

*An impact assessment of the SAMMOW project on women agriculture
day laborers, their household and communities*

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Executive Summary

Eradication of poverty especially the extreme poverty and thereby amelioration of household level food security is the key development agenda in this development era. Bangladesh over the past couple of decades has achieved significantly progress in moderate as well as extreme poverty eradication. Despite some inspirational statistics, there is still some darkness behind the success. The overall poverty reduction rate may be positively sensitized us but it also badly sensitized that still 17 percent of the people live below lower poverty line and 32 percent live below the upper poverty line. The headcount rate is high in the northern region of the country which is mostly dependent on agricultural activity (Khandker and Samad, 2012). The involvement of women as agricultural day labor is quite common in Nilphamari and Rangpur. Women are working hard and in some case working as like males. The male and female labor jointly consent that they are equally efficient in collecting potato for field, in planting and reaping the paddy, and in other activities as well. However, the difference in physical strength is making the difference. The male worker argues, female labor consents, that a female labor is incapable to bear the heavy loaded paddy from the field. On the other hand, female labor argues, male labor and landlord agree, that for some activities where physical strength is not required male and female labor perform equally, but still there is a wage gap and the wage they receive is substantially low compared to the male.

CARE Bangladesh initiates the Pathways SAMMOW (Stimulating Agricultural Management and Marketing Opportunities for Women) with the financial support from the Bill & Melinda Gates Foundation focusing on improving vulnerable female farmers and agriculture day laborers' productivity by empowering them to engage in equitable agriculture systems and by giving them the tools, knowledge and access they need to succeed in the agricultural sector.

The beneficiary women are of around 30 years old on average. The household size of the beneficiary household, on average, is a little over 4. Although majority of the beneficiary households have homestead, they have hardly possessed the agriculture land, own land or share cropping land. From the table we find that around 12 percent of the beneficiary households have agriculture land and the land size, agriculture land or homestead, is very low. Some beneficiary households even live in khas land (abandoned government land). These characteristics reveal that the target beneficiary households are very poor in terms of land asset holding. The women

agriculture day labors are very poor compared to other two groups, women farmer and women agriculture input entrepreneur, which is expected.

The baseline information tells that the average wage for female agriculture day labor was of 85 taka with a standard error of 1.32 and a standard deviation of 13.98 while the average wage for male agriculture day labor was of 150 taka with a standard error of 1.32 and a standard deviation of 13.88. The wage differential is around 68 and the t-statistics shows that the differential is highly statistically significant. Therefore, it is confirmed that the female agriculture day labor had a wage rate lower of 45 percent than that of a male agriculture day labor. Conversely, the male agriculture wage labor got wage rate of 1.76 times higher than that of female agriculture day labor.

The wage rate for male agriculture day labor has increased by around 23 percent, while that for female agriculture day labor has gone up by around 46 percent in the program village. In absolute term, on average, the wage rate for female agriculture day labor has increased by \$0.5 (39 BDT)¹. The wage gap in the pre-intervention was 65 taka (\$0.83) which reduced to 60 taka (\$0.77) in post intervention, a 7.7 percent reduction of wage differentials. The gap in terms of female wage has gone down from 76.5% to 48.4%, approximately 37 percentage points.

The women agriculture day labor in program villages had higher wage in 2011 compared to women agriculture day labor in control villages. The wage differential between female agriculture day labor in program and control villages in 2011 was around 43 taka (\$0.55), around 102 percent of wage for women agriculture day labor in control village or around 51 percent of wage for women agriculture day labor in program village. In 2014, the wage differential increased to 55 taka (\$0.71). This incremental wage includes the time and program effect. The elimination of time effect by the double difference method shows that the net effect of the program is around 12 taka (\$0.12) per day.

The program is successful in various indicators such as empowering the women, improving the household food security, increasing household asset base (physical and financial), and increasing better opportunity to health and education. The program has yielded almost 100 percent spillover effect to its nearest village.

Although the program has successfully improved the wage differentials in agriculture sector, the simple benefit-cost ratio suggests that the program will be of worth if the net benefit of the program

¹ The exchange rate is set at \$1=78 BDT (Local currency of Bangladesh)

sustained at least 10 years. However, the inclusion of spillover effect in calculating the total benefit yields a ratio of over 1 if the program outcome sustained five years.

An impact assessment of the SAMMOW project on women agriculture day laborers, their household and communities

1. Introduction

1.1. Background

Bangladesh is committed to achieve the millennium development goals (MDGs) of poverty reduction, human development and women's advancement. Notwithstanding many government and non-government programmes and interventions directed to poverty eradication in the country, about one third of its population has still been living under the poverty line. Poverty reduction has therefore remained a focal point of economic policy objectives. According to successive rounds of Household Income and Expenditure Surveys (HIES) carried out by the official statistical agency, Bangladesh Bureau of Statistics (BBS), the country has witnessed some significant progress over the past 20 years in terms of reducing poverty incidence, on average, slightly over 1 percentage point per annum. This has resulted in the reduction of the proportion of people living below the poverty line from about 57 per cent in 1991-92 to about 49 per cent in 2000; and subsequently to 40 per cent in 2005; and 32 percent in 2010. The incidence of poverty in the Northwest region of Bangladesh is high compared to other regions in terms of extreme poverty and vulnerability.

Though there has been steady improvement in the social and political empowerment scenario of women in Bangladesh, wage employment for women in Bangladesh is still low. According to Labour Force Survey 2010, labour force participation rate for females is around 36 percent. The share of women in wage employment in agricultural sector has been reported as 40.8 percent. Some factors such as local employment opportunities, landlessness, food-insecurity, poverty, and vulnerability play significant role in involving the female in the labour force and specially in agriculture in rural Bangladesh.

CARE Bangladesh has been implementing Pathways SAMMOW (Stimulating Agricultural Management and Marketing Opportunities for Women) for the last two years (January 2012 - May 2014) with the financial support from the Bill & Melinda Gates Foundation focusing on improving

vulnerable female farmers and agriculture day laborers' productivity by empowering them to engage in equitable agriculture systems and by giving them the tools, knowledge and access they need to succeed in the agricultural sector.

The objective of SAMMOW project is to *enhance the recognition of women for productive engagement in agriculture as producers, entrepreneurs and wage earners*. Through various activities and mobilization strategies, the SAMMOW project aims to achieve the following five outputs:

1. Strong solidarity groups established to negotiate female farmers' issues
2. Mass awareness raised on women's productive role in the agricultural sector at the local level, Union parishad and other local governance actors
3. Improved productivity and household's nutritional condition
4. Engendered policies and practices to recognize women's productive roles in agriculture
5. Documented learning of promising practices and shared to influence future development practices

The project is being implemented in two of Bangladesh's poorest districts in the Northwest, Rangpur and Nilphamari. The primary beneficiaries are 1,445 women comprising of three different sub-groups: agriculture day laborers (981), smallholder farmers (410), and agricultural input businesswomen (54). The project has created 54 farmer groups that derive from the original CARE Bangladesh Pathways project, SETU (Social and Economic Transformation of the Ultra-Poor).

The impact and evaluation study, as envisaged by CARE Bangladesh, aims to assess the impact of the project on female agriculture day laborers' salaries within SAMMOW's geographical region and to help CARE and other stakeholders learn from SAMMOW's activities.

1.2. Study Objectives

1.2.1. Overall objectives

The main objective of the project is to conduct a proper impact evaluation to understand the wage differentiation between program participant (SAMMOW group members) and non-participant (female agriculture day laborers in the community who are not a part of an SAMMOW group) and assessing the role of the project in the wage differentiation as well as in gender and empowerment of the women agriculture day laborers or how the project relates to changes in household decision making, access and control of productive resources, nutrition consumption, children's education enrollment.

1.2.2. Specific Tasks and objectives

In line with the objective of the SAMMOW project, the impact and evaluation study aims to attain the following specific objectives:

- Understanding the project by reviewing project documents and any CARE documentation on Pathways Bangladesh and Pathways Global
- Assess the impact of the Pathways SAMMOW project on the wages of female agriculture day laborers in the communities where SAMMOW operates (on both SAMMOW project participants and women day laborer not directly affiliated with the project) particularly at the Union-level.
- A simple cost-benefit analysis on the total project costs (money spent from the B&MGF grant) and total estimated benefits (increase in wage multiplied by all agriculture day laborers impacted). To do the analysis, it was necessary to isolate the cost incurred in serving the agriculture day labor, but it was difficult to do that. Therefore, the cost-benefit analysis will yield a downward biased estimate.
- Assess the impact of the wage increases on household-level and community-level decision making, access and control of productive resources, nutrition consumption, and children's education enrollment and overall women's empowerment.
- Analyze the sustainability potential of the wage increases achieved by the women agriculture day laborers and describe the key challenges and opportunities in relation to the local context (government processes, landowner's power and incentives etc.)
- Recommendations for CARE Bangladesh's future programming around agriculture day laborers based on the results of this study.

2. Research Methodology

In order to attain the objectives of the study, both quantitative and qualitative methods have been followed. The study primarily addresses the impact of the program using the quantitative information collected from survey administering through structured questionnaire at household level. Some qualitative information has also been collected to understand the coherence of qualitative and quantitative findings; in fact, qualitative finding has been used as the complement of quantitative findings and the checking robustness of the quantitative findings. A number of

methods have been used to collect data. These are (i) project document analysis, (ii) direct observation, (iii) case studies, (iv) key informants interviews (KII), and (v) focus group discussions (FGD).

2.1. Methods of Data Collection

As mentioned earlier several data collection methods have been used to divulge the wider impact of the program from various angles.

Document Analysis: Before going for survey, the research team reads and analyzes the project documents such as annual pathways report, Pathways Operational Framework: Push, Pull and Cross-Cutting Strategies, and project proposal of SAMMOW in order to understand project its objectives, goals, approaches and implementation strategies. In addition, the baseline documents such as baseline report, baseline data have been examined to identify the indicators and their measurement and thereby to assess the impact of the program.

Direct Observation: A direct observation techniques has been followed. The observation technique involved observing and recording the interviews in audio as well as in pictorial format. To understand the demand and supply of labor, we have visited some of the landlord households as well as the houses of the beneficiary.

Case studies: Selected case studies have also been done to collect in-depth information from the beneficiaries. The case studies, descriptive and explanatory, served to document the voice of the women in the development process.

Interviews: Interviews has been conducted at individual household level and group level both at program and control areas. Key informants interviews have also been conducted at community level. The interviews were administered face to face in both formal and informal settings, and the interview protocol included both closed questions with a series of possible answers and open-ended questions where broad questions were followed up with more specific questions. The interviews were conducted to understand the process of implementing the program, the intended impact perceived by the beneficiaries and their future strategies for sustaining the impact.

Focus group discussions (FGD): Three FGDs have been conducted with the beneficiaries in three different program areas; one FGD has been conducted in the area adjacent to the program village to capture the spillover effect of the program, and one FGD has also been conducted in the control area to draw a demarcation line of the impact. These FGDs, in general, give the notion of the program: its approach, effectiveness and sustainability of the intended impact.

2.2. Sample area and samples

The program is being implemented in two districts – Rangpur and Nilphamari as mentioned earlier. The sample has been collected from Nilphamari district, the district where the project has been started first in 2012., Samples have been selected from the women day labor group only, as we just want to observe the wage differentiation between participant and control women.

Two program areas of Nilphamari districts, Ramnagar and Lakhmichap, have been selected for survey. The two areas differ in terms of economic opportunities and the well-being of the households. Ramnagar has generally better off condition compared to Lakhmichap. On the other hand, one control area has been selected. Tupa mara hazipara is the control village. This control village is relative far away of the program area. The inhabitants of this control area hardly know about the process of wage increase in Ramnagar or Lakhmichap.

2.3. Determining the Sample Size

In this approach, one first specifies two critical considerations: (1) desired width of a confidence interval and (2) the level of certainty with which inference can be drawn about the population characteristics. Then, given the population size it becomes possible to determine the sample size that achieves the two goals specified.

Statistically, this relationship between sample and population mean of an outcome such as income can be defined as:

$$\xi = Z_{\alpha/2} \frac{\sigma}{\sqrt{N}}$$

where $z_{\alpha/2}$ is known as the critical value, σ is the population standard deviation, and N is the sample size.

Rearranging the above one can specify N , necessary to produce results accurate to a specified confidence and margin of error:

$$N = \left[\frac{Z_{\alpha/2} \sigma}{\xi} \right]^2 .$$

The above formula can be used when the population standard deviation is known. In general, however, population standard deviation cannot be known *a priori* and statistical simulation analyses are undertaken to assume a value of it. There is however another method of sample size determination, which does not require making assumptions about the population standard deviation. In this case, the sample size (S) is defined as:

$$S = \frac{Z^2 * (p) * (1 - p)}{c^2} \quad (1)$$

where:

Z = Z value (e.g. with a normal distribution the value is 1.96 for the 95% confidence level)

p = percentage picking a choice (when determining the sample size for a given level of accuracy the worst case percentage (50%) is to be used).

c = confidence interval.

While (1) is our preferred sampling strategy, to be more precise we can introduce the correction for finite population, which is defined as:

$$S^* = \frac{S}{1 + \frac{S-1}{Pop}} \quad (2)$$

where, Pop stands for population.

For the impact study of the SAMMOW programme in the intervention areas, we propose to use (2) in determining the sample size.

Assuming $z=1.96$, $p=0.5$, and $c=0.1$, we find

$$S = \frac{(1.96)^2 \times 0.5 \times 0.5}{(0.1)^2} \approx 96$$

$$\text{Now, } S^* = \frac{96}{1 + \frac{96-1}{941}} \approx 88$$

Following equation (2) we find sample size of 88. Since some survey data may be unused due to poor quality either for sample non-response or poor information. Therefore, additional 2 participant households have been interviewed and total sample participant stands at 90. Since comparison group, control households, has to be representative in relative to participant households, we have decided on judgment basis that not less than 40 percent and not more than 50 percent of the participant households will be considered as the control. Thereby, we have decided to take 45 households as control.

In total, 90 program participants have been randomly selected after selecting the program areas, and 45 control women day labor has also been selected following the characteristics of the women in the program so that comparison group, program participant and control, becomes homogenous in terms of some observed characteristics and the outcome becomes robust.

2.4. Analytical Methods

The current study assesses the impact of the program in the quant-qual approach.

To examine the impact we are using the before-after comparison as well as the difference-in-difference technique. The first method has been used to see the trend of the target indicator, wage rate for women agriculture day labor. Since the first method cannot eliminate the time effect, the second method has been used to get the net effect of the program if any.

This study is concerned with the average impact on the outcome variables. The most widely used measure of the average impact is the average treatment effect (ATT) on the treated. In the context of the current program, ATT is the mean impact on wage amongst those who actually receive the program compared to their counterfactuals. The literature has long recognized that impact evaluation is essentially a problem of missing data, given that it is physically impossible to measure outcomes for someone in two states of nature at the same time (participating in a program and not participating). With the data that are likely to be available, an obvious place to start is the single difference (D) in mean outcomes between the participants and non-participants:

$$D = \bar{Y}^1 - \bar{Y}^0$$

Where, Y is the outcome variable, bar indicates an average of the outcome variable, and the superscript denotes the group (1 for the participants and 0 for the non-participants).

The above equation immediately results into a selection bias when we want to measure the ATT. D will correctly measure ATT only when the non-participants are exactly similar to the participants. This means that the non-participants are assumed to be the proxies for the participants for the average outcome variable if they had not participated. This is a very strong assumption and in all respects it is invalid in reality. The participants and non-participants usually have some distinctive features. For example, the participants might be poorer than the non-participants and that is why in the first place they enrolled in the program. In that case, obviously D will substantially underestimate the actual ATT.

One way to deal with the above problem is panel data. Suppose we have information on both the participants and non-participants before and after the program enrollment. Then we can measure:

$$DID = (\bar{Y}_1^1 - \bar{Y}_0^1) - (\bar{Y}_1^0 - \bar{Y}_0^0)$$

Here, the subscript denotes the time period, 1 for the time when the participation took place and 0 for the previous time period. The term $(\bar{Y}_1^1 - \bar{Y}_0^1)$ is the before and after participation difference between the mean value of outcome for the program participants. $(\bar{Y}_1^0 - \bar{Y}_0^0)$ calculates the same value for the non-participants.

For the program participants,

$$D_1 = (\bar{Y}_1^1 - \bar{Y}_0^1) = \text{Time Effect} + \text{Program effect}$$

Time effect measures the natural change in outcome variable that might occur from one period to another. On the other hand,

$$D_2 = (\bar{Y}_1^0 - \bar{Y}_0^0)$$

only measures the time effect for the non-participants. We are assuming this time effect is group independent, i.e., no matter whether a household is participant or not, the impact on the outcome variable is the same. This is a strong assumption in the sense that the time, as in the above example of bumper production, might affect different groups of people in the same rural economy depending on the diverse characteristics of those groups. We can deal with this problem with a different method of program evaluation.

From the above two differences in the two groups, we can estimate the difference-in-difference (*DID*),

$$\begin{aligned} DID &= D_1 - D_2 = \text{Time Effect} + \text{Program Effect} - \text{Time Effect} \\ &= \text{Program Effect} \end{aligned}$$

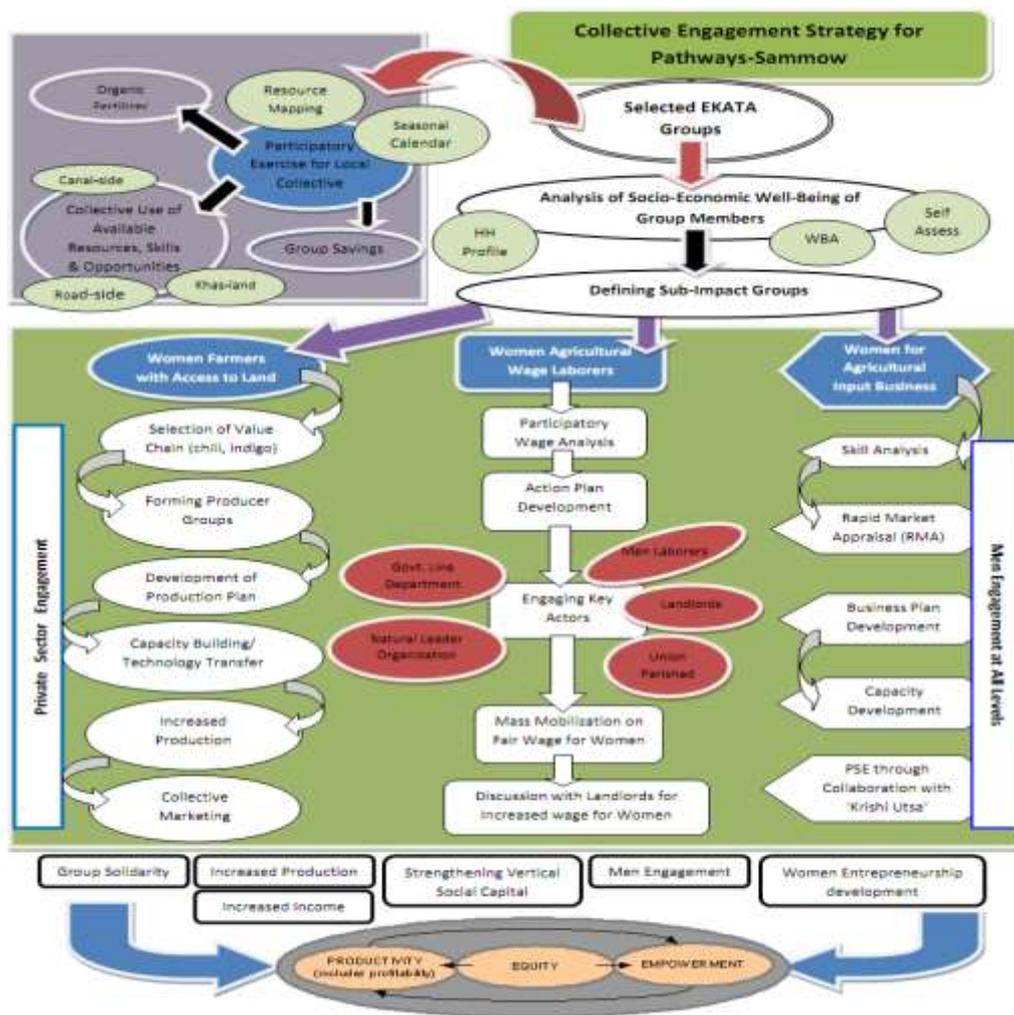
How accurately DID would measure the program crucially depends on the above assumption of equal time effect for both the participants and non-participants.

3. The Program

3.1. Background

“Stimulating Agricultural Management and Marketing Opportunities for Women (SAMMOW) in Bangladesh” is the project implemented by CARE Bangladesh. The project has been piloting in 4 Unions of Nilphamary sadar Upazila and 2 Unions of Rangpur Sadar Upazila since January 2012 aiming to increase poor women farmers' productivity and empowerment in more equitable agricultural systems at scale. The project is funded by Bill and Melinda Gates Foundation.

Strategic Frame for Pathways SAMMOW



Source: Pathways SAMMOW Project Document

Pathways-SAMMOW is responsible to transform the lives of 1445 women in the targeted poorest and most marginalized districts (Nilphamari and Rangpur) by reducing their vulnerability. The project has target to raise awareness on women's productive role in agriculture at the local level, by recognizing practices to enhance women's productive role in agriculture. Aiming to improve household's nutritional condition, strengthen household productivity, and reduce income poverty in the long-term, CARE developed in understanding these initiatives through contextual analysis, its diversified programming in the areas of food and livelihood security, agricultural and natural resources management, economic development and women empowerment programming, all which contributes towards Pathways project, in developing understanding on women's marginalization and exclusion in the agricultural value chain.

Some of the agricultural wage earners are particularly socially marginalized – including female-headed households. In the project areas CARE analyzes the social context of wage discrimination by gender. They found that although the number of women’s work is as same as men but the volume of work of women is not similar, for example, women can do 80% work where as men can do 100% within the labor time and thereby exhibits work efficiency of men in field work such as weeding, Soil loosing etc. Women perceived that they are not yet been recognized in family, having wages, socially in spite of doing lot of work. Women are contributing to agriculture together with men are not also been recognized. There is still wages discrimination in some work which can be done equally by both men and women Men worker teasing women worker when women are get involved in doing any work in case of selling labor, cleaning of jute, rice harvesting and dike repairing for rice filed etc. CARE initiates to reduce the discrimination of women wages through engaging and developing relationship with land lord, men day laborer, local elite, influential persons using analysis of the current situation, arrange session /gathering on wages establishment in ward and union level. The project has been implementing the following major activities.

- EKATA² Group mobilization
- Explore savings mechanism of group to change their livelihood
- Capacity building training on savings credit management, and leadership,
- Community mobilization on “fair wage” issues and “women contribution to agriculture”
- Skill development training to the targeted beneficiaries on (homestead gardening, Chili production, and Indigo production and Potato cultivation)
- Basic business skill development training to the targeted beneficiaries
- Linkages with FIs, formal & informal market actors and different service providers

Table 1: Project Summary	
Title of the project	Stimulating Agricultural Management and Marketing Opportunities for Women (SAMMOW) in Bangladesh
Project locations	Chandanpat and Mominpur Unions of Sadar Upazila under Rangpur district; Ramnagr , Laxmichand, Chawra Borogasha and Khukshabari Unions of Sadar Upazila under Nilphamary District
Project duration	January , 20 12 to May 2014
Types of project	Pilot phase

² Empowerment, Knowledge and Transformative Action (EKATA): EKATA is a platform for women empowerment that is used to develop confidence, self-esteem, and skills of women to broaden their agency, relationships and structure, while improving their social position, human condition and in the creation of an enabling environment for inclusion and participation of women in development processes. CARE Bangladesh has taken a strategic decision to work with existing EKATA groups for Pathways-Sammow. Accordingly 54 EKATA groups in 6 unions of Rangpur and Nilphamari districts have been selected. These groups were formed by Social and Economic Development of the Ultra-Poor (SETU) Project funded by DfID to strengthen women’s solidarity for addressing gender-based discriminations.

Target group	Pro-poor community		
Overall goal	To increase poor women farmers' productivity and empowerment in more equitable agricultural systems at scale		
Project objective	Enhanced recognition of women for productive engagement in agriculture as producers, entrepreneurs' and wage earners		
Outputs	<p>Output- 1: Strong solidarity group established to negotiate women farmer issue.</p> <p>Output- 2: Mass awareness raised on women's productive role in Agriculture at local level.</p> <p>Output- 3: Strong solidarity group established to negotiate women farmer issue.</p> <p>Output- 4: Engendered policies and practices to recognize women's productive role in agriculture</p> <p>Output-5: Documented learning of promising practices and shared to influence development practices</p>		
Major activities	<ul style="list-style-type: none"> - Facilitate participatory analysis on "fair wage" issues with EKATA Groups - Provide training to EKATA groups on 1984 Land Reform Ordinance and present Labour Law in relation to agricultural wage and Relevance to Women's Role in Agriculture - Facilitate EKATA Forum at Union level, develop leadership capability and assist the forum to lead movement on fair wage - Coordinate and Link Ekata group with NL Organization & UP - Facilitate exercises on women's contribution to labour in communities - Explore savings mechanism of group to change their livelihood - Identifying scopes in selected value chain, conduct market study and formulating an action plan to engage selected EKATA groups - Facilitating capacity building on agricultural value chain with beneficiaries - Review of labour law specifically focusing on women wage labourers rights - Review of 1984 Land Reform Ordinance and relevance to women's role in agriculture - Conduct half yearly Group Assessment - Organize Six Monthly Reflection Workshop with field staff 		
Total number of direct beneficiaries	Name of sub-impact group	# of beneficiaries	
		Male	Female
	Agriculture women farmer	-	411
	Agriculture input business group	-	582
	Agricultural women day labor	-	452
	Total		1445
Donor:	Bill & Melinda Gates Foundation		

Source: Project Document

3.2. Characteristics of the Women Beneficiaries

All the direct beneficiaries of the program are women, and indirectly the household members associated with the direct beneficiary of the program. The following table shows some characteristics of the beneficiaries such as age of the beneficiary and the characteristics of the beneficiary households, such as household size, asset holdings, etc.

Table 2: Characteristics of Women beneficiaries of Pathways-SAMMOW project

Variable	Nilphamari	Rangpur	Total
Age of the woman	29.82	31.06	30.25
Household size	4.12	4.11	4.12
Homestead: decimal	3.29	2.52	3.02
Agricultural land: decimal	4.63	3.24	4.14
Share cropped land: decimal	8.49	6.61	7.83
Household land: agriculture and homestead	7.80	5.76	7.09
Household has homestead: yes=1	77.92	81.55	79.18
Live in khas land: yes=1	0.00	4.96	1.73
Household has agriculture land: yes=1	14.65	6.35	11.76
Household has land: yes=1	78.56	81.55	79.60

Source: Estimated based on SAMMOW project data

Note: The summary statistics are generated from aggregate data covering all type of participants and in the given dataset and as the data is not dissected by type of beneficiaries, agriculture day labor, agriculture entrepreneur and agriculture input business.

The table shows that the beneficiary women are of around 30 years old on average. The household size of the beneficiary household, on average, is a little over 4. Although majority of the beneficiary households have homestead, they have hardly possessed the agriculture land, own land or share cropping land. From the table, we find that around 12 percent of the beneficiary households have agriculture land and the land size, agriculture land or homestead, is very low. Some beneficiary households even live in khas land. These characteristics reveal that the target beneficiary households are very poor in terms of land asset holding.

Table 3: Other characteristics by gender of household head

	Male	Female	Total sample
Education of household head		%	
No education	58.9	52.8	58.1
Primary (1-6)	24.9	24.5	24.9

Secondary (7-9)	5.5	0.0	4.8
More than secondary	1.2	0.0	1.1
N	401	53	454
Household dietary diversity and women's access to food (Average)			
Household dietary diversity score	4.41*	3.96	4.36
Women's intra-household food access score	4.40*	3.96	4.35
Asset Ownership (%)			
Poultry	42.1	35.8	41.4
Small consumer durables	34.9	22.6	33.5
Means of transportation	29.9	5.7	27.1
Cell phones	32.2*	7.5	29.3
Large livestock	18.0	11.3	17.2
Non-mechanized farm equipment	16.6	17.0	16.7
Small livestock (goats, sheep)	16.7	13.2	16.3
Large consumer durables	1.0	0.0	0.9
Land not used for agricultural purposes	0.2	0.0	0.2
Non-farm business equipment	0.2	0.0	0.2
Mechanized farm equipment	0.5	0.0	0.4
Fish ponds or fishing equipment	2.5	0.0	2.2
Asset Ownership (Average)			
Poultry	1.3**	0.6	1.2
Non-mechanized farm equipment	0.5	0.4	0.5
Small livestock (goats, sheep)	0.3	0.2	0.3
Large consumer durables	0.0	0.0	0.0
Cell phones	0.3**	0.1	0.3
Means of transportation	0.3**	0.1	0.3
Land not used for agricultural purposes	0.0	0.0	0.0
Non-farm business equipment	0.0	0.0	0.0
Large livestock	0.3*	0.1	0.3
Fish ponds or fishing equipment	0.1	0.0	0.0
Mechanized farm equipment	0.0	0.0	0.0

Source: Baseline Survey Data Analysis

Note: *Means/percentages are significantly different at $p < .05$

The heads of beneficiary households have limited education, only 25 percent completed primary and below primary and 58 percent do not have education. The household dietary diversity score is 4.36 and the women's intra-household food access score is 4.35. The female headed households are more vulnerable in terms of asset ownership. The table shows that 42 percent household possesses poultry (on average 1.2), 17.2 percent has cattle and the average cattle number is less than one, 33.5 percent has small consumer durable goods, 29.3 percent has mobile phone, and households have some sort of transport equipments.

It is to be mentioned that the preceding characteristics show the characteristics of the entire beneficiaries of the program – women agricultural day laborers, women farmers and women agriculture input business. Therefore, the basic characteristics of the entire population of the program reveal the characteristics of the target population and therefore give us a clear understanding about the beneficiaries, in general. But the objective of the current study is to assess the impact of the program on women agricultural day laborers, in particular. Therefore, the understanding the characteristics of the agriculture day labor is more relevant than the entire population. The characteristics of the women agricultural day laborers and their households are presented in the following table.

Table 4: Characteristics of agricultural female wage labor

Variable	Nilphamari	Rangpur	Total
Age of the woman	31.15	32.04	31.33
Household size	4.06	3.88	4.03
Homestead: decimal	2.88	2.06	2.71
Agricultural land: decimal	2.45	1.18	2.20
Share cropped land: decimal	7.30	4.16	6.67
Household land: agriculture and homestead	5.29	3.23	4.88
Household has homestead: yes=1	79.21	74.17	78.20
Live in khas land: yes=1	0.00	5.83	1.16
Household has agriculture land: yes=1	9.98	3.33	8.65
Household has land: yes=1	79.42	74.17	78.37

Source: Estimated based on baseline SAMMOW wage data (2014)

The table shows some analogous pattern as given by the overall picture just described above. Exclusion of women farmers and women agriculture business from the generation of characteristics of the women agriculture day laborers shows that the women agriculture day laborers are very poor compared to other two groups which is expected.

4. Assessing Program Impact

The key objectives of the current study are to assess the impacts of the program on women agriculture wage, women empowerment, and the subsequent impact at households and community levels. We want to explore the wage scenario first and then want to discuss the subsequent impacts.

4.1. Wage pattern

Wage for agriculture day labor fluctuates due to crop seasonality, peak and lean season, and the cropping pattern or cropped items such as jute, rice, potato, etc., production. The wage for working as day labor in potato production is different from that of rice. It is normally found that the day labors obtained highest wage for rice production, while they received low wage for potato production. This is because the price of the agriculture outputs, rice or potato, varies. Since the wage is determined by the marginal productivity of the labor and the price of the community produced, it is expected that holding the productivity constant a lower price of the produced community yields lower wage. This pattern is observed in the program and control areas as well. Day labor working in the rice field is paid higher than those working in the potato field. In fact, the day labor gets higher wage during rice season and gets lower wage during potato season.

4.2. Wage gap

In the literature of labor economics, the wage differential between male and female workers especially in agriculture is the fundamental issue of discussion. This wage discrimination by gender has some social context and part of the discussion is made earlier. The wage discrimination is found, as well, in the northern region of the country. The wage discrimination is found by gender and by geographic region. By the geographic economic characteristics, the north-west region of the country is heavily dependent on agricultural activities and agriculture is the predominant source of household income specially among the landless and marginalized people. The wage of male agriculture day labor was almost twice of the wage of female agriculture day labor. Pattern of agricultural wage in 2011 in the program village is presented in the following figure.

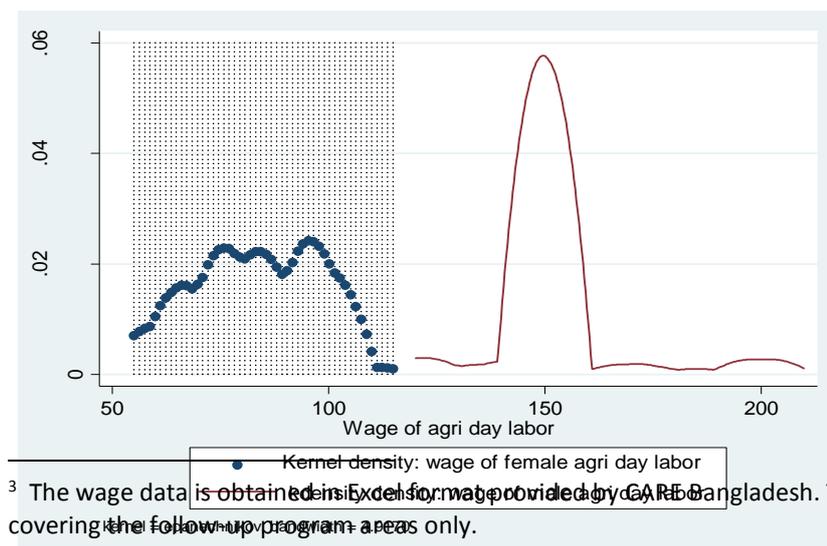


Figure 1: Kernel density plot for wage rate of male and female agriculture day labor

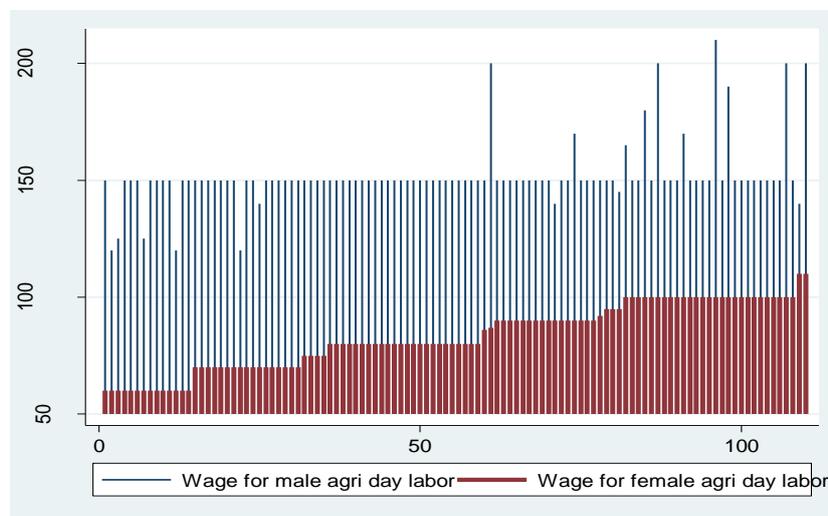
The figure shows the kernel density of wage for agricultural day labor, male and female, in the program village (baseline)³.

³ The wage data is obtained in Excel format provided by CARE Bangladesh. The figure is drawn based on the data covering the follow-up program areas only.

The vertical axis measures the density and the horizontal axis measures the wage rate of male and female agriculture day labors. The figure distinctly shows that the wage density function for female agriculture day labor is totally isolated from the wage density function for male agriculture day labor. The density functions shows that the female agriculture day labor has a mean wage of around 85 taka with a relatively large variance suggesting wider variation in wage while the male agriculture day labor has a mean wage of around 150 taka with a low variance implying a lower variation in wage.

The wage differentials are quite large, more than thrice, in some areas while they are low, less than twice. The range of wage differentials in different program areas is presented in the following figure where the vertical axis measures the individual wage rate for male and female agriculture day labor and the horizontal axis measures the rank of individuals based on the wage received.

Figure 2: Spikes of wage for agricultural day labor in baseline wage information



The kernel density and spike plots give us the pattern of wage differentials among male and female agriculture day labor, however, they do not show the significance of the difference. This significance difference has been tested using the mean comparison test and the result is reported below.

Table 5: Average wage and wage differentials

Statistics	Baseline wage data
Average wage	
Female agriculture day labor	85

Male agriculture day labor	150
Standard error	
Female agriculture day labor	1.32
Male agriculture day labor	1.32
Standard deviation	
Female agriculture day labor	13.98
Male agriculture day labor	13.88
Wage Differentials	(-) 68
T-Statistics	-47.78

Source: Authors' calculation

The mean comparison test yields the average wage for female agriculture day labor of 85 taka with a standard error of 1.32 and a standard deviation of 13.98 while the average wage for male agriculture day labor of 150 taka with a standard error of 1.32 and a standard deviation of 13.88. The wage differential is around 68 and the t-statistics shows that the differential is highly statistically significant. Therefore, it is confirmed that the female agriculture day labor had a wage rate lower of 45 percent than that of a male agriculture day labor. Conversely, the male agriculture wage labor got wage rate of 1.76 times higher than that of female agriculture day labor.

Now, the question is whether program intervention has reduced the wage gap by increasing the wage rate for the female agriculture day labor or not. If the program yields the expected outcome, the higher wage and lower wage gap, then it is expected that the increased wage will bring a change in the livelihood of the beneficiary households. Here, we first want to see the change in wage income of the female agriculture labor and then to examine the derivative changes in other welfare indicators.

Table 6: Wage differentials by gender in program village

	Pre intervention (2011)	Post intervention (2014)	Difference	% change
Wage for male agri. labor	150	184	34	(+) 22.67
Wage for female agri. labor	85	124	39	(+) 45.88
Wage gap (Male – Female)	65	60	-5	(-) 7.70
Gap as % of female wage	76.47	48.39	-28.08	(-) 36.72
Gap as % of male wage	43.33	32.61	-10.72	(-) 24.75

Wage ratio (Male/ Female)	1.76	1.48	-0.28	(-) 15.91
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Source: Authors' calculation based on baseline and follow up data

The above table shows that the wage rate for male agriculture day labor has increased by around 23 percent, while that for female agriculture day labor has gone up by around 46 percent. In absolute term, on average, the wage rate for female agriculture day labor has increased by 39 taka. The wage gap in the pre-intervention was 65 taka which reduced to 60 taka in post intervention, a 7.7 percent reduction of wage differentials. The gap in terms of the percentage of wage of female agriculture has gone down from 76.5% to 48.4%, approximately 37 percentage points.

It is well documented that the program has successfully reduced the wage differentials⁴ in program village and the target people has higher wage and thereby higher income. However, the simple before-after comparison does not reveal the full picture because the program evaluation requires counterfactual. Using the recall method we have collected the wage information in the control areas as well as the current wage information is gathered through structured questionnaires. The wage gap in control village is presented in the following table.

Table 7: Wage differentials in control village

	In 2011	In 2014	Difference	% change
Wage for male agri. labor	90	127	37	(+) 41.11
Wage for female agri. labor	42	69	27	(+) 64.29
Wage gap (Male – Female)	48	58	10	(+) 20.83
Gap as % of female wage	114.29	84.06	-30.23	(-) 26.45
Gap as % of male wage	53.33	45.67	-7.66	(-) 14.37
Wage ratio (Male/ Female)	2.14	1.84	-0.30	(-) 14.11

Source: Authors' calculation based on baseline and follow up data

The above table shows that like the program village, the wage gap between male and female agriculture day labor persists and even the gap is substantial. The wage for both male and female agriculture day labor has gone up by around 41 percent for male and 64 percent for female.

Since the wage of female agriculture day labor in program as well as in control village has gone up although in various degrees, it is a crux to draw a concrete conclusion without controlling the time

⁴ The wage differential is defined on per day wage for men and women labor.

effect. This has been done using the simple difference-in-difference or double difference techniques. The results are reported in the following table.

Table 8: Wage differentials among female labor in program and control village

Wage for female agri. labor	In 2011	In 2014	Difference	% change
Control area	42	69	27	(+) 64.29
Program area	85	124	39	(+) 45.88
Wage gap (Program – Control)	43	55	12	(+) 27.91
Gap as % of control	102.38	79.71	-22.67	(-) 22.14
Gap as % of program	50.59	44.35	-6.23	(-) 12.32
Wage ratio (Program/ Control)	2.02	1.80	-0.23	(-) 11.20

Source: Authors' calculation based on baseline and follow up data

The table shows that the women agriculture day labor in program villages had higher wage in 2011 compared to women agriculture day labor in control villages. The wage differential between female agriculture day labor in program and control villages in 2011 was around 43 taka, around 102 percent of wage for women agriculture day labor in control village or around 51 percent of wage for women agriculture day labor in program village. In 2014, the wage differential increased to 55 taka. This incremental wage includes the time and program effect. The elimination of time effect by the double difference method shows that the net effect of the program is around 12 taka per day.

4.3. Visualization of the impact and its sustainability

Before intervention, the average wage of the female agricultural day labor in the program was 85 taka per day on an average and after the intervention the wage stands at 124 taka per day. Therefore, the wage of the beneficiary has gone up by 39 taka. However, this 39 taka wage gain over the project period does not truly reflect the program effect because wage increases overtime. Therefore, part of the incremental wage gain may be due to program intervention. To isolate the program effect from the entire or total effect we have estimated the wage of the counterfactual control group. Since total effect comprises of program effect and time effect, we want to cancel out the time effect by using the double difference method. The control female agricultural day labor was relatively worse off than the beneficiaries at pre-intervention period. The descriptive statistics have been plotted in the following figure to explain the process of determining the net effect of the program

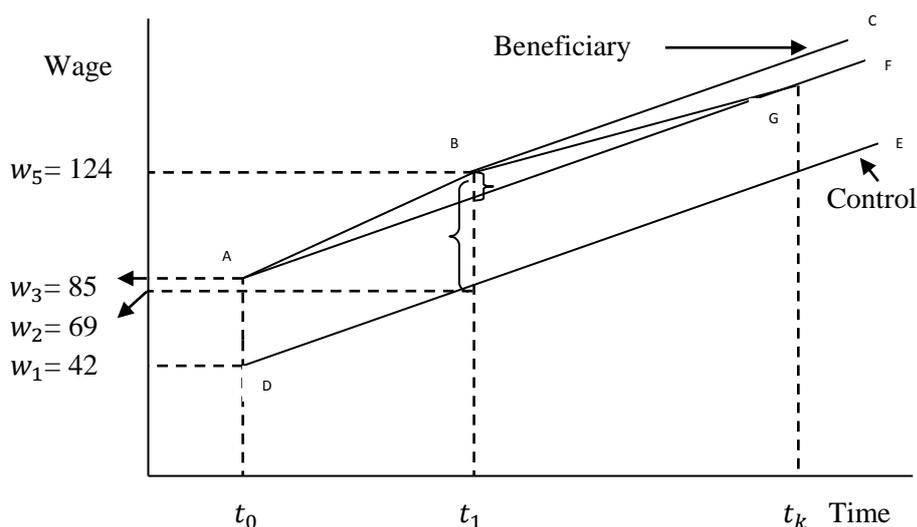


Figure 3: Program impact and sustainability of outcome

Source: Drawn based on survey outcome and presumed shapes after phase out of the program

Note: In the figure, DE represents the wage trend of control women agriculture day labor; AB shows wage trend of wage of beneficiary women for program period; BG and BC are some possible wage trends of beneficiaries for program phase out period.

Price of labor (wage), in general, is flexible upward and inflexible downward. Therefore, it is expected that the wage of the control and beneficiary will increase overtime. The descriptive analysis shows that the rate of wage increase for female agriculture day labor in control village is larger than that of in program village and therefore, the net effect may tends to zero at some point of time. Therefore, it is a question of sustaining the increased wage in terms of control. However, it is less likely that the wage in the program village will go down in the phase out period of the program as argued earlier that wage is flexible upward but inflexible downward. Hence, it could be opined that the program has successful in shifting the wage base for female agriculture day labor in the program area.

4.4. Wider Impact of the Program

To understand the wider impact of the program, we have selected some indicators such as empowerment, asset holding and ownership, food security, education, and health expenditure. It is well-evident that the income of the female agriculture day labor has gone up due to the overall wage increase in the region, but the income of the beneficiary households has increased more as the income of the woman agriculture has gone up higher than that of control households. From the

economic point of view, we can argue that the additional income should be distributed in such a way that the welfare of the household increases. The additional income has some positive impact on expenditure, food and non-food, asset holdings, holding of cattle and poultry, and empowerment, the ownership of asset and decision taking ability. It would be quite relevant to make a comparison between participant and control households quantitatively to capture the exact impact of the program on the wider indicators, social and economical; we have tried to identify the gain by qualitative approach. Keeping this idea in mind, we have performed several FGDs in the program and control village. The findings are represented in generic form as qualitative assessment hardly represent quantitative information. From the FGD discussion it is derived that most of the beneficiary households reap the benefit of the program by increasing their physical asset base as well as other indicators such as increased savings.

- **Women empowerment:** The program has contributed to women empowerment. The women work as a group in most case and in individual case they do not break the wage norm they practice, that is, the individual wage rate never goes below the market wage rate set by the group. The EKATA group has increased the wage bargaining power and empowered the women of the group. The women argue that the EKATA approach has taught them about the seasonal calendar of the agricultural activity and the demand structure for agriculture day labor by drawing seasonal calendar. They are now much more united than earlier. They told that before the program, the male would take major decisions of the households, but now, they can take some household level decisions side by side of male to some extent. However, most of them told that they now play important role in the household like their counterpart. The scenario becomes quite visible when FGD has been done in control village. The women in the control village are not united and they work mostly on individual contact basis.
- **Livestock asset:** The higher income due to higher wage rate induces the beneficiaries to investment in livestock asset such as cow rearing, goat rearing, poultry rearing, etc. Some beneficiary argued that the higher income base helped them to invest on livestock development. The following table shows changes in asset holding status in program and control village. In program village, we are able to find a pre and post scenario.

We find that holding of large livestock such as cow and buffalo has increased among the beneficiary households. Most of the day labor beneficiary households have cattle compared to the control day labor households (48.8%).

Table 9: Some asset holding status in program and control households (2014)

Asset	Frequency		Percentage	
	Control	Program	Control	Program
Cow/buffalo	21	52	48.84	61.90
Goat/sheep	1	33	2.33	39.29
Hen/duck	6	43	13.95	51.19
Pick-up/van/rickshaw	0	10	0.00	15.47
N	43	84	100.00	100.00

Source: Authors' calculation

The poultry holdings have also increased. The holding of transport equipment in the household has decreased. This decrease could be due to change in occupational structure such as rickshaw pulling to small trader.

- **Improved Food Security:** The overall food security of the households has improved. The FGD participants told that they face hardly food hardship now compared to two or three years ago. They can now have almost three meals in a day. They also told that they can now access to better food as well.

	Participant	
	Baseline	Follow-up
In the past 3 months, were there times when you did not have food or enough money to buy food	93.61%	50.00%
Amount of credit (taka)	7466	1250
Spending on education (taka)	155	405
Spending on health (taka)	251	509

Source: Survey Data (Baseline, and follow-up, 2014)

- **Financial liability and debt:** The financial liability of the households has gone down as dependence on credit has gone down. Some beneficiary left some of the credit programs and formed informal savings club and save their money to the local bank.
- **Health and education:** The better food access ensures the better health and the opportunity of education and capability of accessing to education opportunity has increased.

In a nutshell, the program has increased the wage rate for female agriculture day labor by around 12 taka per day or 300 taka per month⁵, net program impact (DID based estimates). The before and after comparison shows that the income increased by around 975 taka per month. The increased income, first of all, enhanced their food security and other opportunities such as access to health and education; enhanced their physical asset such as cows, goats, and chicken. However, a tricky question may always arrive in mind that the obtained impact on the selective indicators is solely due to the increase of wage income of the female worker. From the perspective of rural households, it is sometimes difficult to isolate the contribution of woman in accumulating or even household level spending because households, mostly, take expenditure or investment decision based on the gross household level income rather the individual income. Therefore, without any hesitation, we can state that the accrued benefit to the household is partly due to the contribution of the women labor and the remaining is from the contribution of male. However, as we mentioned just earlier that it is quite difficult to isolate the impact by gender.

4.5. Spillover Effect of the Program

The female agriculture day labor of the villages, adjacent to the program village, also benefit from the program as like as a program village. This is because the female agriculture day labors in those villages are aware of the wage rate of the nearest village and the process of forming group and thereby act in unity. Moreover, the agriculture day labors of the villages, very much adjacent to the program village, has restricted their labor supply to the program village under oral agreement with the EKATA group of the program village and informally has taken initiatives to increase the wage rate for women agriculture day labors in these villages. Therefore, it is very much apprehended that the program has created spillover effect, almost equivalent to the program impact.

4.6. Views of Landlord

The beneficiary of the program is the supplier of labor hour while the landlords are the demander of labor hour. The landlords normally live in a well place and the day labor households are located adjacent to the landlords. The traditional labor market in the survey areas creates substantial wage differentiation among male and female agriculture day labor. Such discrimination was well-established. However, the attempts of CARE in reducing the wage differentiation create some vibration in the locality. CARE organized a meeting between day labors, male and female, and landlords in the specific areas and throw the question of justice in paying the wage. Many of the

⁵ Assumed that number of working days in a month is 25

landlords, at first, did not try to understand the justice in wage payment. But counseling by the project staff has motivated them to come in an equilibrium state that women should be paid higher and the wage differentiation has to be reduced. Many of the landlords, more than 90 percent, accept the proposed wage and signed in an agreement that they will not pay as wage below that proposed threshold. The awareness of the female agriculture day labor about the wage and the understanding between worker and employer make it possible to increase the wage. The landlord argues that the increased wage initially increased the labor supply and creates more enthusiastic labor supply. However, it tends to decline overtime. On the other hand, the worker, especially women, argued that wage has to be increased every year in accordance to the inflation rate; otherwise the immediate gain may erode within a limited time.

4.7. Benefit-cost analysis

To measure the benefit-cost ratio, we will use simple formula of benefit-cost ratio $BCR = \frac{PVB}{I}$, where BCR refers benefit-cost ratio, PVB refers present value of benefits, and I refers initial investment. The main feature of the program is that the cost incurred for the two years but the benefits may be accrued for many years. Therefore, to assess the benefit-cost ratio we have run some simulation changing the years of accrued benefit. The simulated benefit-cost ratio is reported in the following figure.

Table 10: Benefit-cost ratio

	Duration (Months)			
	23	36	60	120
Grant (\$)	250000	250000	250000	250000
Exchange rate	78	78	78	78
Total grant BDT	19500000	19500000	19500000	19500000
Beneficiary	1445	1445	1445	1445
Women agriculture day labor	980	980	980	980
Cost per beneficiary	13495	13495	13495	13495
Project duration (Months)	23	23	23	23
Accrued benefit sustained (Months)	23	36	60	120
Cost per beneficiary per month	587	587	587	587
Benefit per beneficiary per day	12	12	12	12
Expected working day per month	15	15	15	15

Benefit per beneficiary per months	180	180	180	180
Total benefit accrued during project	3939029	6165437	10275728	20551456
Benefit cost ratio	0.20	0.32	0.53	1.05

Source: Authors' calculation

Under the assumption that the benefits accrued for the project periods, that is, under the assumption of unsustainable project outcome, the cost exceeds the benefits. However, since the project outcome sustains for some periods, the simulated benefit can be obtained 62 lakhs for three years, 103 lakhs for five years and 206 lakhs for 10 years. The analysis shows that the project will be beneficial if the accrued benefit sustained at least 10 years. However, it is noted that the direct beneficiary of the program may be low, but the combined benefits, sum of direct effect and spillover effect, may be high and under this circumstances, the project may seem beneficial if the outcome sustains at least five years.

5. Recommendations

Wage discrimination between male and female in informal economic activity is quite visible locally and globally. Some factors explain such discrimination while limited policy actions have been taken to wane the wage differentials. The initiatives of CARE in reducing wage gap in agriculture sector in Rangpur and Nilphamari are to be well-appreciated. Their effort of advocacy has successfully increased the wage of female agriculture day labor and the increased income has increased access to better livelihoods. The benefit-cost analysis has shown that the program will be seemed worthy if the program outcome (including the spillover effect) sustained at least five years. Nonetheless, it can be opined that the inflexible downward behavior of the wage may guarantee some level of sustainability of the program outcome. Therefore, the program could be extended to other areas and expected to yield same level of benefit and thereby enhanced the welfare of the vulnerable extreme poor households whose livelihood is dependent on agriculture. However, the extension of such initiatives is not challenge less. Contacting and counseling the landlord, the demander of agriculture labor, are not easy and it is not easy to manage them to pay higher wage. Moreover, the problem of bumper harvest paradox and natural disaster affecting agriculture are key threat to wage increase and make the increased wage unsustainable. In addition, the Cobweb phenomenon of agricultural commodity price is a common threat.

6. Conclusion

Eradication of the extreme poverty and thereby amelioration of household level food security is the key development agenda in this development era. Bangladesh over the past couple of decades has achieved significantly progress in poverty eradication. But geographic pocket specific head count rate, poverty head count in Northern region or specifically the greater Rangpur or headcount in haor or char, is high and still requires some initiatives to make the households out of extreme poverty. The economic activity of this region is mostly dependent on agricultural activity. The current study areas are located in Nilphamari and Rangpur, the very much poverty prone district of the country. The involvement of women as agricultural day labor is quite common in those two districts. Women are working hard in the field in addition to their home tasks and in some cases; they are working as like male. However, the price of their labor hours, the wage, they receive is substantially low compared to the male in every level of involvement. The major argument of such wage differential is presumed to be due to the differential in physical strength. The male argued that female are incapable to transfer heavy loaded items like rice sacks or potato sacks and thereby they are bound to do that with higher wage. In counter argument where such kind of physical strength is not required and both male and female labor are exerting the same level of effort, the wage differential argument follows that the household members mostly dependent on male and therefore, they should be paid more than the female. The wage gap due to the differences in physical strength is accepted by some of the female to some extent, but still the female argues that the gap should be minimized and gender discrimination in agriculture should be reduced for the overall household welfare.

CARE Bangladesh initiates the Pathways-SAMMOW (Stimulating Agricultural Management and Marketing Opportunities for Women) with the financial support from the Bill & Melinda Gates Foundation focusing on improving vulnerable female farmers and agriculture day laborers' productivity by empowering them to engage in equitable agriculture systems and by giving them the tools, knowledge and access they need to succeed in the agricultural sector.

Although majority of the beneficiary households have homestead, they have hardly possessed the agriculture land, own land or share cropping land. The women agriculture day labors are very poor compared to other two groups, women farmer and women agriculture input entrepreneur, which is expected. The beneficiaries have limited access to asset and are very much food vulnerable.

The baseline information tells that the average wage for female agriculture day labor was of 85 taka (\$1.09) while the average wage for male agriculture day labor was of 150 taka (\$1.92). The wage differential is around 68 taka (\$0.87), around 80 percent of wage for women agriculture day labor. This suggested that male agriculture day labor in the program areas in the baseline period got 1.77

times higher wage than the female agriculture day labor. At the end of the program period, 2014, the wage rate for male agriculture day labor has increased by around 23 percent, while that for female agriculture day labor has gone up by around 46 percent in the program village. In absolute term, on average, the wage rate for female agriculture day labor has increased by 39 taka (\$0.5). The wage gap in the pre-intervention was 65 taka (\$0.83) which reduced to 60 taka (\$0.77) in post intervention, a 7.7 percent reduction of wage differentials. The gap in terms of female wage has gone down from 76.5% to 48.4%, approximately 37 percentage points.

The women agriculture day labor in program villages had higher wage in 2011 compared to women agriculture day labor in control villages⁶. The wage differential between female agriculture day labor in program and control villages in 2011 was around 43 taka. The elimination of time effect by the double difference method shows that the net effect of the program is around 12 taka per day or 300 taka per month⁷, net program impact (DID based estimates). The before and after comparison shows that the income increased by around 975 taka per month. The increased income, first of all, enhanced their food security and other opportunities such as access to health and education facilities; enhanced their physical asset such as cows, goats, and chicken. Many of the respondents show disappointment of bad economic condition due to various risks, hazards, or even disasters despite of higher effort and the higher income gain. The women are now more vocal than earlier and they argue that although every decision of the household is made jointly, they now can play major role especially in financial decision. Outside of the house, they mostly visited around the village and adjacent to their village and mostly they do not go to other village for day laboring.

The program is successful in various indicators such as empowering the women, improving the household food security, increasing household asset base (physical and financial), and increasing better opportunity to health and education. The program has yielded almost 100 percent spillover effect to its nearest village. However, although the program has successfully improved the wage differentials in agriculture sector, the simple benefit-cost ratio suggests that the program will be of worth if the net benefit of the program sustained at least 10 years. However, the inclusion of spillover effect in calculating the total benefit yields a ratio of over 1 if the program outcome sustained at least five years.

⁶ The wage data of control village is collected through recall method.

⁷ Assumed that number of working days in a month is 25

Appendix

CARE SAMMOW PROJECT

Questionnaire

June 6, 2014

Identification

Question	Response
Date of interview	
Village/Para/Mohalla (Localize)	
Union	

Upazila	
District	
Lvvv b^i	

শাখা ১ - থানা রোস্টার

সদস্য কোড	সদস্যের নাম	থানা প্রধানের সাথে সম্পর্ক (কোড)	লিঙ্গ পুরুষ=১; মহিলা=২	বয়স (বছর)	শিক্ষাগত যোগ্যতা (কোড)	উপার্জনকারী সদস্য (হার্য=০, না=১)	প্রধান পেশা (কোড)	সরকারী সাহায্য/ ভাতা/ বৃত্তি
১								
২								
৩								
৪								
৫								
৬								
৭								

Lvvv cOav†bi mv†_ m^úK©	শিক্ষাগত যোগ্যতা (কোড)	পেশা কোড
Lvvv cOavb 0	^z†j hvq wb0	১=কৃষি দিনমজুর,
^-^vgx/ ^ix 1	me©†kl K-vm cvm1-9	২=অকৃষি দিনমজুর,
†Q†j-†g†q 2	GmGmwm/mggvb ...10	৩=কৃষি স্বনিয়োগন,
bvvZ/bvZbx 3	GBPGmwm/mggvb .11	৪=অকৃষি স্বনিয়োগন,
wcZv-gvZv/^v`v-`v`x ... 4	weG/mggvb12	৫=চাকুরি,
fvB-†evb/k`vjK-k`vwjKv 5	GgG/13	৬=সেবা,
PvPv†Zv/gvgv†Zv fvB-†evb 6	Ayi Ávb m^úbæ14	৭=গৃহিণী,
fvwZrv-fvwZRx 7	Ab`vb`15	৮=অন্যান্য (উল্লেখ করুন)
PvPv-PvPx 8		
Ab`vb` 9		

শাখা ২ - Expanded Coping Strategies Index (CSI)

S MZ 3 gv†m Ggb †Kv†bv mgq wK G†m†Q hLb Avcbvi Lvvvq †Kv†bv Lvevi wQj bv, ev Lvevi †Kbvi g†Zv h†_ó UvKv cqmv wQj bv?		bv 0 nu`v 1
২ nu`v n†j, MZ 30 w`†b Avcbvi Lvvvq †Kv†bv Lvevi wQj bv, ev Lvevi †Kbvi g†Zv h†_ó UvKv cqmv wQj bv, Zv †gvKv†ejv Kivi R†b` Avcbv cOavb cOavb Kx Kx e`e`v wb†qwQ†jb? †hgb:	৩ gv†m K†Zv Nb Nb n†qwQj? KL†bv bv 0 mβv†n 1 w`†bi †P†q Kg mgq 1 mβv†n 1-2 w`b 2 mβv†n 3 ev Z†ZvwaK w`b 3 cÖZ`n/cÖwZw`b 4	৪ †Kb DwjəwLZ e`e`v wb†qwQ†jb? †Kv†bv KvR †bB 0 Liv †gŠmyg 1 Lv` NvUwZ 2 wPwKrmv e`q 3 †hŠZzK 4 GbwRI/gnvR†bi FY cwi†kva 5

	Nb Nb evi (wUK wPý w`b)	Pvwn`v †ewk/Ab`Í AviI fv†jv Kv†Ri my†hvM 6 Lvbv RbwgWZ (Ab` †Kv†bv DcvR©bKvix †bB ev Lye †ewk gvbyl/ h†_ó DcvR©bKvix bv _vKv) 7 cÖavb DcvR©bKvix m`†m`i Ab`vb` 8				
	0	1	2	3	4	C4. Gi †KvW
a	Lvevi avi K†i wQj ev UvKv avi K†i Lvevi wK†b wQj?					0 1 2 3 4 5 6 7 8
b	Kg cQ†>`i ev Kg g~†j`i Lvevi MÖnY K†iwQj?					0 1 2 3 4 5 6 7 8
c	Lvev†ii †ejv Kwg†q wQj ev cÖwZw`b Lvevi MÖn†Yi cwigvY Kwg†q wQj?					0 1 2 3 4 5 6 7 8
d	cwiev†ii wKQz m`†m`i Lvev†ii cwigvY Kwg†q wQj, hv†Z K†i Ab`iv` ^vfvweK ev AviI †ewk †L†Z cv†i?					0 1 2 3 4 5 6 7 8

C5. GB Lvbv MZ 3 gv†m hLb Lvbvq †Kv†bv Lvevi wQj bv ev Lvevi †Kbvi g†Zv h†_ó UvKv-cqmv wQj bv Zvi R†b` Ab` †Kv†bv e`e`v wb†qwQ†jb wK? †hgb:

e`e`v mg~n:	bv 0 nu`v 1	
a AvMvg k ^{ag} wewµ ev Zv cÖ`v†bi cÖwZkÖæwZ w`†q wQ†jb	0 1	0 1 2 3 4 5 6 7 8
b AvMvg dmj/Mevw` cī wewµ ev cÖ`v†bi cÖwZkÖæwZ w`†q wQ†jb	0 1	0 1 2 3 4 5 6 7 8
c AvZ†xq, eUz-evU†ei KvQ †_†K Lvevi ev bM` A © †c†q wQ†jb	0 1	0 1 2 3 4 5 6 7 8
d Lvevi †Kbvi R†b` my`mn FY/avi K†i wQ†jb	0 1	0 1 2 3 4 5 6 7 8
f `vbxq miKv†ii Kv†Q mvnv†h`i Av†e`b K†i wQ†jb	0 1	0 1 2 3 4 5 6 7 8
h Lvevi †Kbvi R†b` wPwKrmv e`q Kwg†q w`†q wQ†jb	0 1	0 1 2 3 4 5 6 7 8
j Lvevi †Kbvi R†b` Mevw` cī I K...wlKv†R e`q Kwg†q w`†q wQ†jb	0 1	0 1 2 3 4 5 6 7 8
k Lvevi †Kbvi R†b` bM` A © †hvMvb w`†Z ^vfvwe†Ki †P†q †ewk msL`K Mevw` cī wewµ K†i w`†q wQ†jb	0 1	0 1 2 3 4 5 6 7 8
l Lvevi †Kbvi R†b` Lvbvi mǎú†i A` ^vfvweK cwigv†Y wewµ K†i w`†q wQ†jb	0 1	0 1 2 3 4 5 6 7 8
m Kv†Ri Lyu†R Ab`I P†j wM†q wQ†jb	0 1	0 1 2 3 4 5 6 7 8
n Lvevi †Kbvi R†b` A © †RvMvo Ki†Z wfÿv I Ab`vb` KvRKg© MÖnY K†i wQ†jb	0 1	0 1 2 3 4 5 6 7 8
r wbR mA†qi Ici wbf©i K†i wQ†jb	0 1	0 1 2 3 4 5 6 7 8

শাখা ৩: Major Sources of Cash Income

	Avebvi Lvbvi †KD wK (---) wnmv†e KvR K†ib? (Drm)			E1. Kviv (---) wnmv†e KvR K†ib? cÖavbZ cyiæliv 1 cÖavbZ gwnjviv 2 Df†q mgvbfv†e 3	E2. (---) wnmv†e KvR K†i eQ†i Kq gvm Avq K†ib?	E3. (---) †_†K AvbygvwbK gvwmK Avq?
		bv 0				
		nu`v1				
a	K...wl gRyi	0	1			
b	AK...wl LvZ: w`b gRyi	0	1			
c	wbR^ K...wl KvR	0	1			
d	emZ wfUvi evMvb/bvm©vix	0	1			
e	gvQ aiv	0	1			
f	`y k^wgK	0	1			
g	e`emv (iv`Ívi nKvi, †`vKvb`vwi)	0	1			
h	wbqwgZ PvKwi (miKvwi)	0	1			
i	wbqwgZ PvKwi (AvšÍRv©wZK GbwRI/GbwRI)	0	1			
j	wbqwgZ PvKwi (†emiKvwi)	0	1			
k	n`Íwkí	0	1			
l	K...wlRvZ cY` µq/weµq	0	1			
m	(cÖevm †_†K) †cÖwiZ A_©	0	1			
n	KvV/Kqjv weµq	0	1			

	cÖ†Z`KwU weµ†qi m^†Ü wR†Ám Kiæb Avebvi Lvbv wK (---) wewµ K†i _v†Kb?			E5. GB (---) wewµi Kv†R Kviv Ask MÖnY K†ib? cÖavbZ cyiæliv1 cÖavbZ gwnjviv2 Df†q mgvbfv†e ...3	E6. MZ 1 eQ†i (---) wewµ K†i AvbygvwbK K†Zv UvKv †c†q†Qb? (UvKvq)	E7. (---) Drcv`†bi DcKiY eve` AvbygvwbK K†Zv UvKv LiP n†q†Q?
		bv 0				
		nu`v 1				
a	dmj wewµ	0	1			

b	Mevw`ci wewµ (^ya, gvsm BZ`vw`)	0	1			
c	bvm©vix (mewR, dj/QvQ-cvju)	0	1			
d	exR wewµ (km`, mewR, Dw™ç`)	0	1			
e	gvQ, wPsw, cvwbi Dw™ç` BZ`vw`i Pvl	0	1			

শাখা ৪ – খানার ব্যয়

		২০১১	২০১৪
১	গড় মাসিক ব্যয়		
২	খাদ্য ব্যয়		
৩	যোগাযোগ/ পরিবহন ব্যয়		
৪	শিক্ষা ব্যয়		
৫	চিকিৎসা ব্যয়		
৬	পোশাক (বার্ষিক হিসাব করে মাসে রূপান্তর করতে হবে)		
৭	অন্যান্য ব্যয়		

Module G: Savings and Loans

	G3. F†Yi DrmwU Kx? wb†P G3 †KvW †Lyb	G5. GB FY cÖavbZ Kx Kv†R e`envi Kiv n†q†Q? (me†P†q ,iaZic~Y© 3wU ZvwjKve× Kiæb) wb†P G5a, b, c †KvW †Lyb	G6. F†Yi cwigvY (UvKvq) Rvwbbv99	G7. GB F†Yi wecix†Z Avcwb wK †Kv†bv mœú` eÜK †i†L†Qb? হ্যাঁ=0, না=1		
	G3	G5a	G5b	G5c	G6	G7
1						
2						
3						
4						
5						

G3. Source of loan (F†Yi Drm †KvW)	G5a,b,c: Loan use (Gi †KvW)		
eÜz-evÜe/AvZYxq- ^Rb.....	e`emv cÖwZôvb.....	we`vj†qi LiPvw`	†hŠZzK.....
KwgDwbwU MÖæc.....	K...wl miÄvg µq.....	†gUv†Z	Rvbvhv/`vdb/†klK
GbwRI.....	Drcv`bkxj mœú` µq ..	wPwKrmv e`qZ`
e`vsK	K...wl Kv†Ri R†b`	Lvbvi wbZ`	Avil D`P my†`
†`vKvb/e`emvqx.....	Rwg BRviv †bqv.....	cÖ†qvRbxq Pwn`v	UvKv LvUv†Z.....
gnvRb	Rwg µq	†gUv†Z	we†`k Mg†b
Ab`vb`	cı µq	evwo	Ab` FY cwi†kva
		fvov/µq/Dbœq†b.....	Ki†Z
		wkÿv e`q	Ab`vb` (wbw`©ó
		we†qi LiP.....	Kiæb)

	QUESTION	ANSWER
G13	eZ©gvb mÂ†qi cwigvY K†Zv? (wKQz bv _vK†j 0 emvb)	
G14	eZ©gv†b †Kv_vq mÂq Ki†Qb? (cÖ†hvR¨ mKj DËi †iKW© Kiæb)	evwo†Z..... 1 KwgDwbwU ms¨v/msMVb 2 eÛz-evÛe/AvZ†xq-¨ ^Rb.. 3 AvšÍR©vwZK GbwRI 4 e¨vsK/miKvwi cÖwZôvb.. 5 mgevq 6 ¨vbxq GbwRI..... 7 exgv †Kvôvbx/ms¨v 8 Ab¨vb¨ 9

Module H: Household Assets

	môú`/môú†`i aiY	H2. cwigvY	H3. AvR wewµ Kiv n†j †Kgb g~j¨ n†e UvKvq? (UvKvq gvwjKvbxvb me msL¨K môú†`i †gvU g~j¨)
	Livestock		
1	Miæ/ Ivo/মহিষ		
2	QvMj/†fov		
3	gyiwM/nuvm		
	Productive Assets		
4	wcKAvc/f¨vb/রিক্সা		
5	evB-mvB†Kj		
	HH Appliances		
6	†iwWI/K¨v†mU †cøqvi		
7	¨e`y¨wZK cvLv		
8	†gvevBj †dvb		
9	†Uwjwfk b		
10	AjsKvi (†mvbv/i/cv)/fwi/Avbv	fwi... <input type="checkbox"/> <input type="checkbox"/> Avbv <input type="checkbox"/> <input type="checkbox"/>	

Module U: Individual leadership and influence in the community

No.	Question	Response	Response options/Instructions
U1	Avewb wK Avcbvi GjvKvi AeKvVv†gv †hgb †QvU Kzqv, iv¨—vNvU, cvwb mieivn BZ¨vw¨ ¨vc†bi wm×vš— †bqvi †¶†Î ev mnvqZv Ki†Z Rbmôšy†L K_v ej†Z¨^v”Q¨¨ †eva K†ib?		bv,¨^v”Q¨¨ †eva Kwi bv n¨uv, wKš¨ LyeB Amyweav †eva Kwi n¨uv, Z†e mvgvb¨ Amyweav Av†Q..... n¨uv, †gvUvgywU¨^v”Q¨¨ †eva Kwi n¨uv, LyeB¨^v”Q¨¨ †eva Kwi.....
U2	Avewb wK miKvwi Kv†R A_ev Ab¨vb¨ Kg©m~wP†Z b¨vh¨ †eZb cÖ¨vb wbwðZ Kivi †¶†Î Rbmôšy†L K_v ej†Z¨^v”Q¨¨ †eva K†ib		

`jMZ m`m`		U4. Avcbvi GjvKvq †Kv†bv (j) Av†Q wK? bv..... 0 nu`v 1 Rvwbbv 2	U5. Avcwb wK (j) Gi GKRb mwμq m`m`? bv..... 0 nu`v 1 Rvwbbv 2	U6. GB `†j wm×vš— †bqvi ††† Avcbvi K†ZvUyKz f~wgKv Av†Q? Code 1 (†`Lyb)	U8. †Kb Avcwb GB `†ji m`m` bb? Code 2 (†`Lyb)
Group Categories					
a	K...wl/ci/grm D`cv`bKvix `j (wecYb `jmn)	0 1 2			
b	cvwb e`enviKvix `j	0 1 2			
c	eb e`enviKvix `j	0 1 2			
d	FY ev ¶z`^FY `j (MÖvg mÂq I FY`vbKvix mwgwZ, mÂq I FY mgevqmn)	0 1 2			
h	`vbxq miKvi	0 1 2			

CODE 1: U6 †Kv†bv f~wgKv bvB.....1 Lye mvgvb` wm×v†šlí †y†† f~wgKv Av†Q.....2 wKQz wKQz wm×v†šlí †y†† f~wgKv Av†Q.....3 †ewki fvM wm×v†šlí †y†† f~wgKv Av†Q.....4 me wm×v†šlí †y†† f~wgKv Av†Q ..5	CODE 2: U8 AvMÖnx bv..... 1 mgq bvB..... 2 m`m` wd †RvMvo Kivi mvg_ bvB/†RvMvo Ki†Z cvwi bvB..... 3 wbqwgZ Puv`v †RvMvo Kivi mvg_©` bvB/†RvMvo Ki†Z cvwi bvB..... 4 `jxq mfv`j myweavRbK `v†b bv 5
---	--

Module V. Decision making

mvÿvrKvi MÖnYKvix: v2 cÖkæ wR†Ám Kivi Av†M v1 cÖkæ me K`vUvMwi†Z wR†Ám Kiæb LvbvwU †Kv†bv GKwU KvR bv Ki†j †mB Kv†Ri R†b` Öwm×všÍ †bqv nq wbÖ †KvW wjLyb Ges cieZ©x Kv†R hvb		V1. (---) Gi †y†† Lvbvq hLb †Kv†bv wm×všÍ †bqv nq ZLb mvaviYZ †K wm×všÍ †bq? †KvW 1 †`Lyb	V3b. (---) Gi †y†† wm×všÍ MÖn†Y Avcbvi Ask bv †bqvi KviY Kx wQj? †KvW 3 †`Lyb	V4. Avcwb PvB†j (---) wel†q K†ZvUzKz ch©šÍ wb†Ri wm×všÍ wb†R wb†Z cvi†eb? †KvW 4 †`Lyb
g	Avcbvi wb†Ri †eZb/gRywii wewbg†q KvR/PvKwi?			
h	Lvbvi cÖavb LiP (evwoi R†b` eo †Kv†bv wRwbm †hgb: wiwd«R`v†iUi)?			
i	Lvbvi †QvU LiP (†hgb:			

mvjvrKvi MÖnYKvix: v2 cÖkæ wRġÁm Kivi AvġM v1 cÖkæ me KġvUvMwiġZ wRġÁm Kiæb LvbvwU ġKvġbv GKwU KvR bv Kiġj ġmB KvġRi Rġbġ Öwmġvšġ ġbqv nq wbÖ ġKvW wjLyb Ges cieZ©x KvġR hvb	V1. (---) Gi ġġġġ Lvbvq hLb ġKvġbv wmġvšġ ġbqv nq ZLb mvaviYZ ġK wmġvšġ ġbq? ġKvW 1 ġLyb	V3b. (---) Gi ġġġġ wmġvšġ MÖnġY Avcbvi Ask bv ġbqvi KviY Kx wQj? ġKvW 3 ġLyb	V4. Avcbv Pvbġj (---) welġq KġZvUzKz ch©šġ wbġRi wmġvšġ wbġR wbġZ cviġeb? ġKvW 4 ġLyb
	cÖwZwġbi Lvevi ev M,,nġvwji Abġvbġ cÖġqvRb)?		
k	Avcbvi wbġRi Rġbġ Rvgv-Kvco mq/ġKbv?		
l	GjvKvi evwnġi ġKvġbv KwgDwbwU ev GbwRli wgvUsġq Ask MÖnY?		
m	Avcbvi DcvR©ġbi A_© eġq?		
n	Avcbvi ġvgx/ġxi DcvR©ġbi A_© eġq?		
q	ġwiġZ mšġvb ġbqv ev Avi ġKvġbv mšġvb bv ġbqvi Rġbġ cwievi cwiKġbvi (RbŸ wbqšġY) cġwZ eġenvi Kiv nġe wK nġe bv?		

ġKvW 1: v1 wmġvšġ MÖnY	ġKvW 3: v3b AskMÖnYi bv Kivi KviY	ġKvW 4: v4 wmġvšġ MÖnY
cÖavbZ cyiæl ev ġvgx..... 1	wKQz bv0	ġKvġbv mgqB bv..... 0
cÖavbZ gwnjv ev ġxi..... 2	Avwg DcvġZ wQjvg bv.....1	gvġS gġaġ (25% Gi ġġġq Kg mgġq)... 1
ġvgx Ges ġxi ġhš_fvġe..... 3	ġewk wKQz RvbZvg bv2	cÖvqB (50% Gi gġZv mgġq) 2
Lvbvi Abġ ġKD..... 4	cwiwġwZi KviġY3	ġewki fvM mgġq (50% Gi ġġġq ġewk mgġq)..... 3
Lvbvi Abġ Kvil mvġ_ ġhš_fvġe..... 5	Avwg mgmġvq coZvg4	me mgq 4
Lvbvi evwnġii Abġ Kvil mvġ_ ġhš_fvġe..... 6	Abġiv Avgvi mġúġK© Lvivc fveġe5	
Lvbvi evwnġi Abġ ġKD..... 7	Avgvi ġvgx AvgvġK evav	
wmġvšġ ġbqv nq bv 8	wġqġQ6	
cÖġhvRġ bq 9	GUvB mwVK7	
	AvgvġK wRġÁm Kiv nq wb8	

Module W. Mobility

	(---) ġhġZ AvcbvġK wK Avcbvi ġvgxi KvQ ġġK AbygwZ wbġZ nq	nuġv, me mgq	nuġv, ġewki fvM mgq	nuġv, wKšġ gvġS gġaġ	bv, KLbI wbġZ nq bv	hvq wb	cÖġhvRġ bq
		1	2	3	4	5	6
W1	evRvġi						
W5	MÖvgġ MY-wgvUsġq						
W8	DcvR©bgġjK Kg©Kvġġ Ask wbġZ						

Module X. Political Participation

No.	Question	Response
X1	†kl [~] vbxq miKvi wbe©vP†b Avcbw †fvU w`†q†Qb wK?	bv.....0 nu`v1
X2	MZ R [~] vbxq miKvi wbe©vP†b Avcbvi Kv†K †fvU †`qv DwPZ G wm×všÍ †K wb†qwQj?	wb†R.....1 Avgvi [~] ^vgx/` ζx.....2 MÖvg [~] cÖavb/gvZeŸi3 ivR%obwZK cvwU©.....4 Ab`vb`5 (wbw`©ó Kiæb)
X3	Avcbvi †fvU bv †`qvi cÖavb KviY Kx?	[~] ^vgxi mv†_ gZcv_©K [~]1 G e`vcv†i RvbZvg bv2 †fvUvi AvBwW KvW© wQj bv3 mg†qi Afve4 gwnjv†`i mv†_ m ^ó , ³ bq e†j ..5 Ab`vb`6 (wbw`©ó Kiæb)
X4	MZ 12 gv†m Avcbw wK Avcbvi gZvgZ cvewjK wgwUs†q e ^{~3} K†i†Qb? (MÖvg mAq I FY mwgwZ ev Drcv`K `†ji wbqwgZ wgwUs Qvov)	bv.....0 nu`v1

Module Y. Perceptions on Gender Roles

No.	Question	Response
Y1	Avgvi MÖv†gi †jvKRb mvaviYZt g†b K†i †h, Lvbvi ,iæZic~Y© wm×všÍmg~n cyiæ†li †bqv DwPZ	bv.....0 nu`v1
Y2	e ^{~3} MZfv†e Avwg g†b Kwi †h, Lvbvi †ewkifvM wm×všÍ cyiæ†li †bqv DwPZ	bv.....0 nu`v1
Y3	Avgvi MÖv†gi †jvKRb mvaviYZ g†b K†i †h, cyiæl Ges gwnjv†`i KvR Avjv`v Avjv`v Ges G†K Ac†ii KvR KL†bvB Kiv DwPZ bq	bv.....0 nu`v1
Y4	e ^{~3} MZfv†e Avwg g†b Kwi †h, cyiæl Ges gwnjv†`i KvR Avjv`v Avjv`v Ges G†K Ac†ii KvR KL†bvB Kiv DwPZ bq	bv.....0 nu`v1
Y5	Avgvi MÖv†gi †jvKRb mvaviYZ g†b K†i †h, hw` †Kv†bv gwnjv N†ii evwn†i KvR K†i Zvn†j Zvi [~] ^vgxi DwPZ ev`Pv†`i †`Lvıbv I Lvbvi KvR Kiv	bv.....0 nu`v1
Y6	e ^{~3} MZfv†e Avwg g†b Kwi †h, hw` †Kv†bv gwnjv N†ii evwn†i KvR K†i Zvn†j Zvi [~] ^vgxi DwPZ ev`Pv†`i †`Lvıbv I Lvbvi KvR Kiv	bv.....0 nu`v1
Y7	Avgvi MÖv†gi †jvKRb mvaviYZ g†b K†i †h, [~] ^vgxi Aemi mgq [~] ζx Ges ev`Pv†`i mv†_ KvUv†bv DwPZ	bv.....0 nu`v1
Y8	Avwg e ^{~3} MZfv†e g†b Kwi †h, [~] ^vgxi Aemi mgq [~] ζx Ges ev`Pv†`i mv†_ KvUv†bv DwPZ	bv.....0 nu`v1
Y9	GKRb gwnjvi me†P†q ,iæZic~Y© KvR n†jv msmvi I Nievwo †`Lvıbv Kiv Ges Zvi cwiev†ii m`m`†`i R†b`	bv.....0

	Lvevi ^Zwi Kiv	nu`v.....1
Y10	^-^vgx Ges -_xi GK^I wm×všI †bqv DwPZ Kx ai^bi Rb^wbqš_Y c×wZ Zviv e`envi Ki^e	bv.....0 nu`v.....1
Y11	cyiæ^li Zvi wb^Ri -_xi mv^_ fv^jv m^úK© _vK^jI Ab` bvixi m½ cO^qvRb nq	bv.....0 nu`v.....1
Y12	wKQz wKQz mgq gwnjviv Ggb KvR K^i †h, Zv^`i^K gviai Kivi cO^qvRb nq	bv.....0 nu`v.....1
Y13	ev^Pv^K LvIqv^bv Ges †Mvmj Kiv^bv gv^qi `vwqZj	bv.....0 nu`v.....1
Y14	Lvbvq wm×v^šI e`vev^i cyiæ^li K_vB †kl K_v nIqv DwPZ	bv.....0 nu`v.....1
Y15	cwiev^ii w^-wZkxjZv eRvq ivLvi R^b` GKRB gwnjvi Aek`B wbh^vZb mn` Kiv DwPZ	bv.....0 nu`v.....1
Y16	ev^Pv †bqvi †y^I^-^vgx-_-xi GK^I wm×všI †bqv DwPZ	bv.....0 nu`v.....1

