

**Regenerative Agriculture and
Sustainable Livelihood for
Vulnerable Ecosystems
(RESOLVE)**

**Baseline Survey Report
Gaibandha, Bangladesh**

2012

Area: Gaibandha, Bangladesh

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The report titled “Baseline Survey on Regenerative Agriculture and Sustainable Livelihood for Vulnerable Ecosystems (RESOLVE)” is an assessment of present situation of living condition of people of different village of Sundorjong Upazila. **This report is an output of RESOLVE project, implemented by GKS, GUK, SDS and Unnayan Onneshan with financial support from Oxfam Novib.** The report is prepared by Unnayan Onneshan Social policy unit with the assistance from GUK and Oxfam Novib. We further thank A. Z. M. Saleh and Shahid Md. Adnan of Unnayan Onneshan for editing language and formatting the report.



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1. INTRODUCTION

Climate change has a negative impact on economy of Bangladesh by increasing severity and frequency of extreme weather events such as cyclone, floods, hailstorms, droughts and salinity intrusion. Geographically Bangladesh is a floodplain situated in the confrontation of three mighty rivers namely Padma, Jamuna and Meghna. The floodplain region inundated every year and the local systems are influenced by periodic flooding. In spite of people's sufferings due to the impact of these floods, they make the cultivable lands fertile through siltation and thereby shape the life and economy of those areas. However, with changing climate the scenarios are being modified with change in time. Unpredictable extent of floods, increasing river bank erosion, early/late drought in dry season, increased salinity as a result of salinity intrusion, downing ground water level are the consequences of climate change. Various contextual analysis states that climate change will undermine efforts to ensure the food security unless urgent actions are taken.

Under the 'business as usual' approach case studies across the world confirmed that is not sufficient to support vulnerable rural communities in addressing unprecedented climate change related food security challenges. So, question arises whether to find any innovative approach which could mutually ensure food security while decreasing vulnerabilities to impacts cause by climate change. To supplement the answer researchers and development organization throughout the world trying to develop approaches which can support adaptation process and ensure food security towards a sustainable way. RESOLVE (Regenerative Agriculture and Sustainable Livelihoods for Vulnerable Ecosystems) is such an initiative which applied ecosystem approach to meet the food security challenge and finding way to reduce climate induced vulnerabilities. The project applied an integrated approach with strong cross-cutting concerns rather than segregating action which includes field interventions, capacity building and advocacy initiatives. The project was designed in such a way that it will improve climate resilience to current climate vulnerability and future impacts on food insecure households by developing and supporting cost effective measures at both household community and local level.

The project, RESOLVE has been designed to achieve the goal of making communities more resilient to climate shocks while ensuring food security through a combination of intervention strategies: direct poverty reduction through practicing adaptive agriculture techniques and technologies; diversifying livelihoods (on-farm, off-farm and non-farm) of the rural poor; working with grassroots and civil society; conducting research and evidenced-based lobby and advocacy at various strategic levels (national, regional and global); managing knowledge and innovative techniques; and maintaining and/or creating linkages to foster cross learning among different stakeholders.

RESOLVE project includes two consecutive phases for duration of five years. The models were replicated and scaled up in different locations of Sirajgonj, Gaibandha and Shariatpur in the pilot phase (Phase-1). The year of implementing pilot phase was 2011 and 2012. The pilot phase will follow another two programme phases of 3 years each; phase 1 (2013-2015) and phase 2 (2016-2018) in the same agro-ecological zones (AEZ). Since a graduation cycle of a household generally

takes 3-5 years, therefore each new phase will start by replication and/or scaling up keeping continuation with existing beneficiaries through a phase out strategy.

The project was designed by predicting livelihood vulnerabilities at that time and analyzes the information to predict future impacts on livelihood for welfare of vulnerable communities. For that reason actions were taken locally in the ‘climate hotspots’ where not only people's vulnerability will be compounded but also their livelihoods will be addressed which are currently being eroded due to climate change impacts. Using agro-ecological zoning mapping geographically exposed changes and vulnerabilities were analyzed and people’s capacity to adapt with those changes were estimated using poverty map.

The local partners were selected (Non-Government Organizations) considering their specialization on local context in the field of adaptation and livelihood promotion. Based on some specifications regarding climate change adaption and livelihood promotion, the project was implemented by Gana Unnayan Kendra (GUK) in Gaibandha, Gono Kalyan Sangstha (GKS) in Sirajgonj, and Shariatpur Development Society (SDS) in Shariatpur. Unnayan Onneshan has been employing as technical partner for supporting the implementing organizations.

It may not able to undertake a decision or valuable output without having a clear picture of socio-ecological context the project areas and intervention strategies. In this regard a baseline survey is a prerequisite for better decision making. Moreover, through baseline survey accountability in activities and transparency could be measured. The existing socio-economic condition of the right holders could also be explored and after a project cycle these information will help to measure their progress towards moving from existing Condition A to expected Condition B; and also the effectiveness of the intervention strategies. In these circumstances, baseline survey plays important role for monitoring and evaluation within a reference point. In this regard, first baseline survey was prepared last year, after implementation of one year of this project second baseline survey report is now prepared.

As a starting point of RESOLVE activity, a baseline survey was conducted in Sundargonj Upazila in Gaibandha, where GUK implemented RESOLVE activities for last one year. Overall goal of the study was to prepare a socio-economic profile of right holders based on existing situation. Moreover, along with 450 right holders another 150 households were also surveyed in order to prepare a reference point to measure the progress of the right holders compare to those who are out of RESOLVE intervention.

2. THE APPROACH AND METHODS OF THE STUDY

For conducting the baseline survey, the study followed multidisciplinary approaches. A semi structured questionnaire was developed considering socio-economic condition of the area based upon secondary literature and consultation with key stakeholders. The questionnaire then send to the field level for testing its performance whether the questionnaire is comprehensive enough to collect required data or need any inclusion or exclusion. Field data collectors suggested a number of observations from field testing and the questionnaire was finalized by taking their suggestions. As reference point, Other than household survey, the study also used Bangladesh Centre for Advanced Studies (BCAS) feasibility study on the RESOLVE working areas. Couple of Focus Group Discussions (FGDs) were arranged to know local people's awareness regarding climate change impacts and their attempts to confront those. The study surveyed 600 households by using the questionnaire, out of which 450 households are right holders (in RESOLVE the target group are termed as right holders based on the understanding that they are climate victim but not responsible for causing climate change, therefore, development towards a prosperous life is their right) and rest 150 household taken from outside RESOLVE intervention.

2.1 Selection of Project area and Right Holders

The proposed project selects the Tistha and Brahmaputra river basin and riverine char lands of the northern portion of Bangladesh, which mainly corresponds to Gaibandha district. RESOLVE (a two year pilot project) will be implemented in Khapachia and Shreepur union of Sundargonj Upazila, Gaibandha district. These unions have been selected due their widespread vulnerability from climate related disasters such as flood, river erosion, drought, dense fog, cold wave etc. Moreover, most of the people of these unions are engaged in climate sensitive sectors like agriculture and fishing; and belongs to two distinct agro-ecological zones namely AEZ 2(whole) and AEZ 7 (partly). Different climate change impacts impart differently to the crop seasons. For instance, Kharif season is mostly affected by floods; whereas moisture stress, drought and irregular rainfall are major threat for Robi season. Moreover, flood destroys lives and livelihoods apart from damaging crops.

Table 1: Climate change impacts and constraints of the target group

Erratic Behaviour of Rainfall					
Agriculture Crop/ Animal	Climate variability	Influence to Natural event	Problems	Perceived needs	Constraints of the target group
Aus (April-May)	Erratic Behaviour of Rainfall	Prolonged hot and dry season	-Seedling date change -Late Transplantation -Pest attack increase -Poor crop growth	-Require information about suitable Adaptation Technology for farmer which will easily understandable for them.	- Appropriate Adaptation information & technology is not yet take place in community level
Aus	Less / heavy	Flood	-Submerged seed bed -Late Transplantation - Poor crop -Even season loss		- Target group has no easy access in sub district agriculture extension office and there are not available enough adaptation information
Boro rice	Excess	Sudden Flood	-Submerged Crop field		

	rainfall		& crop damage		
Aman rice (T-Aman)	Excess rainfall	Flood	-Submerged seed bed -Late Transplantation - Poor crop/ plants -Even season loss		
T- Aman	Less rain/ late rain	Season dry	-Late Transplantation/ crop establishment - Poor crop/ plant growth		
Livestock	Erratic Behaviour on Rainfall Less / heavy	Prolonged hot and dry season/ Flood	- Freshwater scarcity - Disease infestation - Damage grassland - Fodder scarcity - Lack of safe shelter	- Demanding of financial support for reform and develop surface water sources - Demanding regular vaccination chain for livestock - Demanding technology for utilize surface water - Scope to land use change for grass - Demanding safe shelter for livestock shelter	- Lack of financial opportunity from currently working rural finance institutions - Inadequate initiatives government department - Vaccination access is not easy and faraway from rural village - Lack of financial opportunity from currently working rural finance institutions - Lack of grass planting technologies & information - Lack of financial opportunity from currently working rural finance institutions

Temperature fluctuations

Agriculture Crop/ Animal	Climate variability	Influence to Natural event	Problems	Perceived needs	Constraints of the target group
In Early AUS (May-June)	High Temperature	Prolong hot and dry season	-Injured plants at seed bed & in the field (Occasional high temperature)	-Require information about suitable Adaptation Technology for farmer which will easily understandable for them.	- Appropriate Adaptation information & technology is not yet take place in community level
Potato (Nov-Dec)	High (>20°C) Temperature	Short winter season	-Reduce the Tube number		
Wheat	High (>20-25°C) Temperature	Short winter season	-Increase Sterility -Reduce grain size - Reduce production		
Boro rice	Low Temperature	Cold	-Late seedling -Poor plantation growth		
Livestock	High / Low	Prolong hot and dry	- hampering flowering and	- Demanding to utilize surface	- No information & technology provide by

	Temperature	season/ cold spell	fruiting grass consequence fodder scarcity - Hamper reproductive behaviour	water technology - Health services for reproductive health & behaviour of livestock	current agriculture & development agencies - No information & technology provide by current agriculture & development agencies
Foggy weather					
Agriculture Crop/ Animal	Climate variability	Influence to Natural event	Problems	Perceived need	Constraints of the target group
Potato	Low Temperature for short duration	Cold spell	-Disease scoring -Reduce production	-Require information about suitable Adaptation Technology for farmer which will easily understandable for them.	- Appropriate Adaptation information & technology is not yet take place in community level
Mango	Low Temperature for short duration	Cold spell	-Increase pest & Disease -Reduce production		
Livestock	Low Temperature for short duration	Cold spell	-Disease -fodder scarcity	- Health services	- Vaccination access is not easy and faraway from rural village

Socio- Economic Impacts of Climate Change					
Sectors	Climate variability	Influence to Natural event	Problems	Perceived needs	Constraints of the target group
Livelihoods	Low Temperature for short duration /High	Cold spell/ Prolong hot and dry season	-Hard to work in the open field	Alternation IGA/ Sustainable livelihoods	-No information & technology -Not enough skill -Income opportunity limited -Need diversified livelihood options
	Erratic Behaviour on Rainfall Less / heavy	Prolonged hot and dry season/ Flood	-Hard to work in the open field	Alternation IGA/ Sustainable livelihoods	-No information & technology -Not enough skill -Need diversified livelihood options
Health	Low Temperature for short duration /High	Cold spell/ Prolong hot and dry season	-Cold related Disease -Diarrhoea	-Health service -Insurance -Health & Hygiene awareness	- No information & technology - Not enough skill - Economic poverty
	Erratic Behaviour on Rainfall Less /	Prolonged hot and dry season/ Flood	-Heat stroke -Diarrhoea	-Health service -Insurance -Health & Hygiene awareness	- No information & technology - Not enough

	heavy				<ul style="list-style-type: none"> - skill - Economic poverty -
Community	Low Temperature for short duration /High	Cold spell/ Prolong hot and dry season	-Asset lose -Increase poverty - Reduce Resilience to disaster	-Need appropriate adaptation technology -Need diversified livelihood options	<ul style="list-style-type: none"> - No information & technology - Not enough skill - Economic poverty
	Erratic Behaviour on Rainfall Less / heavy	Prolonged hot and dry season/ Flood	-Asset lose -Displaced -Social conflict -Increase poverty - Reduce Resilience to disaster	-Need appropriate adaptation technology -Need diversified livelihood options	<ul style="list-style-type: none"> - No information & technology - Not enough skill -Economic poverty

2.2 Secondary Data

Secondary data on population, households etc. of villages under the Sundargonj upazila have been obtained from the published documents of Bangladesh Bureau of Statistics (BBS). The census report of 1991 and 2001, the Household Expenditure Survey (2007) as well as other relevant documents have been used to gather information on physical aspects, natural resources, agriculture and livestock, economic condition etc. from the Bangladesh District Gazetteers.

2.3 RESOLVE Villages

To implement RESOLVE, different villages under Sudorgonj upazila of Gaibandha District have been selected purposively considering their grave vulnerability to climate change and higher poverty of people. Total 600 households were surveyed in the baseline study, out of which 450 households are covered under RESOLVE and rest 150 households, who are not intervened by RESOLVE and will be used as reference point to measure the progress of the right holders compare to them.

2.4 Geographic and demographic profile of Sundorjong Upazila

Sundarganj Upazila (Gaibandha district) with an area of 426.52 sq. km, is bounded by Pirgachha, Ulipur and Chilmari upazilas on the north, Gaibandha Sadar and Sadullapur upazilas on the south, Chilmari and Char Rajibpur upazilas on the east, Pirgachha, Mithapukur and Sadullapur upazilas on the west. Main rivers are Tista, Brahmaputra and Ghaghat. Kalsar Beel, Kumlia Beel, Nalbari Beel and Haldi Doba Beel are also located in this area.



Wikipedia, 19 September, 2012.

Sundarganj consists of two mouzas. The town became a municipality in 2003. The area of the town is 5 sq. km. It has a population of 9940; of which 51.84 percent is male 48.16 percent is female; population density per sq km is 1988. Literacy rate among the town people is 34.3 percent. Administration Sundarganj thana was established in 1875 and became an upazila 1983 consisting 15 union parishads, 110 mouzas and 178 villages.

Archaeological heritage and relics remnants of the house of the Bamandanga Zamindar and Dhakuabari Jami Mosque at Dharmapur, Marks of War of Liberation Mass grave 1 (eastside of the Upazila Administrative Building).

The total number of population is 360676 with 51.17 percent male, 49.83 percent female. 89.99 percent of the total population is Muslims, 9.30 percent is Hindu and 0.71 percent is devoted to other religions. There are 481 mosques, 69 temples and one sacred place considerable as religious institutions.

2.4.1 Literacy and educational institutions

Average literacy rate of the area is 24.1 percent; among which 31.9 percent are male and 16.5 percent are female. The area has 12 colleges, 66 secondary schools, 48 madrasas, 140 government primary schools, 79 non-government primary schools, 9 community schools and 37 satellite schools. Noted educational institutions of the region include Haripur BSM Government Primary School (1814), Khamar Moniram Government Primary School (1910), Belka MC High School (1918), Bamandanga MN High School (1917), Shibram Adarsha Government Primary School. Among the cultural organisations, the area possesses four cinema halls, 35 clubs, five libraries, 14 theatre groups and one children's organisation.

2.4.2 Communication facilities

Forty-six km of the total road of the area is carpeted while three km are semi carpeted 650 km road are still muddy. The area has eight km of railways and eight nautical miles of waterways. Traditional transports include Palanquin, horse carriage and bullock cart. These means of transport are either extinct or nearly to be extinct. Hats and bazars are 31, most noted of which are Mirganj, Shovaganj, Panchpir and Kathgara; fair 1 (Shovaganj Mela). Main exports Jute, onion, garlic. NGO activities operationally important NGOs are BRAC, ASA, CARE, Swabalambi Sangstha, Swanirvar Bangladesh, Muktir Path, Sonar Bangla, Adarsha Janakalyan Uddag. Health centres Upazila health complex 1, family planning centre 8, satellite clinic 7 and community clinic 55.

3. DEMOGRAPHIC FEATURES OF RESOLVE VILLAGES

Among 450 households of right holders 0.2 percent is male respondent and 99.8 percent are female respondents. Here within 450 households 413 male headed families and 37 female headed families. On the other hand among 150 households 100 percent respondents are female. Within our conducted households 88 percent households head is male and 12 percent is female.

Table 2: Total Members of the Households

Total Members of the Right holder Group				Total Member of the Uncontrolled Group			
Total Member of Household	Frequency	Total members	Valid Percent	Total member of households	Frequency	Total	Valid Percent
1	13	13	2.9	1	12	12	7.9
2	48	96	10.7	2	18	36	12.0
3	85	255	18.9	3	31	93	20.7
4	119	476	26.4	4	33	132	22.0
5	84	420	18.7	5	28	140	18.7
6	68	408	15.1	6	17	102	11.3
7	23	161	5.1	7	9	63	6.0
8	04	32	0.9	8	1	8	0.7
9	04	36	0.9	9	1	9	0.7
11	01	11	0.2	Total	150	594	100.0
12	01	12	0.2				
Total	450	1920	100.0				

Total population size of the right holders' family is 1920; out of which 50.92 percent is male 49.08 percent is female. In case of family composition; 2.9 percent households has only one family member, 10.7 percent has two, 18.9 percent has three, 26.4 percent households has four family members, 18.7 percent households has five, 15.1 percent has six, 5.1 percent households has seven family members, 0.9 percent households has eight family members, 0.9 percent has nine, 0.2 percent has eleven and 0.2 percent has twelve family members.

However, baseline survey revealed that total 594 family members belongs to 150 uncontrolled households, within which 7.9 percent has only one member, 12 percent has two, 20.7 percent has three family members, 22 percent households has four family members, 18.7 percent households has five family members, 11.3 percent households has six, 6 percent has seven family members, 0.7 percent households has eight family members and 0.7 percent households has nine family members.

Table 3: Distribution of family members by age and sex of the right holders

Household members by age	Members by sex	Ratio of male and Female	Total number	Percentage By sex	Total percentage	
Number of members between age 0-5	Number of male members between age 0-5	138	266	7.47	14.40	50.92 percent Male member
	Number of female members between age 0-5	128		6.93		
Number of members between age 6-14	Number of male members between age 6-14	237	445	12.82	24.08	
	Number of female members between age 6-14	208		11.26		
Number of members between age 15-59	Number of male members between age 15-59	527	1067	28.52	57.74	49.08 percent Female member
	Number of female members between age 15-59	540		29.22		
Number of members age 60+ and above	Number of male members age 60+ and above	39	70	2.11	3.78	
	Number of female members age 60+ and above	31		1.67		
Total		1848	1848	100	100	

It has been found from the survey that in right holder's group 7.47 percent of family members are the male members between ages 0-5 years and 6.93 percent of family members are the female members between ages 0-5 years. 12.82 percent of family members are the male members between ages 6-14 years and 11.26 percent of family members are the female members between ages 6-14 years. 28.52 percent of family members are the male members between ages 15-59 years and 29.22 percent of family members are the female members between ages 15-59 years. 2.11 percent of family members are the male members more than 60 years and 1.67 percent of family members are the female members more than 60 years. More than half of all family members (57.74 percent) are between ages 15-59 years.

Table 4: Distribution of family members by age and sex of uncontrolled group

Household members by age	Members by sex	Ratio of male and Female	Total number	Percentage By sex	Total percentage	
Number of members between age 0-5	Number of male members between age 0-5	28	71	5.41	13.71	49.62 percent male member
	Number of female members between age 0-5	43		8.30		
Number of members between age 6-14	Number of male members between age 6-14	61	113	11.78	21.82	
	Number of female members between age 6-14	52		10.04		
Number of members between age 15-59	Number of male members between age 15-59	154	300	29.73	57.92	50.38 percent
	Number of female members between age 15-59	146		28.19		
Number of	Number of male members	14		2.70		

members age 60+ and above	age 60+ and above	34	6.55	Female Member
	Number of female members age 60+ and above	20	3.85	
Total		518	100	100

It has been found from the survey that in uncontrolled group 5.41 percent of family members are the male members between ages 0-5 years and 8.30 percent of family members are the female members between ages 0-5 years. 11.78 percent of family members are the male members between ages 6-14 years and 10.04 percent of family members are the female members between ages 6-14 years. 29.73 percent of family members are the male members between ages 15-59 years and 28.19 percent of family members are the female members between ages 15-59 years. 2.70 percent of family members are the male members more than 60 years and 3.85 percent of family members are the female members more than 60 years. More than half of all family members (57.92 percent) are between ages 15-59 years.

Table 5: Total Female member of the right holders

Number of female members	Frequency	Valid Percent
1	167	37.1
2	167	37.1
3	77	17.1
4	32	7.2
5	5	1.1
6	1	0.2
8	1	0.2
Total	450	100.0

In case of number of female member of right holders here from the study we see that there are 899 female members. Within 450 households, 37.1 percent households has one female member, 37.1 percent households has two female members, 17.1 percent households has three female members, 7.2 percent households has four female members and 1.1 percent households have 5 female members, 0.2 households has 6 female members and 0.2

percent households has 8 female members. In case of uncontrolled households here we see that 44.7 percent households has only one female member, 31.3 percent households has two female member, 16 percent households has three female members, 5.3 percent households has four female members, 2 percent households has five female member and 0.7 percent households have 6 female members. Here we see that within 150 households there are 286 female members.

4. OCCUPATIONAL STRUCTURE

4.1 Primary Occupation

From the baseline survey; it has been found that 24 percent household heads of right holder's primary occupation is agriculture, 53.3 percent is wage labourer, 3.3 percent is small businessman, 2.2 percent does fishing, 1.6 percent is housewife, 4.2 percent is rickshaw puller, 3.1 percent is van puller, 0.2 percent is kobiraj, 1.1 percent is mason and 6.9 percent is engaged in other activities as their main occupation.

Table 6: Distribution of Primary occupation

Distribution of Primary occupation of the controlled households			Distribution of Primary occupation of Uncontrolled Households		
Controlled Households	Frequency	Valid Percent	Uncontrolled Households	Frequency	Valid Percent
Farmer	108	24.0	Farmer	28	18.7
Labor	240	53.3	Labor	93	62.0
Small Business	15	3.3	Small Business	2	1.3
Fishermen	10	2.2	Housewife	2	1.3
Housewife	7	1.6	Rickshaw puller	4	2.7
Rickshaw puller	19	4.2	Van puller	3	2.0
Van puller	14	3.1	Mason	4	2.7
Kabiraj	1	0.2	Others	14	9.3
Mason	5	1.1	Total	150	100
Others	31	6.9			
Total	450	100			

On the other hand, among the uncontrolled group; 18.7 percent households was found to be engaged in agriculture, 62 percent households is labourer, 1.3 percent is small businessman, 1.3 percent is Housewife, 2.7 percent is rickshaw puller, 2 percent is van puller, 2.7 percent Mason and 12 percent household is engaged in other activities.

4.2 Secondary Occupation

Majority of the right holders are only engaged in one occupation. However, some of the right holders change their occupation with the changing of seasonality. From the survey it is found that 4.4 percent right holders use agriculture as their secondary occupation and 10.7 percent become day labourers based on seasonality, particularly in lean period (Table 7).

Table 7: Distribution of secondary occupation of right holders

Secondary Occupation	Frequency	Valid Percent
Non applicable	363	80.7
Farmer	20	4.4
Labor	46	10.2
Small Business	1	0.2
Fishermen	4	0.9
House Wife	3	0.7
Service Holder	1	0.2
Rickshaw Puller	6	1.3
Van puller	2	0.4
Others	4	0.9
Total	450	100.0

In case of the uncontrolled group, 88 percent households found having a single occupation and 2.7 percent is found to have agriculture as their second occupation and 5.3 percent is found as day labour as a second occupation to bear their family expenses based on seasonality.

5. EDUCATION

6.

Table 8: Distribution of family members' education according to age and sex within right holders group

Composition of educational qualification by age	Educational qualification by age and sex	Percent By sex	Total percentage
Number of members who are illiterate, age above 15	Number of male members who are illiterate, age above 15	20.25	30.59
	Number of female members who are illiterate, age above 15	10.34	
Number of members who can only sign, age above 15	Number of male members who can only sign, age above 15	12.55	26.73
	Number of female members who can only sign, age above 15	14.18	
Number of members who can only write & read, age above 15	Number of male members who can only write & read, age above 15	4.98	10.82
	Number of female members who can only write & read, age above 15	5.84	
Number of members who have education below class 5	Number of male members who have education below class 5	12.01	22.72
	Number of female members who have education below class 5	10.71	
Number of members who have education between class 5 and class 10	Number of male members who have education between class 5 and class 10	3.41	7.52
	Number of female members who have education between class 5 and class 10	4.11	
Number of members who have education SSC and above	Number of male members who have education SSC and above	1.46	1.62
	Number of female members who have education SSC and above	0.16	
Total		100.00	100.00

Within the right holders, from this baseline survey, it has been found that 30.59 percent of family members are illiterate (age above 15) in which 20.25 percent members are male and 10.34 percent members are female. So it has been observed that rate of illiteracy is higher for male then female respondents. 26.73 percent of family members can only sign in which 12.55 percent are male and 14.18 percent are female. 10.82 percent of family members can only read and write in which 4.98 percent are male and 5.84 percent are female. In addition, 22.72 percent of family members have education below class five in which 12.01 percent are male and 10.71 percent are female. 7.52 percent of family members have education between class 5 to class 10 in which 3.41 percent is male and 4.11 percent is female. Only 1.62 percent of all family members have education Secondary School Certificate (SSC) and above in which 1.46 percent are male and 0.16 percent are female. The rate of higher education is higher for male then female because of higher rate of female student dropout.

Table 9: Distribution of family members' education according to age and sex within uncontrolled group

Composition of educational qualification by age	Educational qualification by age and sex	Percent By sex	Total percentage
Number of members who are illiterate, age above 15	Number of male members who are illiterate, age above 15	22.49	31.28

	Number of female members who are illiterate, age above 15	8.79	
Number of members who can only sign, age above 15	Number of male members who can only sign, age above 15	13.13	28.96
	Number of female members who can only sign, age above 15	15.83	
Number of members who can only write & read, age above 15	Number of male members who can only write & read, age above 15	4.25	8.30
	Number of female members who can only write & read, age above 15	4.05	
Number of members who have education below class 5	Number of male members who have education below class 5	11.00	22.39
	Number of female members who have education below class 5	11.39	
Number of members who have education between class 5 and class 10	Number of male members who have education between class 5 and class 10	3.86	7.91
	Number of female members who have education between class 5 and class 10	4.05	
Number of members who have education SSC and above	Number of male members who have education SSC and above	0.77	1.16
	Number of female members who have education SSC and above	0.39	
Total		100.00	100.00

Within the uncontrolled group, from this baseline survey, it has been found that 31.28 percent of family members are illiterate (age above 15) in which 22.49 percent members are male and 8.79 percent members are female. In the respondents of uncontrolled group rate of illiteracy is also higher for male than female. 28.96 percent of family members can only sign in which 13.13 percent are male and 15.83 percent are female. 8.30 percent of family members can only read and write in which 4.25 percent are male and 4.05 percent are female. In addition, 22.39 percent of family members have education below class five in which 11 percent are male and 11.39 percent are female. 7.91 percent of family members have education between class 5 to class 10 in which 3.86 percent is male and 4.05 percent is female. Only 1.16 percent of all family members have education Secondary School Certificate (SSC) and above in which 0.77 percent are male and 0.39 percent are female.

6.1 Enrollment

Within 450 right holders households, 422 members were found enrolled in school out of which 43.13 percent are female 56.87 percent of them are male. This result shows evidence of advancing awareness regarding female education. On the other hand, within 150 households, total 146 members were found enrolled in uncontrolled group, within whom male 61.64 percent and female 38.36 percent.

Table 10: Enrollment status of right holders

	Total		Percent	Percent
Current enrollment in school or college	422	Male	240	56.87
		Female	182	43.13
				100

Table 11: Enrollment status of uncontrolled group

	Total		Percent	Percent
Current enrollment in school or college	146	Male	90	61.64
		Female	56	38.36
				100

6.2 Dropout

In the right holders household, dropout rate is 18.9 percent; whereas, the uncontrolled group has a dropout rate of 10.7 percent.

Table 12: Number of member Dropout from Right Holder

Any member dropped school	Frequency	Percent
Not applicable	2	0.4
Yes	85	18.9
No	363	80.7
Total	450	100.0

Table 13: Number of member Dropout from Uncontrolled Group

Any members dropped school	Frequency	Percent
Yes	16	10.7
No	134	89.3
Total	150	100.0

To identify reasons behind dropout, it is found that in the right holders group only 1.1 percent is dropped out of school to assist his/her family income through conducting earning activities, 14.2 percent for financial insolvency, 1.1 percent to assist in households chores, 0.2 percent for natural calamities and 1.3 percent for other reasons. In the uncontrolled group; only 1.3 percent is dropped out to assist in family income come earning activities, 8.7 percent for financial insolvency and 0.7 percent for assisting in household's chores within 100 households.

6.3 Adult Education

In both right holders and uncontrolled group, no one was found to have received adult education facilities.

6.4 Female Education

Figure 14: Female education status

Female education status of right holders group			Female education status of uncontrolled group		
Degree obtained by female member	Frequency	Percent	Degree obtained by female member	Frequency	Percent
Primary level	205	45.6	Primary level	75	50.0
Secondary level	95	21.1	Secondary level	17	11.3
S.S.C	4	0.9	S.S.C	2	1.3
Above S.S.C	3	0.7	Above S.S.C	1	0.7
No degree	62	13.8	No degree	27	18.0
Illiterate	81	17.9	Illiterate	28	18.7
Total	450	100	Total	150	100

Within the right holders, 13.8 percent have no degree (can only sign) and 17.9 percent is illiterate. In case of literate female; 45.6 percent has obtained primary education, 21.1 percent has received

secondary education, only 0.9 percent female has passed SSC and only 0.7 percent female has had higher education.

On the other hand, 18.7 percent illiterate female was identified in the uncontrolled households and 50 percent female was found with minimum education up to class five, who can both read and write their names, 18.7 percent can only sign, 11.3 percent has obtained secondary level, 1.3 percent female has been found with SSC and only 0.7 percent has been found with higher education.

Even though female illiteracy rate is higher both in the right holders and the uncontrolled group, but the current enrollment is satisfactory in both cases. It seems people of RESOLVE area are aware about girls' education. However; 2 percent and 2.7 percent respectively for right holders' and uncontrolled group's girls informed that they face difficulties to go to school. Within the right holders only 0.4 percent of female face religious restriction for education and only 1.8 percent of female face restriction from family for education. Within the uncontrolled group only none of the female face religious restriction for education and but 3.3 percent of female face restriction from family for education.

Table 15: Obstacles faced by Female for education

Obstacles for female education of right holder group			Obstacles for female education of uncontrolled group		
Main Obstacles	Frequency	Percent	Main Obstacles	Frequency	Percent
Religious Restriction	2	0.4	Religious Restriction	0	0
Restriction from family	8	1.8	Restriction from family	5	3.3
Others	4	0.9	Others	2	1.3
Not applicable	436	96.9	Not applicable	143	95.3
Total	450	100	Total	150	100

7. INCOME AND EXPENDITURE

7.1 Income

Most of the right holders are extremely poor and their annual income is below 35000 taka (near about USD 425). The baseline study revealed that total 82.7 percent of the right holders' annual income is equal or below 35000 taka. However, 17.3 percent of the right holders were found with an income of more than 35000 taka (Table 16). Only 0.7 percent of the right holders were found with an income more than 100000 taka (near about USD 1200).

Table 16: Income information

Income information of right holders			Income information of uncontrolled group		
Estimated yearly total income	Frequency	Percent	Estimated yearly total income	Frequency	Percent
1000 to 10000	27	6.0	1000 to 10000	10	6.7
10001 to 20000	79	17.6	10001 to 20000	28	18.6
20001 to 35000	266	59.1	20001 to 35000	86	57.4
35001 to 45000	63	14	35001 to 45000	21	14

45001 to 100000	12	2.6	45001 to 100000	5	3.3
100001 +	3	0.7	100001 +	0	0
Total	450	100	Total	150	100

Similarly, within the uncontrolled group 82.7 percent was identified as extremely poor whose annual income is equal or less than 35000 taka and 17.3 percent households' income more than 35000 taka annually (Table 16). None of the respondents of uncontrolled group were found with an income level more than 100000 taka.

7.2 Expenditure

There is not much discrepancy between the income and expenditure in the RESOLVE area. Near about 82.7 percent of the right holders were found with an income of less than or equal to 35000 taka whereas 80.9 percent of the right holders' yearly expenditure is less than or equal to 35000 taka. With the assistance from NGO programmes the right holders' income and expenditure are in balance (table 17). However, a similar scenario is discovered in case of the uncontrolled group where 82.7 percent households were found whose annual expenditure is less than or equal to 35000 taka and near about 81.3 percent households' expenditure is less than or equal to 35000 taka (table 17).

Table: 17 Expenditure status

Expenditure status of right holders			Expenditure status of uncontrolled group		
Estimated yearly expenditure	Frequency	Percent	Estimated yearly expenditure	Frequency	Percent
1000 to 10000	21	4.7	1000 to 10000	10	6.7
10001 to 20000	78	17.3	10001 to 20000	27	18.0
20001 to 35000	265	58.9	20001 to 35000	85	56.6
35001 to 45000	69	15.3	35001 to 45000	22	14.7
45001 to 100000	14	3.1	45001 to 100000	5	3.3
100001 +	3	0.7	100001 +	1	0.7
Total	450	100	Total	150	100

7.3 Feeding Capability

Since the right holders are extremely poor, most of them cannot arrange food three times in day. The baseline data depicts that 1.1 percent of the total households' members can have a meal once each day (that is not square even), 70.9 percent households' members eat twice every day and only 28 percent households members eat three times each day. Feeding scenario is identical for the uncontrolled group as well. Within uncontrolled group, only 21.3 percent can eat three times a day and 76.7 percent households' family members eat twice a day.

Table: 18 Feeding Capability

Feeding capability of right holders			Feeding capability of uncontrolled group		
How many time members eat each day	Frequency	Percent	How many time members eat each day	Frequency	Percent
One time	5	1.1	One time	3	2
Two times	319	70.9	Two times	115	76.7
Three times	126	28.0	Three times	32	21.3
Total	450	100.0	Total	150	100.0

8. DESCRIPTION OF DWELLING

8.1 Ownership Pattern

Within 450 right holders, 91.3 percent has their own house and 8.7 percent lives in others' places. 88.9 percent of right holders' house has only a single room, 9.1 percent house has two rooms, 1.8 percent house has three rooms and only 0.2 percent house has 4 rooms. On the other hand, 94.7 percent of the uncontrolled group has their own house and 5.3 percent lives in others' places. 88.7 percent of uncontrolled group has only one bed room and other 11.3 percent has two bed rooms in their house.

Table: 19 Household ownership statuses

Household ownership status of Right Holders			Households ownership status of Uncontrolled Group		
Ownership of House	Frequency	Percent	Ownership of House	Frequency	Percent
Owned	411	91.3	Owned	142	94.7
Others	39	8.7	Others	8	5.3
Total	450	100	Total	150	100.0

8.2 House Materials

98.9 percent of the right holders' floor of the house is made of mud and only 1.1 percent households' floor is made of concrete. In case of roof; 99.8 percent is covered by tin and only 0.2 percent house roof is made by Straw/Golpata. Moreover; only 3.3 percent household's wall is made by mud, 13.1 percent is of bamboo, 25.3 percent is Straw/Golpata, 56.4 percent is tin and 1.8 percent is made by others. Similarly, 100 percent households' floor of the uncontrolled group is made of mud. In case of roof 98.7 percent is made by tin, 0.7 percent is made by straw/golpata and 0.7 percent is made by wood. In case of material of wall here; 4 percent is made by mud, 8.7 percent is made by bamboo, 22.7 percent by straw/Golpata, 63.3 percent is made up of corrugated tin, only

0.7 percent is made by wood and the rest 0.7 percent household's house materials of wall is made by others materials. Most of the households (98.9 percent) of right holders are surrounded by mud and 1.1 percent is made of brick. While 100 percent houses of the uncontrolled group is surrounded by mud.

8.3 Source of Light

Only 4.2 percent of the household of the right holders has access to electricity. 94.9 percent house them depends on Kerosene and only 0.9 percent uses solar energy as for a source of light. On the other hand, only 2 percent of the controlled group has access to electricity, 97.3 percent uses kerosene and only 0.7 percent uses solar energy for the source of light.

8.4 Cooking System

Almost all the houses of both the right holders (63.8 percent) and the uncontrolled group (98 percent) practice their culinary in open places. Within the right holders, only 35.8 percent has separate place for cooking and within the uncontrolled group 42 percent of the households' has separate place for cooking. Both in right holder and uncontrolled group 99.3 percent households use leaves/straws and 98.4 and 96.7 percent fuel respectively for right holder and uncontrolled group is collected by female member and they are not paid anything for this.

8.5 Fuel System

Commonly female members of the family are responsible for collecting fuel for house and RESOLVE project area showed same pattern. In RESOLVE project area, 100 percent fuel is collected and they have to pay no money to collect fuel in both right holder and uncontrolled group because leaves/straws are the main element of fuel and these are easily available rural areas.

Within the right holders group, to collect fuel, 6.7 percent households needs 30 minutes, 36.6 percent needs 60 minutes, 5.8 percent needs 90 minutes, 49.1 percent needs 120 minutes and 1.8 percent needs 180 minutes. Within uncontrolled group the scenario is identical. 60 percent of female was identified spending an hour in collecting fuel for their home, 5.3 percent spends 90 minutes, 32 percent spends 120 minute and 2.7 percent spends 180 minute to collect fuel for cooking.

9. WATER AND SANITATION

9.1 Drinking Water

Over the decades rural Bangladesh has been dependant on using tube well for drinking water. Similarly, almost all the right holders use tube well to meet up their demand of drinking water. However, not all the tube wells are placed adjacent to the right holder's household. Rather they have to walk few minutes to collect pure drinking water. From the survey it is revealed that only 0.2 percent households collect water from ponds/wells and 99.8 percent households collect from tube wells. In case of time need to collect drinking water; 93.8 percent households need less than ten minutes and 6.8 percent needs 10 to 15 minutes. In case of water collection; 82.9 percent households' water is collected by male, 1.1 percent is done by female, 15.3 percent is collected by both and 0.6 percent households' water is collected by Children. In case of collection frequency, it is

found that 1.1 percent households collect once, 20 percent households collect twice, 59.1 percent households collect thrice, 11.3 percent households collect four times, 8.2 percent households collect five times a day and 0.2 percent households collect six times a day.

Alternatively, within the uncontrolled group 100 percent households collect drinking water from tube wells and for doing so 79.3 percent households need to spend less than ten minutes and 20.7 percent households need to spend 10 to 15 minutes. In case of how many times families collect drinking water, 1.3 percent family collects drinking water once, 37.3 percent household collects twice, 40 percent household collects thrice, 14.7 percent household collects four times and 6.7 percent household collects five times in a day.

9.2 Cooking Water

Most of the households depend on tube well as sources of water for cooking. From the survey it is revealed that 0.4 percent of the total household collects cooking water from ponds/wells and 99.6 percent collects from tube wells. In case of collection time; it is found that 93.6 percent needs less than 10 minutes and 6.4 percent needs 10 to 15 minutes to collect water for cooking. In case of collection frequency, 3.6 percent household collects once a day, 64.4 percent collects twice, 20.4 percent collects three times, 2.9 percent collects four times and 8.7 percent collects five times in a day.

Within uncontrolled group cooking water collection pattern differs a little from right holders group. The survey revealed that 100 percent households collect from tube wells and for these 90.7 percent households need to spend less than 10 minutes and 9.3 percent needs to spend 10 to 15 minutes. In case of collection frequency; 1.3 percent household collects once, 47.3 percent collects two times, 38.7 percent household collects thrice, 6 percent collects four times and 6.7 percent collects five times in a day.

9.3 Availability of Water

In case of right holders group, 50.9 percent households face unavailability of water supply and 49.1 percent do not face that. In case of unavailability of water; 0.2 percent households collect from rivers, 75.8 percent from ponds and 5.6 percent from tube well and 18.4 percent from other sources. In case of uncontrolled group, 28 percent households face unavailability of water supply and 72 percent do not face that. In case of unavailability of water; 80.7 percent households collect from ponds, 8.7 percent from tube well and 10.6 percent from other sources.

9.4 Bathing and Washing Water Source

In case of the right holders group; 60.2 percent household's bathing and washing water source is rivers/ponds, 39.1 percent uses tube wells and 0.4 percent makes use of other sources and 0.2 percent has access to municipality water for washing and bathing. In case of the uncontrolled group; 74 percent household uses rivers/ponds for washing and bathing and 24.7 percent use tube well and 1.3 percent has access to municipality water for washing and bathing.

9.5 Sanitation System

9.5.1 Toilet

In case of the right holders group; 2.9 percent households have sanitary toilets, 24 percent households have hanging toilets, 72 percent households make use of open places for defecation and 1.1 percent households adopt other means. From the study it is seen that 73.6 percent households do not have any toilets, 26 percent households have one toilet and 0.4 percent households have two toilets. 14.2 percent households only use their own toilets and others share toilets with other households. In case of distance between toilet and source of drinking water; it is found that 97.6 percent households distance less than or equal to 20 meters and 2.4 percent is within a distance of 20 to 60 meters.

Table: 20 Types of toilet used

Types of toilet used by right holders group			Types of toilet used by uncontrolled group		
Type of toilet	Frequency	Percent	Type of toilet	Frequency	Percent
Sanitary	13	2.9	Sanitary	25	16.6
Hanging	108	24.0	Hanging	27	18.0
Opens	324	72.0	Opens	97	64.7
Other	5	1.1	Other	1	.7
Total	450	100.0	Total	150	100

On the contrary, within the uncontrolled group 16.6 percent households have sanitary toilets, 18 percent households have hanging toilets, 64.7 percent makes use of open places and 0.7 percent toilet system is other. Here 69.3 percent households do not have any toilets, 30 percent households have one toilet and 0.7 percent households have two toilets. In case of usage, 17.3 percent households use their own toilets and other households use toilets differently in different pace. In case of distance between toilet and source of drinking water it is found that 96 percent households have a distance of 20 meters and 4 percent households' toilet and drinking water source is within 20 to 50 meters.

9.5.2 Waste management

Due to the lack of both awareness and technical knowledge, waste management system is very poor in rural areas. From the survey it is revealed that, within right holder's group 50.4 percent households' garbage is put in open places, 0.04 percent puts in dustbin, 0.4 percent gives it to garbage collectors, 37.1 percent in rivers/ponds and 11.5 percent households' garbage is put in others place. Within uncontrolled group 38.7 percent households' garbage is put in open places, 0.7 percent puts in dustbin, 50 percent gives it to garbage collectors, 10.7 percent in rivers/ponds and 0.3 percent puts in other places. However; within right holders group 76 percent households clean daily, 3.8 percent cleans once a week, 2.7 percent does it once in a month, 0.4 percent households clean half yearly, 0.2 percent cleans once in a year and 16.9 percent households never clean their garbage. In addition, within uncontrolled group 46.7 percent households clean garbage daily, 2.7 percent once in a week, 30.7 percent once in a month, 1.3 percent cleans half yearly and 18.7 percent never clean their garbage.

Table: 21 Garbage System

Garbage System of Right Holders			Garbage System of Uncontrolled Group		
Garbage is put in	Frequency	Percent	Garbage is put in	Frequency	Percent

Open place	227	50.4	Open place	58	38.7
Dustbin	2	.4	Garbage collector	1	.7
Garbage collector	2	.4	River/pond	75	50.0
River/pond	167	37.1	Other	16	10.7
Other	52	11.5	Total	150	100
Total	450	100			

The baseline survey gives an impression of the right holders' poor technical knowledge and awareness on using garbage as organic fertilizer. It is found that, within right holders group only 26.4 percent household use garbage as an organic fertilizer and 73.6 percent households even do not know how to convert garbage into organic fertilizer. Within uncontrolled group 47.3 percent households use garbage as an organic fertilizer and rest 52.7 percent household never does that.

Table: 22 Use of garbage as organic fertilizer

Use of garbage as organic fertilizer by right holders			Use of garbage as organic fertilizer by Uncontrolled group		
Use garbage as an organic fertilizer	Frequency	Percent	Garbage Use as Organic Fertilizer	Frequency	Percent
Yes	119	26.4	Yes	71	47.3
No	331	73.6	No	79	52.7
Total	450	100	Total	150	100

10. HEALTH

10.1 Disease

While considering health situation of the right holders; it is found that 7.1 percent family members frequently suffer from fever, 32.9 percent is seasonally affected by cough, 22.2 percent is affect by Diarrhea, 22 percent by Influenza, 6.7 percent by TB, 5.1 percent by jaundice, 2 percent by Typhoid and 1.9 percent affected by cholera, asthma, headache and others. In case of the uncontrolled group; 2.7 percent households' members are affected by fever, 30.7 percent by Cough, 22 percent by Diarrhea, 23.3 percent by Influenza, 5.3 percent by TB, 6.7 percent by jaundice, 2 percent by cholera, 3.3 percent by typhoid and 4.1 percent by asthma, headache and others.

Table: 23 Diseases occurrence

Diseases occurrence among right holders			Diseases Occurrence among Uncontrolled Group		
Disease most frequently affect	Frequency	Percent	Disease most frequently affect	Frequency	Percent
Fever	32	7.1	Fever	4	2.7
Cough	148	32.9	Cough	46	30.7
Diarrhea	100	22.2	Diarrhea	33	22.0

Influenza	99	22.0	Influenza	35	23.3
TB	30	6.7	TB	8	5.3
Jaundice	23	5.1	Jaundice	10	6.7
Cholera	2	.4	Cholera	3	2.0
Typhoid	9	2.0	Typhoid	5	3.3
Asthma	3	.7	Asthma	4	2.7
Headache	2	.4	Headache	1	.7
Others	2	.4	Others	1	.7
Total	450	100.0	Total	150	100.0

In case of treatment method, highest percentage found (66.7 percent) to be using allopath in the right holders' family despite taking advice from unregistered village doctors, 28.9 percent is found to use Homeopathy and only 4.2 percent takes Kabiraji. Another only 0.2 percent makes use of herbal elements for treatment. On the other hand; 16.7 percent households take Homoeopathy, 73.3 percent prefers Allopathic treatment and other 10 percent uses Kabiraji within the uncontrolled group.

The scenario of access to formal medical facility is showing a worrying picture. 89.1 percent household of right holders group uses non-government or unregistered village doctor for treatment and only 8.4 percent use government provided medical facilities. Likewise, 93.3 percent of uncontrolled group relied on non-government medical facilities for treatment and 10 percent households use government facilities.

While investigating reasons for not using formal medical facilities, distance is found to be the most significant factor. The survey depicts that 21.6 percent households need 10 to 30 minutes, 37.3 percent households need 31 to 60 minutes and 41.1 percent needs 65 to 150 minutes to reach to the nearest medical centre. In case of the uncontrolled group; 42 percent households need to spend less than 30 minutes, 36 percent households need 31 to 60 minutes and 22 percent households need 65 to 120 minutes to reach the nearest medical centre.

10.2 Immunization of Children

Table 24: Immunization status of children of right holders

Immunization of children	Frequency	Percent
Completed	218	48.4
Partially completed	78	17.3
Not given	3	.7
Not applicable	151	33.6
Total	450	100.0

Table 25: Immunization status of children of Uncontrolled group

Immunization of children	Frequency	Percent
Completed	67	44.7
Partially completed	11	7.3
Not given	7	4.7
Not applicable	65	43.3
Total	150	100.0

The rate of children immunization has a satisfactory picture. Within the right holders group; 48.4 percent children (below five years) have completed immunization, 17.3 percent completed it partially and only 0.7 percent did not receive any. The uncontrolled group shows a nearly identical scenario. 44.7 percent children have completed immunization, 7.3 percent completed it partially and 4.7 percent did not receive any.

10.3 Birth Control

In case of birth control; 54.4 percent households' female members adopt birth control method whereas 39.6 percent do not adopt any in the right holders group. Those who do not use any birth control method opined like this: 5.8 percent follows religious restriction, dislike of in-laws in case of 5.3 percent and 14.4 percent does not use for other reasons. Moreover 5.3 percent is not aware of such methods.

Table 26: Birth control status of right holders

Receive birth control method	Frequency	Percent
Yes	245	54.4
No	178	39.6
Not applicable	27	6.0
Total	450	100.0

Table 27: Birth control status of Uncontrolled Group

Receive birth control	Frequency	Percent
Yes	57	38.0
No	71	47.3
Not applicable	22	14.7
Total	150	100

In regard to the uncontrolled group, 38 percent reproductively active women are using birth control methods and 47.3 percent are not using birth control methods. The reasons behind not adopting such methods are religious restriction (2.7 percent), disregard of the in-laws (11.3 percent), and lack of awareness (4 percent). 18 percent does not take birth control methods for other reasons.

10.4 Maternal Health Facility

Maternal facility is inadequate in the RESOLVE project area. Only 9.8 percent of the right holders have received maternal health facilities during pregnancy and 67.3 percent relied on untrained midwife for pregnancy related matter.

The situation is worse in case of the uncontrolled group. Within the group, only 2 percent has received formal maternal health facilities during pregnancy and 82.7 percent relied on untrained midwife for pregnancy related matter.

Table: 28 Maternal health facility

Maternal health facility access by right holders			Maternal health facility access by uncontrolled Group		
Delivery done	Frequency	Percent	Delivery done	Frequency	Percent
Midwife	303	67.3	Midwife	124	82.7
Medically trained person	44	9.8	Medically trained person	3	2.0
Other	4	.9	Other	1	.7
Not applicable	99	22.0	Not applicable	22	14.7
Total	450	100.0	Total	150	100.0

10.5 Vaccination During Pregnancy

Within right holders, 54.4 percent pregnant women have taken vaccination during pregnancy and 20 percent did not take any. On the other hand, 67.3 percent pregnant women of the uncontrolled group have taken vaccine during pregnancy and 17.3 percent did not take any.

11. AGRICULTURAL AND LAND DISTRIBUTION SYSTEM

Most of the right holders are either landless poor or have tiny amount of land, which is evident from survey result as well. From survey it is found that 29.3 percent households have the ownership of agricultural land and 70.6 percent household do not have any agricultural lands of their own. Alternatively, 21.3 percent households do not have any productive agriculture land within the uncontrolled group.

Table 29: Agriculture land ownership status

Land Ownership status of right holders			Land Ownership of Uncontrolled Group		
Ownership of agricultural land	Frequency	Percent	Ownership of agricultural land	Frequency	Percent
Yes	132	29.3	Yes	32	21.3
No	318	70.6	No	118	78.7
Total	450	100.0	Total	150	100.0

11.1 Size of Agriculture Land

Since most of the right holders are landless or small holders; therefore 90.2 percent households have less than 25 decimal agricultural lands, 6.3 percent households have 26 to 50 decimal, 1.3 percent households have 51 to 75 decimal and 1.4 percent households has 76 to 100 decimal and only 0.8 percent households has more than 100 decimal agricultural lands. On the other hand; 89.4 percent households have less than 25 decimal agricultural lands, 8.1 percent has 26 to 50 decimal, 2 percent has 51 to 75 decimal and only 0.5 percent households have 76 to 100 decimal agricultural lands within uncontrolled group.

11.2 Leased Land

Some of the farmers use leased land for agriculture production. Within the right holders and the uncontrolled group; respectively only 6.2 and 6 percent has leased agricultural lands.

11.3 Size of the Leased Land

The baseline survey revealed that 97.3 percent households have less than 25 decimal leased lands, 2.1 percent have 26 to 50 decimal leased lands and only 0.6 percent households have 51 to 75 decimal leased. It is clearly evident from the data that most of the right holders either landless or smallholder farmer. On the other hand, 96.7 percent households have less than 25 decimal lands and 3.3 percent has 26 to 50 decimal leased lands within the uncontrolled group.

11.4 Share Cropping

Within the right holders; 1.6 percent households do not have any answers for the question, 20 percent households have share cropping land and 88.9 percent households have less than 25 decimal, 8.7 percent has 26 to 50 decimal and 2.4 percent has 51 to 75 decimal sharecropping agricultural lands. On the other hand, 12 percent households have share cropping land and 96 percent household have less than 25 decimal lands and 4 percent households have 26 to 50 decimal share cropping land within the uncontrolled group.

11.5 Ownership of Pond

Within the right holders, only 11.6 percent households have the ownership of ponds. 7.1 percent does fishery, 1.6 percent does bathing and washing and 2.2 percent uses the ponds for other purposes. On the other hand; 3.3 percent households have ownership of pond within the uncontrolled group and purpose of pond here are fishery (3.3 percent), bathing and washing (4.7 percent) and others (0.7 percent).

11.6 Poultry

Within the right holders; 34.4 percent has the ownership of poultry. 98.4 percent households have less than 2000 taka, only 0.5 percent households have 2001 to 5000 taka, 0.2 percent households have 5001 to 10000 taka and 0.9 percent households have more than 10000 taka of all poultry. On the other hand; 34 percent households have the ownership of poultry and 99.3 percent households have less than 2000 taka and only 0.7 percent households have 2001 to 5000 taka of all poultry in the uncontrolled group.

Table 30: Ownership of Poultry

Ownership of Poultry for the right holders group			Ownership of Poultry for Uncontrolled Group		
Ownership of any poultry	Frequency	Percent	Ownership of any poultry	Frequency	Percent
Yes	155	34.4	Yes	51	34.0
No	295	65.6	No	99	66.0
Total	450	100.0	Total	150	100.0

11.7 Livestock

Livestock is considered as an important natural capital for rural people and a considerable income comes from it. However, most of the right holders do not have any livestock. From the survey it is found that only 25.6 percent households have domestic animals and here 80.9 percent households' estimated amount of money less than 5000 taka, 7.3 percent households have 5001 to 15000 taka, 6.9 percent households have 15001 to 30000 taka, 3.1 percent households have 30001 to 50000 taka, 1.6 households have 50001 to 100000 taka and only 0.2 percent households have more than 100001 taka. Whereas within the uncontrolled group 24 percent households have the ownership of domestic animals and 84.7 percent households have the amount less than 5000 taka, 7.3 percent households have 5001 to 15000 taka, 5.3 percent households have the amount 15001 to 30000 taka, only 2 percent households have 30001 to 50000 taka and only 0.7 percent households have 50001 to 100000 taka for all domestic animals.

Table 31: Ownership of Livestock

Ownership of domestic animals for right holders group			Ownership of domestic animals for uncontrolled group		
Ownership of domestic animals	Frequency	Percent	Ownership of domestic animals	Frequency	Percent
Yes	115	25.6	Yes	36	24.0
No	335	74.4	No	114	76.0
Total	450	100.0	Total	150	100.0

11.8 Agricultural Activities

Table 32 : Status of engagement in agricultural activities

Right holders Group			Uncontrolled group		
Engaged in agricultural activities	Frequency	Percent	Engaged in Agricultural activities	Frequency	Percent
Yes	208	46.2	Yes	48	32.0
No	242	53.8	No	102	68.0
Total	450	100	Total	150	100.0

In the project area among the right holders, 46.2 percent households are engaged in agricultural activities. On the other hand, 32 percent of the uncontrolled group is engaged in agriculture activities.

11.9 Cultivation Intensity

Among the right holders group; 4.2 percent households cultivate once, 41.6 percent households twice and 2 percent cultivates three times in a year. Likewise, within the uncontrolled group, 2 percent cultivate once, 28 percent practices double cropping and only 2.7 percent cultivate three times in a year in their land.

11.10 Productive Crop

Like any other parts of Bangladesh rice is also major crop for project villages. The survey revealed that, among right holders 53.1 percent farmers grow rice in their field, 2.4 percent wheat, 1.3 percent potato, 1.6 percent jute and 0.2 percent Vegetable. In case of uncontrolled group, 25 percent households' answer is Paddy, 4 percent wheat, 0.7 percent potato, 2 percent jute, and 1.3 percent households produce other maize.

11.11 Seed Used for Crop Production

The farmers in rural Bangladesh are used to grow crops from locally produced seeds. However, the trend is changing slowly and hybrid seeds are replacing the indigenous ones. Within the right holders it is found that; 14 percent households use local, 18.4 percent households use high yielding variety, 22

percent uses both and 3.3 percent use hybrids. On the other hand, 4 percent households use local ones, 15.3 percent households use high yielding variety, 14 percent households use both and only 0.7 percent makes use of Hybrids seeds for crop production within the uncontrolled group. In case of seed preservation, it is found that only 14.7 percent farmers are preserving seeds for future use in the right holders group, whereas within the uncontrolled group the percentage is only 7.3 percent.

11.12 Use of Agriculture Tools

Subsistence agriculture in rural Bangladesh is gradually shifting towards mechanized agriculture, which is manifested from the survey as well. It is found that in the right holders' group; only 3.3 percent uses traditional agricultural tools, 1.1 percent uses modern agricultural appliances and 44.2 percent use both the traditional and modern ones. Within the uncontrolled group; only 2.7 percent households use traditional ones, 13.3 percent uses modern ones and 17.3 percent households use both.

11.13 Source of Irrigation

Irrigation is an important issue for agriculture production. More particularly, irrigation is crucial for Boor production. Within right holders' group only 0.4 percent use surface water, 27.1 percent households use ground water as a source of irrigation and 30.9 percent households use both sources of irrigation. However, in uncontrolled group no household use surface water, 18.7 percent households use ground water and 18 percent households use both sources for Irrigation.

11.14 Main Obstacles for Agriculture Production

11.14.1 Obstacles for Agricultural Production

Agriculture is a weather sensitive sector. Any changes in climate will eventually hamper agricultural production. Farmers of RESOLVE area are confronting to multiple stressors. However, flood is the dominating factor that has ambivalent affect. In one side it make land fertile through silt deposition, on the other hand cause destruction through washing out whole production. Among right holders group we have found quite a number flood victim and 64.9 percent recognized flood as main obstacles for agriculture production and 15.3 percent identified drought as major threat. Even though salinity ingression still remains to minimum level, however 0.9 percent thought that salinity could be a major threat to agriculture in near future when 13.3 percent face obstacles for River bank erosion and 5.6 percent others. In case of Uncontrolled group main Obstacles for agricultural production in this area here 2.7 percent households answer is Drought, 84.7 percent Flood, 8.7 percent households obstacle is River bank erosion and 4 percent households' answer is for others.

11.14.2 Effect of Climate Change in Agriculture

Agricultural sector is very sensitive to climate change, where direct loss is incurred. Climate change posed multifaceted impacts on agriculture. In the right holders group; 16.9 percent farmers noticed change of verity of crops as an impact of climate change, whereas 56.9 percent identified reduction of agricultural productivity, 9.6 percent farmers argued change of crop calendar and 1.8 percent others as the major impacts of climate change. Most of the farmers (32.7 percent) of the uncontrolled group addressed reduction of production as the major impact of climate change, 14

percent address change of variety of crop and 7.3 percent identified change of crop calendar as major climate change impact.

Table 33: Effect of Climate change in Agriculture

Right Holder Group			Uncontrolled group		
Effect of climate change	Frequency	Percent	Effect of climate change	Frequency	Percent
Not Applicable	67	14.9	Not Applicable	68	45.3
Reduction of production	256	56.9	Reduction of production	49	32.7
Change of variety crops	76	16.9	Change of variety crops	21	14.0
Change of crop calendar	43	9.6	Change of crop calendar	11	7.3
Other	8	1.7	Other	1	0.7
Total	450	100.0	Total	150	100

12. CLIMATE CHANGE AND NATURAL HAZARDS

72.9 percent households of the right holders answered that they are affected by climate change; while 23.6 percent answered that they have heard about climate change but did not notice any effect of it. However, 3.5 percent respondents showed their ignorance about climate change. In this case, within uncontrolled group 46.7 percent addressed climate change as major threat to their lives and livelihood. On the other hand, 52 percent respondents answered that they have heard about climate change and did not notice any effect of it. Regrettably 6.1 percent respondents did not know anything about climate change.

12.1 Hazard Frequency

According to respondents among the right holders flood is the most frequent hazard faced by community and its 75.8 percent, whereas 2.2 percent respondents identified salinity, 6.9 percent respondents identified drought and 6 percent respondents identified riverbank erosion as major hazard that could incur great loss.

Table 34: Hazard frequency according to right holders and uncontrolled group

Right holder Group			Uncontrolled group		
Calamities frequently occur	Frequency	Percent	Calamities frequently occur	Frequency	Percent
Not Applicable	21	4.7	Not Applicable	1	0.7
Flood	341	75.8	Flood	128	85.3
Salinity	10	2.2	Salinity	0	0
Drought	31	6.9	Drought	9	6.0
Riverbank erosion	27	6.0	Riverbank erosion	4	2.7
Other	20	4.4	Other	8	5.3
Total	450	100.0	Total	150	100

On the other hand, 85.3 percent respondents identified flood as most frequent hazard, 6 percent identified drought and 2.7 percent identified riverbank erosion intrusion as major hazard within the uncontrolled group.

12.2 Impact on Livelihood

Within the right holders group 75.8 percent marked flood as the major problems affecting their livelihood and within uncontrolled group 85.3 percent households marked flood as the main problems hampering livelihood.

12.3 Relief and Recovery after Disaster

Even though Bangladesh has been cited as a model for disaster management worldwide, however the RESOLVE project area shows a disappointing scenario in case of receiving relief and recovery assistance after disaster. The survey revealed that within right holders group, only 12.8 percent of the households get assistance out of which 4.4 percent receives assistance from government, 8.4 percent gets assistance from NGOs or other organizations. Alternatively, 8.7 percent households of the uncontrolled group receive assistance out of which 4 percent is from governmental source and 4.7 percent is from other non-governmental sources after disasters.

12.4 Weather Forecasting System

The right holders are very vulnerable to disasters and weather forecasting is important for securing their livelihood from devastation. However, most of the right holders (44.5 percent) do not access to weather forecasting system. In case of the uncontrolled group, 36 percent respondents do not have access to weather forecasting system.

12.5 The Medium of Weather Forecasting

Among the right holders; 44.5 percent of respondents have access to weather forecasting. Among this percentage; 3.1 percent uses radio, 26.5 percent uses television, 23.8 percent makes use of mobile and 7.1 percent uses other sources as a medium of weather forecasting. On the other hand, 2.7 percent respondents of the uncontrolled group use radio as medium of weather forecasting, 28.7 percent uses television, 26 percent mobile and 8.7 percent households use other sources as a medium of forecasting.

13. FINANCIAL SYSTEM

13.1 Savings

Within the right holders group, 33.6 percent saves money. In case of yearly amount of savings; 86.2 percent households have the amount of savings less than 2000 taka, 9.6 percent households have 2001 to 5000 taka, 2.6 percent household have the amount of savings 5001 to 10000 taka, 0.5 percent households have 10001 to 20000 taka and 1.1 percent households have more than 20000 taka of savings. In case of forms of savings; 1.6 percent's form of savings is in bank, 7.1 percent goes to cooperative, 25.8 percent is facilitated by NGOs, 1.1 percent case and 0.9 percent adopts other means of savings.

Within the uncontrolled group, 21.3 percent households save money. Among them 91.3 percent households have less than 2000 taka, 6.7 percent households have 2001 to 5000 taka, 1.3 percent households have 5001 to 10000 taka and 0.7 percent households have 10001 to 20000 taka as amount of savings. In case of forms of savings; 2.7 percent saves in banks, 2 percent in cooperative, 26 percent is NGOs, 0.7 percent cash and 0.7 percent has other means.

13.2 Loan

The survey revealed that 70.9 percent households have to take loan for a number of reasons. The highest number (62.4 percent) is found in taking loan for purchasing food followed by treatment (9.1 percent), children's education (2 percent) and 2.7 percent takes loans for varied reasons. On the other hand, 58 percent households of the uncontrolled group take loan. Here 4 percent households borrow for treatment, 57.3 percent households borrow for purchasing food and only 0.7 percent for education of their children.

13.3 Source of Loan

Relatives have appeared as major source of capital for poor people in rural Bangladesh. Within the right holders 44.2 percent of the borrower takes loan from relatives, 19.3 percent households borrow from cooperative, 3.8 percent households borrow from money lender and 2.9 percent households borrow from their neighbours. In case of the uncontrolled group; 50 percent loan takers rely on their relatives, 14 percent rely on cooperative, 3.3 percent rely on money lenders and 2 percent rely neighbours for borrowing.

13.4 Debt Situation

Since the right holders are poor, they are compelled to take loans to meet up their daily expenses. The survey explored that 50 percent of the right holders are in debt. 35.3 of the respondents of the uncontrolled group are also is indebted.

In case of amount of borrowing, among the right holders group; 64.7 percent households have the amount of debt less than 2000 taka, 15.1 percent households have 2001 to 5000 taka, 12.9 percent households have 5001 to 10000 taka, 5.3 percent households 10001 to 20000 taka and 2 percent has more than 20000 taka of debt currently. On the other hand; 74 percent households have less than 2000 taka, 13.3 percent households have 2001 to 5000 taka, 8 percent households have 5001 to 10000 taka, 2.7 percent households have 10001 to 20000 taka and 2 percent households have more than 20000 taka of debt at present within the uncontrolled group.

14. CAPACITY BUILDING TRAINING

Table 35: Capacity building training received by right holders

Capacity building training received by right holders			Capacity building training received by uncontrolled group		
Get capacity building training	Frequency	Percent	Get capacity building training	Frequency	Percent
Yes	28	6.2	Yes	3	2.0
No	422	93.8	No	147	98.0
Total	450	100	Total	150	100

Both the right holders and uncontrolled group are out of the ambit of capacity building training offered by both government and NGOs. From the survey it is found that only 6.2 percent of the

right holders' respondents have received capacity building training. On the Other hand, only 2 percent of the uncontrolled group gets the training.

15. MAJOR FINDINGS OF THE STUDY

Table 36: Major Findings of the study	
Indicators	Current situation of the Indicators
<i>Population</i>	Total population of the right holder's family is 1848. 49.08 percent of them are male and 50.38 percent are female. On the other hand the total member is 518 in the uncontrolled households, 49.62 percent of them are male and 50.38 percent are female.
<i>Primary Occupation</i>	From the baseline survey; it has been found that 24 percent household heads of right holder's primary occupation is agriculture, 53.3 percent is wage labourer, 3.3 percent is small businessman, 2.2 percent does fishing, 1.6 percent is housewife, 4.2 percent is rickshaw puller, 3.1 percent is van puller, 0.2 percent is kobiraj, 1.1 percent is mason and 6.9 percent is engaged in other activities as their main occupation. On the other hand, among the uncontrolled group; 18.7 percent households was found to be engaged in agriculture, 62 percent households is labourer, 1.3 percent is small businessman, 1.3 percent is Housewife, 2.7 percent is rickshaw puller, 2 percent is van puller, 2.7 percent Mason and 12 percent household is engaged in other activities.
<i>Secondary Occupation</i>	Majority of the right holders are only engaged in one occupation. However, some of the right holders change their occupation with the changing of seasonality. From the survey it is found that 4.4 percent right holders use agriculture as their secondary occupation and 10.7 percent become day labourers based on seasonality, particularly in lean period (Table 7). In case of the uncontrolled group, 88 percent households found having a single occupation and 2.7 percent is found to have agriculture as their second occupation and 5.3 percent is found as day labour as a second occupation to bear their family expenses based on seasonality.
<i>Enrollment</i>	Within 450 right holders households, 422 members were found enrolled in school out of which 43.13 percent are female 56.87 percent of them are male. This result shows evidence of advancing awareness regarding female education. On the other hand, within 150 households, total 146 members were found enrolled in uncontrolled group, within whom male 61.64 percent and female 38.36 percent.
<i>Female Education</i>	Within the right holders, 13.8 percent have no degree (can only sign) and 17.9 percent is illiterate. In case of literate female; 45.6 percent has obtained primary education, 21.1 percent has received secondary education, only 0.9 percent female has passed SSC and only 0.7 percent female has had higher education. On the other hand, 18.7 percent illiterate female was identified in the uncontrolled households and 50 percent female was found with

	<p>minimum education up to class five, who can both read and write their names, 18.7 percent can only sign, 11.3 percent has obtained secondary level, 1.3 percent female has been found with SSC and only 0.7 percent has been found with higher education.</p>
<i>Income</i>	<p>Most of the right holders are extremely poor and their annual income is below 35000 taka (near about USD 425). The baseline study revealed that total 82.7 percent of the right holders' annual income is equal or below 35000 taka. However, 17.3 percent of the right holders were found with an income of more than 35000 taka. Only 0.7 percent of the right holders were found with an income more than 100000 taka (near about USD 1200). Similarly, within the uncontrolled group 82.7 percent was identified as extremely poor whose annual income is equal or less than 35000 taka and 17.3 percent households' income more than 35000 taka yearly. None of the respondents of uncontrolled group were found with an income level more than 100000 taka.</p>
<i>Expenditure</i>	<p>There is not much discrepancy between the income and expenditure in the RESOLVE area. Near about 82.7 percent of the right holders were found with an income of less than or equal to 35000 taka whereas 80.9 percent of the right holders' yearly expenditure is less than or equal to 35000 taka. With the assistance from NGO programmes the right holders' income and expenditure are in balance. However, a similar scenario is discovered in case of the uncontrolled group where 82.7 percent households were found whose annual expenditure is less than or equal to 35000 taka and near about 81.3 percent households' expenditure is less than or equal to 35000 taka.</p>
<i>Feeding Capability</i>	<p>Since the right holders are extremely poor, most of them cannot arrange food three times in day. The baseline data depicts that 1.1 percent of the total households' members can have a meal once each day (that is not square even), 70.9 percent households' members eat twice every day and only 28 percent households members eat three times each day. Feeding scenario is identical for the uncontrolled group as well. Within uncontrolled group, only 21.3 percent can eat three times a day and 76.7 percent households' family members eat twice a day.</p>
<i>Ownership of House</i>	<p>Within 450 right holders, 91.3 percent has their own house and 8.7 percent lives in others' places. 88.9 percent of right holders' house has only a single room, 9.1 percent house has two rooms, 1.8 percent house has three rooms and only 0.2 percent house has 4 rooms. On the other hand, 94.7 percent of the uncontrolled group has their own house and 5.3 percent lives in others' places. 88.7 percent of uncontrolled group has only one bed room and other 11.3 percent has two bed rooms in their house.</p>

<i>Source of Light</i>	Only 4.2 percent of the household of the right holders has access to electricity. 94.9 percent house them depends on Kerosene and only 0.9 percent uses solar energy as for a source of light. On the other hand, only 2 percent of the controlled group has access to electricity, 97.3 percent uses kerosene and only 0.7 percent uses solar energy for the source of light.
<i>Fuel System</i>	Both in right holder and uncontrolled group 99.3 percent households use leaves/straws and 98.4 and 96.7 percent fuel respectively for right holder and uncontrolled group is collected by female member and they are not paid anything for this.
<i>Water</i>	From the survey it is revealed that only 0.2 percent households collect water from ponds/wells and 99.8 percent households collect from tube wells. Alternatively, within the uncontrolled group 100 percent households collect drinking water from tube wells. In case of cooking water, 0.4 percent of the total household of right holders collects water from ponds/wells and 99.6 percent collects from tube wells. On the other hand, the survey revealed that 100 percent households of uncontrolled group collect from tube wells. Within right holder group, 50.9 percent households face unavailability of water supply and 49.1 percent do not face that. In case of uncontrolled group, 28 percent households face unavailability of water supply and 72 percent do not face that.
<i>Sanitation systems</i>	In case of the right holders group; 2.9 percent households have sanitary toilets, 24 percent households have hanging toilets, 72 percent households make use of open places for defecation and 1.1 percent households adopt other means. On the contrary, within the uncontrolled group 16.6 percent households have sanitary toilets, 18 percent households have hanging toilets, 64.7 percent makes use of open places and 0.7 percent toilet system is other.
<i>Waste management</i>	From the survey it is revealed that, within right holder's group 50.4 percent households' garbage is put in open places, 0.04 percent puts in dustbin, 0.4 percent gives it to garbage collectors, 37.1 percent in rivers/ponds and 11.5 percent households' garbage is put in others place. Within uncontrolled group 38.7 percent households' garbage is put in open places, 0.7 percent puts in dustbin, 50 percent gives it to garbage collectors, 10.7 percent in rivers/ponds and 0.3 percent puts in other places.
<i>Diseases</i>	While considering health situation of the right holders; it is found that 7.1 percent family members frequently suffer from fever, 32.9 percent is seasonally affected by cough, 22.2 percent is affect by Diarrhea, 22 percent by Influenza, 6.7 percent by TB, 5.1 percent by jaundice, 2 percent by Typhoid and 1.9 percent affected by cholera, asthma, headache and others. In case of the uncontrolled

	group; 2.7 percent households' members are affected by fever, 30.7 percent by Cough, 22 percent by Diarrhea, 23.3 percent by Influenza, 5.3 percent by TB, 6.7 percent by jaundice, 2 percent by cholera, 3.3 percent by typhoid and 4.1 percent by asthma, headache and others.
<i>Immunization of Children</i>	The rate of children immunization has a satisfactory picture. Within the right holders group; 48.4 percent children (below five years) have completed immunization, 17.3 percent completed it partially and only 0.7 percent did not receive any. The uncontrolled group shows a nearly identical scenario. 44.7 percent children have completed immunization, 7.3 percent completed it partially and 4.7 percent did not receive any.
<i>Birth control</i>	In case of birth control; 54.4 percent households' female members adopt birth control method whereas 39.6 percent do not adopt any in the right holders group. In regard to the uncontrolled group, 38 percent reproductively active women are using birth control methods and 47.3 percent are not using birth control methods.
<i>Vaccination During Pregnancy</i>	Within right holders, 54.4 percent pregnant women have taken vaccination during pregnancy and 20 percent did not take any. On the other hand, 67.3 percent pregnant women of the uncontrolled group have taken vaccine during pregnancy and 17.3 percent did not take any.
<i>Agricultural Land Ownership</i>	Most of the right holders are either landless poor or have tiny amount of land, which is evident from survey result as well. From survey it is found that 29.3 percent households have the ownership of agricultural land and 70.6 percent household do not have any agricultural lands of their own. Alternatively, 21.3 percent households do not have any productive agriculture land within the uncontrolled group.
<i>Agricultural activities</i>	In the project area among the right holders, 46.2 percent households are engaged in agricultural activities. On the other hand, 32 percent of the uncontrolled group is engaged in agriculture activities.
<i>Productive Crop</i>	Like any other parts of Bangladesh rice is also major crop for project villages. The survey revealed that, among right holders 53.1 percent farmers grow rice in their field, 2.4 percent wheat, 1.3 percent potato, 1.6 percent jute and 0.2 percent Vegetable. In case of uncontrolled group, 25 percent households' answer is Paddy, 4 percent wheat, 0.7 percent potato, 2 percent jute, and 1.3 percent households produce other maize.
<i>Seed use for agricultural production</i>	Within the right holders it is found that; 14 percent households use local, 18.4 percent households use high yielding variety, 22 percent uses both and 3.3 percent use hybrids. On the other hand, 4 percent households use local ones, 15.3 percent households use high yielding variety, 14 percent households use both and only 0.7 percent makes use of Hybrids seeds for crop production within the

	<p>uncontrolled group. In case of seed preservation, it is found that only 14.7 percent farmers are preserving seeds for future use in the right holders group, whereas within the uncontrolled group the percentage is only 7.3 percent.</p>
<i>Use of agricultural tools</i>	<p>Subsistence agriculture in rural Bangladesh is gradually shifting towards mechanized agriculture, which is manifested from the survey as well. It is found that in the right holders' group; only 3.3 percent uses traditional agricultural tools, 1.1 percent uses modern agricultural appliances and 44.2 percent use both the traditional and modern ones. Within the uncontrolled group; only 2.7 percent households use traditional ones, 13.3 percent uses modern ones and 17.3 percent households use both.</p>
<i>Obstacles of Agricultural Production</i>	<p>Among right holders group we have found quite a number flood victim and 64.9 percent recognized flood as main obstacles for agriculture production and 15.3 percent identified drought as major threat. Even though salinity ingressions still remains to minimum level, however 0.9 percent thought that salinity could be a major threat to agriculture in near future when 13.3 percent face obstacles for River bank erosion and 5.6 percent others. In case of Uncontrolled group main Obstacles for agricultural production in this area here 2.7 percent households answer is Drought, 84.7 percent Flood, 8.7 percent households obstacle is River bank erosion and 4 percent households' answer is for others.</p>
<i>Effect of climate change on agriculture</i>	<p>In the right holders group; 16.9 percent farmers noticed change of variety of crops as an impact of climate change, whereas 56.9 percent identified reduction of agricultural productivity, 9.6 percent farmers argued change of crop calendar and 1.8 percent others as the major impacts of climate change. Most of the farmers (32.7 percent) of the uncontrolled group addressed reduction of production as the major impact of climate change, 14 percent address change of variety of crop and 7.3 percent identified change of crop calendar as major climate change impact.</p>
<i>Climate change and Natural hazards</i>	<p>According to respondents among the right holders flood is the most frequent hazard faced by community and its 75.8 percent, whereas 2.2 percent respondents identified salinity, 6.9 percent respondents identified drought and 6 percent respondents identified riverbank erosion as major hazard that could incur great loss. On the other hand, 85.3 percent respondents identified flood as most frequent hazard, 6 percent identified drought and 2.7 percent identified riverbank erosion intrusion as major hazard within the uncontrolled group.</p>



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