activities was 3.6 hours per day in the treatment group and 3.68 hours per day in the control group¹⁴. This difference is also not statistically significant.

Participation

Participation in Community Initiatives

In this part, the project's impact on participation in collective action and advocacy initiatives is examined. This is done by looking at the percentage of participating women who were involved in any cooperative organizations or community based organizations (CBO). It was found that there is a significant difference in women's participation in cooperative organizations between the treatment and control groups. Since this information has not been collected during the baseline survey, the trends in participation over time and difference-in-difference estimates cannot be obtained. We therefore simply

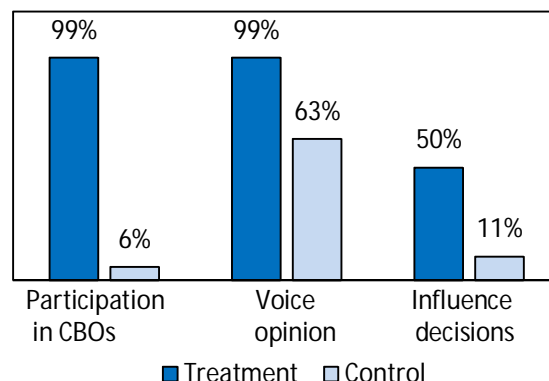
¹³ Comparison with baseline is not provided because baseline data is not available.

¹⁴ Comparison with baseline is not provided because baseline data is not available.

compare participation between the treatment and control group and check whether the differences are significant.

As expected, the percentage of women in the treatment group participating in CBOs was 99%. This is primarily due to the existence of the SHKMGs. On the other hand, only about 6% of the control group participated in any cooperatives or CBOs. Figure 26 on the right further distinguishes degrees of participation, being able to voice their opinions and being able to influence decision making. It is seen that for all three degrees of participation treatment women have more engagement than the control group.

Figure 26: Women’s degree of participation (% of women)



Participation in SHKMG

Table 18 below presents summary statistics regarding women’s participation in such groups. 100% of the participating women were members of self-help groups suggesting that the SHKMG component of the project had excellent coverage in terms of including a significant portion of the women. In addition 100% of the participating women were saving through such groups.

Table 18: Participation in SHKMGs by participating women (treatment group)

Indicator	Value
% of women who are members of SHKMGs.	100
Average number of meetings held in the last one year	24
Average number of meetings attended by the participating women	23
% of women having savings through SHKMG	100
% of women reporting collective initiatives by SHKMGs	62
Average savings per woman through SHKMG (Taka)	1,225

Over the last year, these groups met 24 times. Given that the project requires such meetings to occur twice a month, this was another remarkable achievement. The participation of the women in these meetings was very high: on average, a participating woman attended 23 meetings. In addition, 62% of the women reported that the self-help group they belonged to took some form of collective initiative. Among these initiatives, 90% were in collective IGAs while 9% were training for such activities. All women saved through their SHKMG. The women’s average savings were 1,225 Taka at the time of the 2012 survey. The savings in SHKMGs were an overall average of 28% of the average woman’s savings of 4,404 Taka. Qualitative investigation reveals other areas of impact. By belonging to these groups, women have become more comfortable with collective decision making. Being part of a group has also given them confidence and the mental strength to face life’s challenges, because they can learn through the sharing of experiences.

Rashida Parvin (Age: 27 years)
Wife of Akbar Hossain

Village: Charbanbariya
Union: Kaliyaboripur, Sirajganj Sadar

Rashida, an only child, was married off when she was a student of class 8 because of her family's poor economic conditions. Fortunately, even after marriage, she was able to continue her schooling and complete the Secondary School Certificate (SSC) examination. Her husband, Akbar, worked as a construction laborer, but was imprisoned in a false case. During his imprisonment, Rashida bought a sewing machine (by borrowing 4,000 Taka from relatives) and tried her best to live by her income from tailoring. When Akbar was freed from prison, they moved into their own household (separate from her in-laws). However, their financial condition did not improve because of Akbar's addiction to gambling. In 2011, the National Development Program (NDP), a partner of WFP, enlisted Rashida as an FSUP participant. A group named *Banbaria Prottasha Mohila Dol* was formed in her area with 26 ultra-poor women members. The group members attended meetings twice a month, and each member deposited 10 Taka per month in savings. At the subsequent union parishad elections, Rashida competed in the reserved women quota despite initial reluctance from her family and relatives. Rashida was encouraged to compete in the election by the economic development officer (assigned by NDP) and other group members as well as her cousin, who even committed to share half of her election campaign costs. Every member of 10 self-help knowledge management groups of 3 wards voluntarily helped her with the campaign and she won the election. Rashida received the monthly cash allowance and 14,000 Taka cash grant from the FSUP project. She leased land for cultivation and later leased a pond for 30,000 Taka for her husband to undertake fish cultivation. Fortunately Akbar has now stopped gambling. He still works as a construction laborer as well and together, Rashida and Akbar earn 22,000 Taka per month. Rashida now enjoys more influence over family decisions as her husband and other family members pay more attention to her opinion.

Section 7

OUT OF ULTRA-POVERTY AND TOWARDS FOOD SECURITY

This section presents an evaluation of FSUP's impact in terms of households moving out of ultra-poverty and brings together the results from previous sections. There is evidence of positive change in the livelihood of the FSUP women and their households in comparison to their status in the beginning of the project (i.e., at the baseline survey, 2010). It remains to be examined to what extent these women and their households have experienced enough growth to exceed recognized threshold levels for ultra-poverty. While graduation out of ultra-poverty implies a sustained improvement of the households' economic condition and can only be determined after some time following the end of the project, an effort was undertaken to compare the project's achievement against some set graduation criteria.

The study considered four different graduation criteria: (i) income; (ii) expenditure; (iii) asset; and (iv) food security. A threshold level for each criterion was determined and used as the benchmark to represent ultra-poverty.

Table 19: Change in status of households in terms of graduation criteria (% of households)

Indicator	Participating (treatment)			Non-participating (control)			D-i-D
	Baseline	2012	$\Delta 1$	Baseline	2012	$\Delta 2$	$\Delta 1 - \Delta 2$
Proportion of HHHs with per capita income of more than US\$1.25 a day	2.7%	63.2%	60.5%	1.8%	27.6%	25.8%	34.7% ^a
Proportion of HHHs that are above the lower poverty line (1,236 Taka in 2010, 1,490 Taka in 2012)	7.4%	43.2%	35.8%	9.3%	22.3%	13.0%	22.8% ^a
Proportion of HHHs that surpassed the graduation threshold for asset value (30,970 Taka in 2010 and 37,337 Taka in 2012)	28.3%	61.9%	33.6%	23.9%	38.9%	15.0%	18.6% ^a
Proportion of HHHs with an "acceptable" level of food consumption (Food Consumption Score >42)	17%	78%	61%	19%	53%	34%	27% ^a

$\Delta 1$ = Treatment 2012 – Treatment 2010 Baseline; $\Delta 2$ = Control 2012 – Control 2010 Baseline

^a Project impact is statistically significant at the 1% level

Above the Income Poverty Line of US\$ 1.25/person/day

The threshold for income per capita is \$1.25 a day, as per the Millennium Development Goals poverty line. In the 2010 baseline the percentage of households whose per capita income was higher than \$1.25 a day was 2.7% in treatment households and 1.8% in control households.¹⁵ In 2012, this number increased to 63.2% in the treatment households and 27.6% in control households. According to the difference-in-difference estimator, the net increase in the number of people living on an income of more than \$1.25 a day is 34.7%; this increase is statistically significant and hence can be attributed to the project.

Out of Ultra-Poverty According to Expenditure Threshold

A commonly used indicator for poverty¹⁶ is the Cost of Basic Needs Approach where two poverty lines, one upper and one lower, are computed based on required food and non-food expenditures. The upper poverty line is used to define the poor whereas the lower poverty line is used to identify the ultra-poor. Thresholds can be estimated based on the methodology used in the Poverty Assessment Report, Bangladesh (2005) and HIES (2010) data. Accordingly the lower poverty line for 2010 is 1,236 Taka¹⁷ per month. For the year 2012, the inflation-adjusted lower poverty line turns out to be 1,490 Taka¹⁸ per month.

In 2010, about 7% of treatment households and 9% of control households were living above the lower poverty line. In 2012, about 43% of treatment households and 22% of control households were living above the lower poverty line. The difference-in-difference estimator indicates a 23 percentage point increase in the number of households living above the lower poverty line, which is statistically significant and can be attributed to the project.

Out of Poverty According to Asset Threshold

The asset indicator for graduation from poverty is again developed based on a particular threshold level. This threshold level is computed as the average asset value of households whose income per capita was higher than \$1.25 in 2010. Taking the average in both treatment and control groups, the asset threshold in 2010 was 30,970 Taka. In order to see the progress, we adjusted the 2012 asset value according to the inflation rate published by the Bangladesh Bureau of Statistics, coming to 37,337 Taka.

In 2010, about 28% treatment households and 24% control households were above the asset threshold level. In 2012, about 62% of treatment households and 39% control households had asset values above the threshold level. The difference-in-difference estimate suggests 18.6% increase in the proportion of households who have an asset value above the poverty threshold which is statistically significant and hence can be attributed to the project.

¹⁵ The dollar income is PPP adjusted according to World Bank Data. As PPP for 2012 is not published yet for the year 2012, PPP is projected. Hence the 2010 PPP adjusted conversion factor is 28.32 and for 2012, it is 31.23.

¹⁶ Both Bangladesh Bureau of Statistics (BBS) and the World Bank use this to measure poverty.

¹⁷ See appendix note for explanation on the measurement of the lower poverty line.

¹⁸ The inflation rate in rural areas according to Bangladesh Bureau of Statistics is 9.4% and 10.2% in 2010-2011 and 2011-2012 respectively.

Out of Poverty According to Food Consumption Threshold

The food security indicator considered here is the percentage of household having an “acceptable” level of food consumption where acceptability is computed based on the FCS. It is found that in 2010 about 17% of households in the treatment group and 19% of households in the control group had “acceptable” levels of food consumption. In 2012, a significant improvement in the treatment group is observed compared with the control group with the percentage of households having “acceptable” levels of food consumption being 78% in the treatment group and 53% in the control group. The difference-in-difference estimator indicates a 27 percentage point increase in the households above the FCS threshold which is statistically significant and can be attributed to the project.

Measuring Movements Out of Ultra-Poverty

In order to measure upward movement achieved through the project, the study examined those households who were identified as below poverty line indicators at the baseline, and then compared their status against this indicator in 2012. It has been previously established that poverty movements are not static, including both upward and downward trends¹⁹. Taking this into account, table 20 shows both the upwards and downward movements made by households identified as below a poverty indicator at the 2010 baseline.

Table 20: Percentage of households graduating out of ultra-poverty

Indicators	Treatment	Control	Differences
i. % of HHs with income below US\$ 1.25 per person a day in 2010 lifting themselves out of ultra-poverty in 2012	62.7	27	35.7
ii. % of HHs with income above US\$ 1.25 per person a day (T-2.7%; C-1.8%) in 2010 falling back below the income poverty line in 2012	22.6	36.4	-
iii. % of HHs with below lower poverty line expenditure in 2010 lifting themselves out of ultra-poverty in 2012	41.6	21	20.6
iv. % of households with above lower poverty line expenditure (T-7.4%; C-9.3%) in 2010 falling back below the lower poverty line in 2012	36.4	64.9	-
v. % of HHs with below asset threshold in 2010 lifting themselves above the asset threshold in 2012	51.2	26.3	24.9
vi. % of HHs with above asset threshold (T-28.9%; C-22.9%) in 2010 falling back below the asset threshold in 2012	11.2	21.1	-
vii. % of HHs with poor/borderline food consumption in 2010 improving to acceptable food consumption level in 2012	76.7	50.9	25.8
viii. % of HHs with acceptable food consumption (T-15.0%; C-18.4%) in 2010 falling back to poor/borderline food consumption level in 2012	20	34.2	-

¹⁹ See for example, the discussion on poverty dynamics in Kidd, S. and Wylde, E. 2011 *Targeting the Poorest: An Assessment of the Proxy Means Methodology*.

Overall Trend Out of Ultra-Poverty

There is strong evidence to conclude that the FSUP project had played an important role to lift a significant proportion of project assisted households out of ultra-poverty. The survey estimated that nearly two-thirds (63%) of the treatment households lifted themselves above the income poverty line (per person US\$ 1.25/day) which is 36 percentage points higher than that of the control households (27%). Based on the food consumption measure, more than three quarters (77%) of the treatment households graduated out of poor and borderline food consumption levels, which is 26 percentage points higher than the control households (51%). Similarly, the survey reported net 21% graduation out of ultra-poverty according to the lower poverty line and 25% net graduation according to the asset threshold which can be attributed to the project. Besides these impressive gains Table 20 below shows a small section of the treatment households who were identified as above the income ultra-poverty threshold in 2010 actually fell back below this threshold. A similar trend of slipping down into the ultra-poverty category is also evident amongst control households with a comparatively higher rate. This recognizes certain resisting factors in the lives of ultra-poor households that work against being lifted out of extreme/ultra-poverty and deserves systematic monitoring to be adequately tackled in any similar livelihood projects. While overall there is significant improvement in the economic and food security situation of the participating women and their households, there remains a mix of upward and downward movement of households around the various thresholds. As raised, this is consistent with the findings of other studies²⁰.

²⁰ Kidd, s. and Wylde, E. 2011 *Targeting the Poorest: An Assessment of the Proxy Means Methodology*

Section 8

CONCLUSIONS

WFP started the Food Security for the Ultra Poor (FSUP) project in January 2009. The ultimate goals of the FSUP project were to increase women's and household income and productive assets through diversified economic activities; improve women's lifeskills and household food security; enhance the disaster resilience of households; increase public and private business linkages and access to information; and share lessons of the project to contribute to national strategies in food security and safety nets. All in all, the FSUP project has been remarkably successful in these objectives.

There is no question that significant growth has been achieved in both women's and overall household income. Participant households now have a significantly more diverse range of income sources and the growth in productive assets has also been high. The food security situation of the targeted ultra-poor households has improved along with their economic condition.

The monthly cash transfer received and the significant cash grant injection (14,000 taka) for investment by women led to a rapid level of income and asset growth, supported by project staff encouraging multiple investment and re-investment rounds.

A common sequence of investments occurred, reflected in the results presented through this survey. This began with an initial investment, or several rounds of investments, into livestock and ended with the gain and cultivation of land. Animals are an attractive avenue through which women enter the world of rural business and productive assets. There is a minimum level of knowledge required (though a project focus on vaccination support was key), and a minimum amount of time as it does not lead to other income earning activities being stopped, and comes with an attractive and immediate increase in social image. Despite these benefits however, it remains a risky business, with theft and animal death being real dangers, and yielding a fairly ad hoc income, rather than a steady stream.

In part through a project focus on selling livestock at the most profitable time, livestock was able to gain many participants a fast growth in asset value, and therefore in future investment opportunities.

Towards the end of the project, this manifested in a trend away from cattle, and towards the more expensive, but also more stable opportunity presented by land. There is strong competition for land in rural areas. For many women the option of cultivating land would never have been open without the project. However through both the asset growth gained in earlier investment rounds, and the avenues opened by the rural "bondhok" system, this option became a reality for many. Cultivation is now a shared wife-husband activity.

The project also made clear that whilst receiving cash certainly contributed to a qualitatively impressive rise in empowerment amongst participating women, asset investment is a family affair. This was particularly the case for married women, as the "juggling" of funds between wife and husband saw investment changes occur several times throughout the project. Many women bought assets specifically for their husbands (such as a rickshaw), others invested money into a joint business, or a husband's

venture. This is not a loss of empowerment or evidence that decision making was the husband's (or whomever the money was given to) so much as it makes clear that household income is now based on joint decision. The best avenue for growth may not be in a venture that the participating woman undertook herself. Some of the most successful cases involved a partnership approach.

As was also highlighted in WFP's Lessons Learned Report 2012, women's groups (SHKMGs) proved to be integral to the strong achievements in awareness, business linkages, disaster resilience, and a rise in women's confidence and overall empowerment. These support networks built on traditional avenues of knowledge and awareness growth, with the experiences and support of their peers providing a strong backing for women to try new ventures, and access services. It also saw women become more active within their communities, increasing their voice and influence.

Improved food intake, including dietary diversity, and awareness in life-skills resulting in improved knowledge and practices (like sanitary latrines) were also strong results of the project. Whilst the lack of anthropometric data limits the nutrition specific findings, it is clear that there has been a substantial increase and quality improvement in food consumption amongst participant households.

The project has successfully achieved significant positive changes in the lives of participating women and their households. Over 60% of participant households have lifted themselves out of income poverty (measured against the MDG indicator of US\$ 1.25 per person per day). That said, whilst impressive, it is important that these figures are not overemphasized at this stage. There are strong positive signs pointing towards graduation for a majority of participant households, including systems of structural sustainability, such as the apex committees, graduation cannot be confirmed at this point. As is acknowledged in the relevant literature, poverty is not stagnant²¹. There is constant upward and downward mobility which can extend both over and under the lower and upper poverty line. The real test of project results may not occur for a number of years. Despite the improved signs of resilience, there is no guarantee that a significant shock will not send these households back into extreme poverty. As such it would be desirable to do a follow-up study to give a more comprehensive and accurate view of these achievements, and the reality of them being sustained or not in a country without a robust social protection system.

There are many lessons that can be learned from the experience of this project, many of which have already been extrapolated in the *Food Security for the Ultra Poor Lessons Learned Report 2012*, published by WFP last year. The results of this outcome survey confirm that this is a successful promotional safety net model implemented exclusively through women participants. Of particular interest, the use of cash grants and the formation of strong women's groups appear to have been foundational to project success. Many government safety net programs may benefit from adapting aspects of this approach.

Bangladesh has a growing social protection system that is well poised to adapt itself to models that have shown strong effects, particularly those that have the potential of raising participants out of ultra-poverty to the extent that they are unlikely to require repeated assistance. This proactive approach shown by the FSUP model could be a new and successful avenue through which to tackle extreme poverty.

²¹ Kidd, S. & Wylde, E. 2011 *Targeting the Poorest: An Assessment of the Proxy Means Methodology*, Canberra: AusAID

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APPENDIX A

Note on Poverty Measurement

The poverty lines, jointly developed by the Bangladesh Bureau of Statistics (BBS) and the World Bank, were used to obtain a poverty estimates for Bangladesh. Using data from the Household Income and Expenditure Survey (HIES, 2005), a Cost of Basic Needs (CBN) approach was used to define the poverty line²². In simple terms, CBN poverty lines show the level of per-capita expenditure at which a household can be expected to meet its basic needs (covering both food and non-food items). This was done in two steps.

First, the total cost of a fixed food bundle was used to calculate a **food poverty line**. For Bangladesh, the fixed food bundle consists of eleven important food items, which will satisfy a minimal nutritional requirement of 2,122kcal/day/person. Second, an **allowance** for non-food consumption was added to the food poverty line and the amount of this allowance added depends on the particular poverty line. For the **lower poverty line**, non-food allowance was the average non-food expenditure of households with **total consumption** equaling the food poverty line. And, for the **upper poverty line**, non-food allowance was the average non-food expenditure of households with **food consumption** equaling the food poverty line.

Lastly, to account for variations in price and consumption patterns, poverty estimates have been adjusted for the particular geographical areas, where, the project was being implemented²³. Also, whenever needed, our estimates have been appropriately adjusted for inflation.

²²In the past, poverty line was also calculated, similarly, using HIES (1991-92) data.

²³ In practice, Bangladesh is divided into sixteen different geographic areas.

APPENDIX B

Table B1: Disaster preparedness – percentage of households who undertook preparations

Type of preparation	Flood		River erosion		Wind damage		Fire accident	
	Treatment	Control	Treatment	Control	Treatment	Control	Treatment	Control
Fixing the house	23%	21%	10%	5%	88%	89%	6%	0%
Raising the platform of the house	32%	10%	26%	0%	0%	11%	0%	0%
Preserving stove	16%	16%	3%	0%	2%	0%	0%	33%
Keeping information about nearest shelter	2%	3%	3%	5%	2%	0%	13%	0%
Making boats/rafts ready	0%	2%	0%	0%	0%	0%	0%	0%
Preserving dry food/saline/matchbox/candle/medicine	17%	7%	10%	0%	0%	0%	0%	0%
Tree plantation	0%	0%	0%	0%	5%	0%	0%	0%
Preserving drinking water	1%	0%	3%	0%	2%	0%	0%	0%
Preserving fodder for cattle	0%	0%	0%	0%	0%	0%	0%	0%
Saving/preserving cash	1%	0%	15%	0%	2%	0%	13%	0%
Preserving water taps	0%	0%	0%	0%	0%	0%	0%	0%
Raising level of latrines	1%	0%	0%	0%	0%	0%	0%	0%

Preserving necessary documents	0%	0%	0%	0%	0%	0%	0%	0%
Preserving seeds	0%	0%	0%	0%	0%	0%	0%	0%
Keeping contacts with service providers	0%	0%	3%	0%	0%	0%	0%	0%
Preserving extra pipes for raising the level of water taps	0%	0%	0%	0%	0%	0%	0%	0%
Preserving sand	0%	0%	0%	0%	0%	0%	63%	67%
Being informed about shelter/embankment/highlands	7%	40%	28%	91%	2%	0%	6%	0%