



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

**Baseline Survey Report, 2012**  
**Sirajgonj, Bangladesh**

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

**Area: Sirajgonj, 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 living condition of the people of different villages of Tarash 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 SDS and Oxfam Novib. Further thank is here for A. Z. M. Saleh and Shahid Mr. Adnan of Unnayan Onneshan for editing the language and formatting the report.



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## **Glossary**

*Aman* - Winter rice

*Chalon Beel* - A marshy land named Chalon

*Chitta* - Mouldiness of rice

*Gala fula* - Swelling of throat

*Kabiraj* - Local ayurvedic practitioner

*Pakka* - Made of brick

*Rabi* - Spring harvest

*Samity* – Association

*Semi-pakka* - Partly made of brick

*Teel* – Sesame seed

## 1. INTRODUCTION

In Bangladesh, cyclone, floods, droughts and salinity intrusion occur frequently due to the climatic changes as well as for its unique geographical location and topography. Traditionally floods occur mostly in the northern area, north-central part, north-eastern and south-eastern part of Bangladesh from mid-April. The land of these flood prone areas is mostly located at foothills located in India. The heavy rainfalls in the Indian parts of the catchments induce to over flow in Bangladesh. Moreover, the northern part of Bangladesh is embodied by three mighty rivers namely the Padma, the Jamuna and the Brahmaputra from their respective upstreams.

The people of Sirajgonj are used to coping with floods, soil erosion and other natural disasters due to the location of the Jamuna, the longest river of Bangladesh. Sirajgonj is situated at the west of the river Jamuna and north of the river Padma. After the construction of the Bangabandhu Multipurpose Bridge (Jamuna Bridge) over the Jamuna river, the regional economy of Sirajgonj has radically changed, for the better.

Moreover, local ecosystems of Sirajgonj are influenced by periodic flooding. In spite of people's sufferings due to the impact of these floods, they are making the cultivable lands fertile through siltation and thereby shaping the life and economy of those areas. The vulnerability of the people living in these regions are increased due to different climate change impacts such as recurring but unpredictable extension of floods, increasing river bank erosion, early/late drought in dry season, increased salinity as a result of back water effect, downing ground water level etc. Hence, this region is suffering from the insufficient attention from the government. The analysis suggests that unless urgent actions are taken, climate change will undermine the efforts to ensure the food security of this region.

The project, RESOLVE stands for Regenerative Agriculture and Sustainable Livelihoods for Vulnerable Ecosystems. It 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.

The RESOLVE project is applying and demonstrating an ecosystem approach during its implementation. Other than segregating action, the project will use an integrated approach that includes field intervention, capacity building, and advocacy initiatives; with strong cross-cutting concerns for gender equity and of raising the voices of the most vulnerable households. Case studies across the world confirm the truth that 'business as usual' approach is not sufficient to support vulnerable rural communities for the unprecedented climate change related food security challenges. There is an urgent need for adopting a strategy that could mutually ensure food security while decreasing vulnerabilities to climate change impacts. The main focus of the RESOLVE project is to improve the resilience to current climate variability and future climate change of food insecure households by developing and supporting cost-effective strategies at both household and

community levels. It is further advocating for policies and measures at the local, national and regional levels that will improve food security in the context of climate change.

A pilot project in climate vulnerable and poverty stricken areas have to be implemented under the RESOLVE projects in Sirajgonj, Gaibandha, Shariatpur and Rajshahi districts for duration of two years (2011-2012). These projects will follow another two programme phases of three years each; phase one (2013-2015) and phase two (2016-2018). The model will be replicated and scaled up in different locations in the same agro-ecological zones (AEZs) or districts in phase one and in other AEZs (districts) in phase two. Since a graduation cycle of a household generally takes three to five years, therefore, each new phase will be started by replication and/or scaling up keeping continuation with the existing beneficiaries through a phase out strategy.

The design of interventions under the project predicts how the status of livelihood groups who are more vulnerable may change into the welfare in the future. Several actions will be localised such as 'climatic hot spots' in Bangladesh 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. The climatic hot spots in Bangladesh have been identified by country level research through assessing the extent to which communities will be geographically exposed to specific change (using agro-ecological zone mapping) and their capacity to adapt the impacts (using poverty map and analysis). The objective of this project has given the priority to the adaptation in agriculture that will ensure food security based on most of the people living in climatic hot spots who are dependent on agriculture.

Four non-government development organisations and one research organization grouped together are responsible to implement the projects which are based on their experiences on local context. Having long-standing experience in the selected areas, these organisations will implement the proposed activities-- Gono Unnayan Kendra (GUK) in Gaibandha, Gono Kalyan Sangstha (GKS) in Sirajgonj, and Shariatpur Development Society (SDS) in Shariatpur and Unnayan Onneshan will provide technical support to the implementing organizations.

Baseline survey report is a prerequisite to adopt for any decision making. Without having a clear picture of socio-ecological context of the project areas, intervention strategies may not be able to produce the desired output. Moreover, a measurable and verifiable system has to be developed to ensure transparency and accountability in activities so that the survey could play an important role. It is observed that existing socio-economic condition of the right holders could be explored through baseline survey. Moreover, this information will help to measure their progress towards moving from existing Condition A to expected Condition B after completing a project cycle and also the effectiveness of the intervention strategies. In this sense, baseline survey report is the reference point for monitoring and evaluation.

As a starting point of RESOLVE activity, a baseline survey has been conducted in Tarash Upazila in Sirajgonj, where GKS will implement RESOLVE activities. The overall goal of this was to prepare a socio-economic profile of right holders based on their existing situation. Moreover, another 100 households have been also surveyed in order to prepare a reference point to measure the progress of the right holders compared to those who are out of RESOLVE intervention.



## 2. THE APPROACH AND METHODS OF THE STUDY

To conduct the baseline survey, the study followed multidisciplinary approaches. A semi structured questionnaire has been developed considering socio-economic condition of the area based upon secondary literature and consultation with key stakeholders. The questionnaire then has been tested in the field to review its performance whether the questionnaire is comprehensive enough to collect required data or any inclusion or exclusion is needed. A number of observations have been suggested by the field data collectors from the field test and the questionnaire have been finalised by taking their suggestions into account. Other than the household survey, the study also used BCAS feasibility study on the RESOLVE working areas as reference point. A number of Focus Group Discussions (FGDs) have been carried to assess local people's awareness regarding climate change impacts and their attempts to confront those. The study surveyed 550 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 victims but not responsible for causing climate change. Therefore, development towards a prosperous life is their right) and the rest 100 households have been taken from outside RESOLVE intervention.

### 2.1 Selection of the Project Area and Right Holders

Three unions of Sirajgonj have been selected for the RESOLVE project which are Magurabinod union, Tarash Sadar union and Naogaon union of Tarash upazila. Since these unions are more vulnerable than others due to frequency and intensity of climatic disasters, the organizations have to implement the activities as a pilot basis in these unions. GKS has demonstrated experience to carry out project in this area, not only for climate change adaptation but also other aspects.

**Table 1: Climate change impacts and constraints of the people in the Sirajgonj district**

Climate variability	Problems	Perceived needs	Constraints of the target group
<b>Temperature</b>			
Temperature rise	Due to increased temperature, moisture in soil has been decreasing and causing problems for crop and vegetable cultivation in-time and the production has decreased.	Require information about adaptation technology	Adaptation information & technology is not available at community level
	More irrigation became a prerequisite because of the decreasing of the moisture in the soil that increased the cost of irrigation that as well as increased extraction of water from the surface and ground water sources, which affected the availability of water for future consumption in agriculture and for other purposes as well.	Need appropriate adaptation technology Need to conduct field based research	Target group has no access to relevant service providing agency/dept. and there is no available adaptation information.
	Production of fruits especially mango, black berry, jackfruit, papaya etc. has decreased.	Need to provide livestock and aquaculture health services at community level.	Lack of available funds.
	<b>Livestock resources</b> like poultry, cattle and goat have been affected by various diseases like diarrhoeal diseases, dehydration, worm etc.		
	Negatively impacts on egg production of poultry that decreases income of poultry rearers and therefore, hampers the food security of the poultry rearing households specially women.	Need to conduct vaccination and de-worming campaign.	

	<p><b>Fishery resources, aquaculture</b> and other aquatic faunal and floral resources (plants and vegetables) are badly damaged that hamper livelihoods of poor people dependent on these natural resources.</p> <p>Creates problem to <b>human health</b> by causing diseases like jaundice, fever, cold, cough, dysentery, diarrhoeal diseases, dehydration, asthma etc. gradually increases in the areas resulting into physical weakness, sometimes death and economic losses for treatment purposes</p>	<p>Boat Ambulance in chars and <i>Chalon Beel</i> area.</p> <p>Community health clinic at remote areas.</p>	
Drought	<p>Farmers can't cultivate the land in time that causes low production of crops</p> <p>Reduces fertility and productivity of agricultural land and causes vulnerability to the poor and marginal farmers.</p> <p>Huge amount of lands remain fallow due to moisture stress that decrease the cultivable land and scope of work for the farmers and agricultural labourers.</p>	<p>Need Improved agricultural practices</p> <p>Demonstration of drought tolerant variety of crops</p> <p>Alternative IGAs</p>	<p>Lack of initiatives and technology.</p> <p>Availability of funds.</p>
	<p>Increase the mortality rate of poultry birds and reduce production of eggs that hampers livelihood and earnings of the affected households.</p> <p>Affects the sources of drinking water by depletion of water table and drying out of ponds that often creates scarcity of water for drinking and irrigation.</p>	<p>Improved practices of poultry rearing activities</p> <p>Reduce dependency of ground water and create alternative water reservoir through rainwater harvest.</p> <p>Establish deep tube wells</p>	<p>Lack of poultry health service providers, vaccine and treatment</p> <p>Limited access/ no access to government resources.</p> <p>Lack of available of funds</p>
	<p>Damages crops and vegetables hamper flowering, growth and production of crops and vegetables and affected farmers face economic hardship to maintain their livelihood.</p> <p>The labourers cannot go outside for work that hampers their livelihoods</p> <p>Decrease scope of work in agriculture and other sectors.</p> <p>Affects aquaculture, hampers its growth and increases disease like wound and rotting that reduces the production of fishes.</p> <p>Live stock affected by different diseases like cold, <i>gala fula</i> (swelling of throat), indigestion etc.</p>	<p>Require information about adaptation technology</p> <p>Need appropriate adaptation technology</p> <p>Need diversified livelihood options</p> <p>Need to take precautionary measure for fish and livestock.</p>	<p>Community people are mostly poor &amp; living in vulnerable places</p> <p>Inadequate knowledge and skill about new IGA.</p> <p>Limited access to government service providing agencies/departments</p>
	<p>Increase different fungal diseases of crops and vegetables like potato, tomato, etc. and reduces their production.</p> <p>Damages of <i>Rabi</i> crops like mustard, wheat, chilli, onion, cabbage, cauliflower etc. and rice seedlings of seedbed.</p>	<p>Need to take some precaution measures.</p> <p>Fungicide spray</p>	<p>Less access to government agriculture department</p>
	Erratic behaviour of rainfall		
Rain in off season	Affects/Damage <i>teel</i> (oil seed) and vegetables during <i>Rabi</i> season.	Require information about weather	Lack of proper information about

Change of time/season	Farmers fail to plough land for cultivation of crops in time, increase diseases and pest attack and decrease its production. Poor farmers (small, marginal and sharecroppers) are being affected hugely that drags them into acute poverty.	Need appropriate adaptation technology	weather
Torrential rainfall	Affects standing crops and vegetables. Causes damage to paddy and vegetables by flooding the <i>Aman</i> paddy and making it <i>chitta</i> (unfilled), reduces the production of paddy and other crops and vegetables.	Need diversified livelihood options	Absence of active role of agriculture department
	The poor people; mainly the wage labourers, agricultural labourers, rickshaw/van pullers cannot work that causes perilous situations in maintaining their livelihoods.	Need to adjust existing crop calendar.	
	Erodes the bank of pond and wash away fishes, as a result aqua farmers lose their income.	Pond embankment raising	
	Affects the livelihoods and income earnings of the agriculture & non-agriculture labourers and decreases the scope of work	Improving existing coping capacity. Knowledge & technologies for land use change for getting alternative crops in other seasons	
Flood	Carries on sand and deposit in the agricultural land that makes the land barren and unsuitable for cultivation.	Need to remove the sand.	Weak embankment and infrastructure
	Farmers can't cultivate land timely due to late rejection of water thus, agricultural lands remain fallow.	Crop selection for sandy soil.	Availability of funds.
	Late flood damages ripen <i>Aman</i> paddy and affect cultivation of <i>Rabi</i> crops (mustard, wheat, pulse and other vegetables)	Cultivation of late variety.	Lack of government initiatives.
	Huge numbers of poor and marginal households including farm labourers lose scope of work.	Alternative livelihood options.	Less adaptive capacity.
	Washes away fish stock from ponds and damages the banks of ponds that causes huge economic declination for the aquaculture farms	Pond re-excavation and raising embankment.	
	Damages livestock shelters and often washes away the cattle, goats and sheep and thus creates scarcity of livestock feed.	Construction of kella/cattle shelter.	
	Outbreak different diseases for poultry and livestock. Women, poor and marginal farming households lose their family income and that worsens their poverty.	Need to raise the homestead plinth	
	Damages living houses, mainly the weakly structured houses of the poor and makes them shelter-less. Creates problems for cooking food.	Flood water tolerant tree plantation	
	Uproots and damages trees and summer vegetables	Installation of raised tube well and latrine	
	Affects water resources in different ways including inundation of open water sources, tube wells and thus pollutes water.	Need to establish gender friendly flood shelter.	
	Women collect safe drinking water from long distance during and after the disaster period.	Crop insurance	
	Scarcity of safe drinking water leads to various waterborne diseases (diarrheal diseases, skin diseases etc.)		

	Damages latrines and causes sanitation problem. It pollutes surface water sources and causes acute scarcity of safe water.		
	Women face acute difficulty in safe defecation because of lack of safer and higher places.		
River erosion	Erode homestead lands, cultivable/cultivated lands with standing crops ( <i>Amon, Boro</i> Paddy, Jute, sugarcane, chili and vegetables).	Need emergency food support Need action to resettle them Cluster village to rehabilitate the victims	Government recognition and initiative.
	Poor, marginal farmers and share croppers become more vulnerable by losing their lands and livelihood sources.		Political willingness
	Erodes houses, losses household assets, trees etc.		Fund availability
Seasonal Changes	Cold loving crops and vegetables are being affected due to decrease of winter season.	Adjustment of crop calendar. Early variety cultivation	Lack of proper initiative and study/ research Investment

However, the economy as well as ecology of the selected areas is are being squeezed day by day due to the flood and drought. Flood is considered as one of the major climatic hazards in the target area. This flood induced sediment influx; cold wave and drought etc. have pronounced effects on life and economy of the area. Land of this union is being eroded every year and thus many people are becoming landless. The major occupations of the villagers are agriculture, wage labor, fishing, carpenter and small business. Most of the families are either very or moderately poor. Around 35 percent people are using sanitary latrine and remaining others are using either hanging latrine or open places for sanitary purposes. It is therefore pragmatic to state that poverty and recurrent exposure to climatic hazard are the main reasons behind selecting the area for pilot intervention under RESOLVE project.

## 2.2 Secondary Data

The secondary data on population, households etc. of villages under the Tarash upazila have been obtained from the published documents of Bangladesh Bureau of Statistics (BBS). The census reports of 1991 and 2001, the B.B.S. Household Expenditure Survey of 2005 (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. Moreover, data have also been taken from Local Government Engineering Department, Banglapedia, Wikipedia and some other web links related to this issue.

## 2.3 RESOLVE Villages

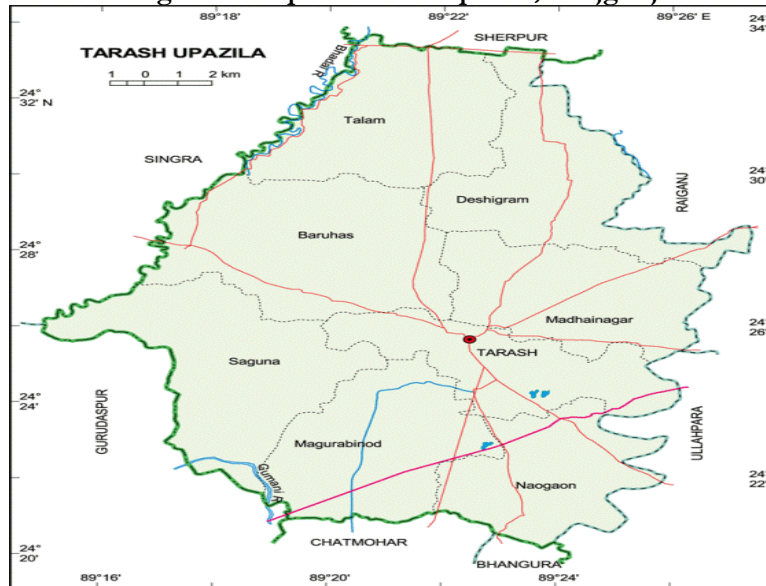
To implement RESOLVE, a number of villages under Tarash upazila of Sirajgonj district have been selected purposively considering their grave vulnerability to climate change and high occurrence of poor people. Total 550 households have been surveyed in the baseline study, out of which 450 households have been covered under RESOLVE and the rest 100 households (who are not intervened by RESOLVE) will be used as reference point to measure the progress of the right holders compare to them.

### 2.3.1 Geographic and demographic profile of Tarash Upazila

Tarash Upazila (Sirajgonj district) with an area of 297.20 sq km, is bounded by Sherpur (Bogra) upazila in the north, Bhangura and Chatmohar upazilas in the south, Raiganj and Ullahpara upazilas in the east, Gurudaspur and Singra upazilas in the west. Gumni River is notable here. Tarash is on 89°18' to 89°26' East Longitude and 24°20' to 24°34' North Latitude of the earth. Tarash (Town) consists of one mouza. The area of the town is 5.09 sq km. The town has a population of 5,368; male 53.70 percent and female 46.30 percent. Literacy rate among the town people is 38.4 percent. Administrative Tarash thana was turned into an upazila in 1983. The upazila consists of eight union parishads, 179 mouzas and 277 villages. Deshigram union has a high school namely Khalilur Rahman K.R High School which was established in 1977.

The Population of this upazila is 1,35,435 where male are 50.21 percent and female are 49.79 percent. Among them, Muslim, Hindu and others are 89.03, 10.88 and 0.09 percent respectively. Main occupations are agriculture at 55.5 percent, agricultural labourers 31.86 percent, wage labourers 1.35 percent, commerce 3.32 percent, service holders 1.77 percent and others 6.22 percent. Among the peasants 24 percent are landless, 42 percent are small, 25 percent are intermediate and 9 percent are rich peasants. The average literacy rate of this upazila is 22.6 percent among of them 30.25 percent are male and 14.9 percent female. There are 5 colleges, 25 high schools, 16 madras, 2 technical training, 49 government primary school, 75 non-government primary schools and some other community schools. Noted educational institutions are Tarash Degree College (1972), Tarash High School (1962) and Tarash Senior Madrasha (1982). There are 20 cultural clubs, one public library, two cinema halls, one theatre stage and four women's organizations. There are 248 religious mosques, five temples, two churches and five tombs.

Figure 1: Map of Tarash Upazila, Sirajgonj



Main crops produced here are paddy, wheat, mustard seed, onion, garlic and kalan. Main fruits are mango, jackfruit, guava, papaya, watermelon, cucumber and banana. Main exportable items are paddy rice, fish and watermelon.

During the rainy season, the communication facility of this area is mainly by road and by boat-- there are 16 km *pakka*, 40 km *semi-pakka* and 350 km mud roads. Most of the transport is either extinct or nearly extinct. The main traditional transports are palanquin, bullock cart and horse carriage. Twenty two main hats, bazaars and fairs Hats are there in this upazila where the most noted hats and bazaars are Baruhash, Binshara and Gulta Bazar. This local has mainly three fairs; the most noted of which is Behula Mela. Operationally active important NGOs of this area include BRAC, ASA, Proshika and also the specialized Bank Grameen bank.

### 3. DEMOGRAPHIC FEATURES OF RESOLVE VILLAGES

Male headed and female headed households are 74.7 and 25.3 percent respectively among 450 right holders. On the other hand, among 100 uncontrolled households, male headed household is 86 percent and 14 percent household is female headed.

Total population size of the right holders' family is 1659; out of which the share of male and female members is 46.23 and 53.76 percent respectively. In case of family composition, 9.6 percent household has one member, 13.3 percent household has two family members, 21.3 percent household has three family members, 27.3 percent household has four family members, 17.6 percent household has five family members, 6.7 percent household has six family members, 2.7 percent household has seven family members, 1.3 percent household has eight Family members and 0.2 percent household has nine members.

**Table 2: Family composition of right holders and uncontrolled group**

Right Holders Group	Frequency	Total Members	Valid Percent	Uncontrolled Group	Frequency	Total Members	Valid Percent
1	43	43	9.6	1	6	6	6
2	60	120	13.3	2	13	26	13
3	96	288	21.3	3	19	57	19
4	123	492	27.3	4	38	152	38
5	79	395	17.6	5	16	80	16
6	30	180	6.7	6	6	36	6
7	12	84	2.7	8	1	8	1
8	6	48	1.3	9	1	9	1
9	1	9	0.2				
<b>Total</b>	<b>450</b>	<b>1659</b>	<b>100</b>	<b>Total</b>	<b>100</b>	<b>374</b>	<b>100</b>

However, the baseline survey has revealed that a total of 450 family members belong to 100 uncontrolled households within which six percent household has one family member, 13 percent household has two family members, 19 percent household has three family members, 38 percent household has four family members, 16 percent household has five family members, six percent household has six family members, one percent household has eight family members and one percent family has nine family members.

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

Household members by age	Households Members Compositions	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	104	207	6.27	12.48
	Number of female members between age 0-5	103		6.21	
Number of members between age 6-14	Number of male members between age 6-14	207	420	12.48	25.32
	Number of female members between age 6-14	213		12.84	
Number of members between age 15-59	Number of male members between age 15-59	425	957	25.62	57.69
	Number of female members between age 15-59	532		32.07	
Number of members age 60+ and above	Number of male members age 60+ and above	31	75	1.87	4.52
	Number of female members age 60+ and above	44		2.65	
<b>Total</b>		<b>1659</b>	<b>1659</b>	<b>100</b>	<b>100</b>

**Table 4: Distribution of family members by age and sex of the 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	26	58	7.0	15.5
	Number of female members between age 0-5	32		8.6	
Number of members between age 6-14	Number of male members between age 6-14	44	88	11.8	23.5
	Number of female members between age 6-14	44		11.8	
Number of members between age 15-59	Number of male members between age 15-59	102	209	27.3	55.9
	Number of female members between age 15-59	107		28.6	
Number of members age 60+ and above	Number of male members age 60+ and above	9	19	2.4	5.1
	Number of female members age 60+ and above	10		2.7	
<b>Total</b>		<b>374</b>	<b>374</b>	<b>100</b>	<b>100</b>

In case of number of female members among the right holder group, it is observed from the study that 39.8 percent household has one female member, 33.6 percent household has two female members each, 18.0 percent household has three female members, 6.2 percent household has four family members, 1.8 percent household has five and 0.7 percent household has six female members

each. On the other hand, within uncontrolled group, 37 percent household has one female member, 36 percent household has two female members, 24 percent household has three female members, and two percent household has four and only one percent family has six female members.

**Table 5: Number of female member in right holder and uncontrolled households**

Right Holders Group	Frequency	Total Members	Valid Percent	Uncontrolled Group	Frequency	Total Members	Valid Percent
1	179	179	39.8	1	37	37	37
2	151	302	33.6	2	36	72	36
3	81	243	18	3	24	72	24
4	28	112	6.2	4	2	8	2
5	8	40	1.8	5	1	5	1
6	3	18	0.7				
<b>Total</b>	<b>450</b>	<b>894</b>	<b>100</b>	<b>Total</b>	<b>100</b>	<b>194</b>	<b>100</b>

## 4. OCCUPATIONAL STRUCTURE

### 4.1 Primary Occupation

From the baseline survey it is found that 14.4 percent household's primary occupation is agriculture, 72.9 percent are wage labourers, 1.8 percent is small businessman, 0.7 percent is fisherman, 5.8 percent is Van puller, 1.1 percent is carpenter and 3.3 percent is in other occupation within 450 households.

On the other hand, among the uncontrolled group, 41 percent household's main occupation is farming, 52 percent is labourer, one percent of household is engaged in small business, two percent is Van-puller and four percent household head engage themselves in other occupations.

**Table 6: Distribution of primary occupation of right holders and uncontrolled group**

Primary Occupation	Frequency	Valid Percent	Primary Occupation	Frequency	Valid Percent
Farmer	65	14.4	Farmer	41	41
Labor	328	72.9	Labor	52	52
Small business	8	1.8	Small business	1	1
fishermen	3	0.7	Van puller	2	2
Van puller	26	5.8	Others	4	4
Carpenter	5	1.1			
others	15	3.3			
<b>Total</b>	<b>450</b>	<b>100</b>	<b>Total</b>	<b>100</b>	<b>100</b>

### 4.2 Secondary Occupation

Some of the right holders are engaged in the secondary occupations which totally depend on the seasonal demand. However, 58.9 percent of the right holders are only engaged in a single occupation. The survey shows that 8.2 percent households' heads are engaged in agriculture as a secondary occupation, 10.2 percent is labourers, 0.7 percent does small business, 12.2 percent is fisherman, 4.9 percent is housewife, 0.2 percent is service holders, 1.1 percent is van puller, 0.2



percent is *kabiraj*, 0.9 percent is carpenter and 2.4 percent households' heads are engaged in other activities as a secondary option, particularly in lean period. On the other hand, 29.0 percent household is found to be engaged in their primary occupation in case of uncontrolled group. 12.0 percent of this uncontrolled group is engaged in farming, 23.0 percent is labourers, 4.0 percent is in small business, 10 percent is working as fisherman, 14.0 percent is Van puller and only eight percent engaged themselves in other secondary occupations.

## 5. EDUCATION

In the right holder group, education status is quite unsatisfactory; 24.1 percent member is illiterate who are above 15 years out of which 10.7 percent is male member and 13.4 percent is female members. The number of male members who can only sign their names is 15.7 percent and 21.5 percent is female members out of the 37.3 percent households who can do so. The percentage of female members who can only read and write is 0.3 percent. In the case of the members who have the education below Class five and education between Class five and ten, the percentage share of female members are higher than that of male education. In addition, 25.2 percent of the total members who have the education below Class five include 13.4 percent female member and only 11.8 percent male members. However, 3.2 percent members are there who have completed SSC and above out of which only 1.2 percent female member are there.

**Table 7: Distribution of family members education according to age and sex within right holders group**

Composition of educational qualification	Composition of educational qualification by age and sex	Percentage by sex	Total percentage
Number of members who are illiterate, age above 15	Number of male members who are illiterate, age above 15	10.7	24.1
	Number of female members who are illiterate, age above 15	13.4	
Number of members who can only sign, age above 15	Number of male members who can only sign, age above 15	15.7	37.3
	Number of female members who can only sign, age above 15	21.5	
Number of members who can only write & read, age above 15	Number of male members who can only write & read, age above 15	0.5	0.8
	Number of female members who can only write & read, age above 15	0.3	
Number of members who have education below class 5	Number of male members who have education below class 5	11.8	25.2
	Number of female members who have education below class 5	13.4	
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	4.7	9.6
	Number of female members who have education between class 5 and class 10	4.9	
Number of members who have education SSC and above	Number of male members who have education SSC and above	2.0	3.2
	Number of female members who have education SSC and above	1.2	
<b>Total</b>		<b>100</b>	<b>100</b>

On the other hand, 8.1 percent female member in the uncontrolled group is illiterate (age above 15). The percentage share of female members who can only sign is 21.8 percent which is also the same for the male members. In case of the members who can only read and write, none of the female members can read and write. However, 15.3 percent female members have educated below Class

five while 14.3 percent male have educated below this class. The percentage share of female and male members who have education in between Class five and ten are 5.8 and 4.2 percent respectively. In addition, only 0.3 percent female members have completed SSC and above graduation whereas two percent male member have completed their SSC and above graduation.

**Table 8: Distribution of family members education according to age and sex within uncontrolled group**

Composition of educational qualification	Composition of educational qualification by age and sex	Percentage by sex	Total percentage
Number of members who are illiterate (age above 15)	Number of male members who are illiterate,(age 15+)	6.2	14.3
	Number of female members who are illiterate (age 15+)	8.1	
Number of members who can only sign (age above 15)	Number of male members who can only sign (age 15+)	21.8	43.5
	Number of female members who can only sign (age 15+)	21.8	
Number of members who can only write & read (age above 15)	Number of male members who can only write & read, (age above 15)	0.3	0.3
	Number of female members who can only write & read (age above 15)	0.0	
Number of members who have education below class 5	Number of male members who have education below class 5	14.3	29.6
	Number of female members who have education below class 5	15.3	
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	4.2	10.1
	Number of female members who have education between class 5 and class 10	5.8	
Number of members who have education SSC and above	Number of male members who have education up to SSC and above	2.0	2.3
	Number of female members who have education up to SSC and above	0.3	
	<b>Total</b>	<b>100</b>	<b>100</b>

## 5.1 Enrollment

The total members of current enrollment in school and colleges have been found at 399 within 450 right holders' households. Out of which, 47 percent is male and 53 percent is female. On the other hand, total 80 members have enrolled in school and college of the uncontrolled group, whereas the ratio of male and female enrollment in the current enrollment in school and colleges are the same at 50 percent.

**Table 9: Enrollment status of right holders and uncontrolled group**

<b>Current enrollment in schools and colleges of right holders</b>	Total	Male =187 47 percent	100 percent
	399	Female=212 53 percent	
<b>Current enrollment in schools and colleges of uncontrolled group</b>	Total	Male =40 50 percent	100 percent
	80	Female=40 50 percent	

## 5.2 Dropout

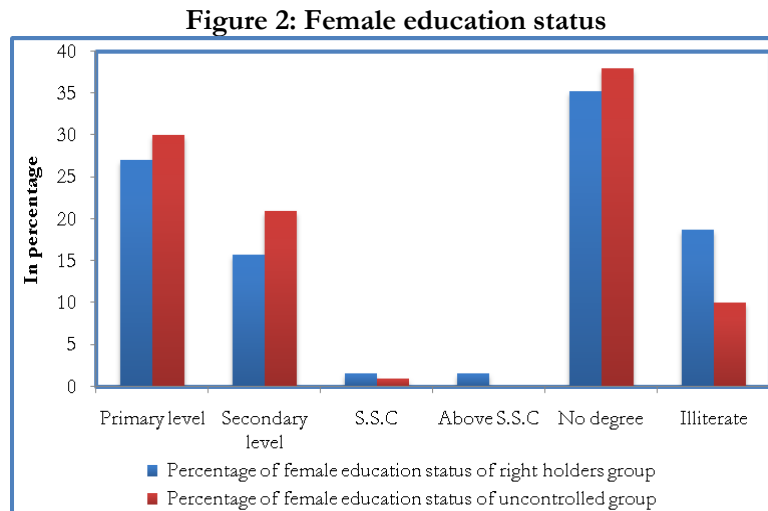
In right holders' household, dropout rate is 12.2 percent, which is six percent in case of the uncontrolled group. While identifying the reasons of dropout in the right holders' group, it is found that only 9.1 percent is dropped out for financial insolvency. Besides financial insolvency, assisting in income earnings for the family (1.8 percent), households' chores (1.1 percent) and natural calamities (0.2 percent) are the three major reasons behind this dropping out. On the other hand, two percent out of 100 households is dropped out to assist in family income and four percent is dropped for the financial insolvency in the uncontrolled group.

## 5.3 Adult Education

It is surprising that there is no facility for the adult education both in the right holder and uncontrolled groups. According to the baseline survey, it is observed that among the 450 right holder's households no one has been found to have adult education facilities. Alternatively, no one has received adult education facilities in the uncontrolled group.

## 5.4 Female Education

Within the right holders; 27.1 percent of the female members has obtained primary level education, 15.8 percent has obtained secondary level, 1.6 percent has pursued above S.S.C and 35.3 percent female members of the household have no degrees at all. The rest (18.7 percent) of the households' female members are illiterate.



On the contrary; 30.0 percent female member has obtained primary level degree, 21.0 percent has secondary level education, one percent household has gained above secondary level education. In addition, 38.0 percent household female member do not have any degree and 10 percent female member is illiterate. Though female illiteracy rate is higher both in right holders and uncontrolled group, current enrollment rate is satisfactory in both cases. It seems that the people of RESOLVE area are wellaware of benefits of female education. However, 0.2 percent girl has informed that they

are facing difficulties in going to school because of family restrictions. While girls from the uncontrolled group are not facing any obstacles of financial insolvency.

Through the baseline survey an investigation has been made in the mode of communication used for schooling. Within the right holders, 4.0 percent is using different vehicles (van/rickshaw/bus) and 53.1 percent of the total students are reaching their respective institutions on foot. In case of uncontrolled group, 56.0 percent household is covering the distance by foot, one percent households' mode of communication is van/rickshaw/bus. However, this particular inquiry was not applicable for 42.9 percent and 43.0 percent households in right holders and uncontrolled group respectively as no school-going children have been found in those houses.

## 6. INCOME AND EXPENDITURE

### 6.1 Income

In the right holder's group, most of them are comparatively better off because of their annual income is more than Tk. 41000 (USD 512). The baseline study revealed that 63.6 percent right holders' annual income is equal or more than Tk. 31000. However, 36.4 percent right holder is extremely poor and their annual income is lower than Tk.30000.

**Table 10: Income information of right holders and uncontrolled group**

<b>Estimated yearly income of right holders</b>	<b>Frequency</b>	<b>Valid percent</b>	<b>Yearly income of uncontrolled group</b>	<b>Frequency</b>	<b>Valid percent</b>
Less than 10,001	2	.4	2400 to 10000	0	0.0
10001 to 20000	62	13.5	10,001 to 15000	7	7.0
21000 to 30000	101	22.5	15,001 to 25,000	6	6.0
31000 to 40000	108	24.4	25,001 to 35000	14	14.0
41000 to 90,000	177	39.2	35001 to 45000	39	39.0
			45001 to 83000	34	34.0
<b>Total</b>	<b>450</b>	<b>100.0</b>	<b>Total</b>	<b>100</b>	<b>100</b>

On the other hand, within the uncontrolled group, 27 percent has been identified as extreme poor whose income is equal or less than Tk. 35000. However, 73 percent right holder in the uncontrolled group has been observed with their annual income of equal or more than Tk. 45001.

### 6.2 Expenditure

There is a discrepancy between the income and expenditure in the RESOLVE area. Even though more than 36.3 percent right holders have an annual income of less than 30000 taka, while 69.8 percent right holders' yearly expenditure is more than 30000 taka. The main reason behind this additional expenditure come from the aids received from different government and NGO programmes. However, a reverse scenario is discovered in the uncontrolled group where 19 percent households have an annual income of less than 30000 Taka while only 17 percent household's expenditure was less than 30000 taka and 83 percent household have an annual expenditure of more than 30000 taka.

### 6.3 Feeding Capability

As most of the right holders are not extremely poor, most of them can be able to arrange food three times in day. The baseline data depicts that 56.5 percent of the total households can get a meal of three times in a day. It also predicts that only 2.3 percent of the total households' members can have a meal once each day (that is not square even) whereas 43.3 percent households' member eats twice every day. Feeding scenario is also satisfactory for uncontrolled group. Within the uncontrolled group, 89 percent of the total household members eat thrice a day and 11.0 percent households' family members eat two times in a day. Moreover, no household head is capable of feeding his/her family members three times in a day in case of the uncontrolled group.

**Table 11: Households feeding capability of right holders and uncontrolled group**

Members eat each day within uncontrolled group	Frequency	Valid percent	Members eat each day within right holders	Frequency	Valid percent
2 time	11	11.0	One time	1	.2
3 time	89	89.0	Two time	195	43.3
			Three time	254	56.5
<b>Total</b>	<b>100</b>	<b>100.0</b>	<b>Total</b>	<b>450</b>	<b>100.0</b>

## 7. DESCRIPTION OF DWELLING

### 7.1 Ownership Pattern

Within 450 right holders, 77.6 percent have their own houses and 22.4 percent of the total households have ownership of house in other ways. No one is living in the rented house. 68.9 percent has one room, 27.6 percent has two rooms and only 3.6 percent have three rooms. One bed room has been found in 76.9 percent household of the right holders. 21.3 percent household has two rooms and 1.6 percent household has three bed rooms. On the other hand, 99.0 percent of uncontrolled group has their own house and only one percent household has the ownership of house in other ways. 99 percent households of the uncontrolled group are living in a house of three rooms and 69 percent has only one room. However, 79 percent household has only one bed room and only three percent household has three bed rooms to sleep.

**Table 12: Households ownership status of right holders and uncontrolled group**

Ownership of house	Frequency	Valid percent	Ownership of house	Frequency	Valid percent
Owned	349	77.6	Owned	99.0	99.0
Others	101	22.4	Others	1	1.0
<b>Total</b>	<b>450</b>	<b>100.0</b>	<b>Total</b>	<b>100</b>	<b>100.0</b>

### 7.2 House Materials

Most of the right holders' household floor (99.33 percent) is made of mud and the rest (0.67 percent) is made of concrete whereas 99 percent household's floor is made of mud and only one percent is made of concrete of the uncontrolled group. In case of roof; 98.22 percent is covered by tin, 1.33 percent materials of roof is of straw/Golpata and 0.44 percent is of mud. Correspondingly for the uncontrolled group, 98 percent household's roof is prepared by tin and only in two percent

straw and Golpata has been used. In addition, only 16.67 percent households' wall in the right holders group is prepared by mud, 10.44 percent has got bamboo-made wall, 0.22 percent is of concrete, 24.22 percent is made of straw/Golpata, 48.44 percent household' wall is made of tin. Similarly, 61 percent households' materials of wall is made by tin, 19 percent is made of Straw/ Golpata, 16 percent houses material of wall is made by mud and four percent house materials of wall is made by bamboo and other materials.

### **7.3 Road Communication:**

Most of the households (78.9 percent) of right holders are surrounded by mud, 0.7 percent is brick-made and 20.4 percent of road surrounding the house is made of concrete whereas 100 percent house of the uncontrolled group is surrounded by mud.

### **7.4 Source of Light**

Only eight percent of household of the right holders has the access to electricity. 91.3 percent house depends on Kerosene and 0.7 percent use solar energy as for source of light. On the other hand, 78.0 percent and 21.0 percent household of the uncontrolled group use kerosene and electricity respectively. Solar energy as a source of light is used by only one percent household.

#### **a. Cooking System**

Almost all the houses of both the right holders (68.9 percent) and the uncontrolled group (79.0 percent) have been practicing their culinary in open places. The separate place for cooking for the right holders and uncontrolled group is found only 30.2 percent and 20.0 percent respectively. In the right holders group, only 0.9 percent right holders are cooking in the living room and one percent of the uncontrolled group is using the living room as kitchen.

#### **b. Fuel System**

The right holders depend on nature for fuel. 100 percent of the right holders use leaves or straws as fuel and collect those from their surroundings. Similarly, all of the households of the uncontrolled group use leaves and straw as fuel. It is quite common everywhere in rural Bangladesh, where female members of the family are responsible for collecting fuel and the uncontrolled group area also showed the same pattern whereas 100 percent female members are responsible for collecting the fuel. However, the RESOLVE project area showed the notable pattern as 99.3 percent female is included in collecting fuels. In addition, 0.2 percent male is also included in collecting fuel and 0.4 percent of both male and female are engaged in this responsibility.

The RESOLVE projects showed that the time required for collecting fuel (in minutes) is different for different households. The maximum number of households (68.0 percent) needs 60 minutes to collect the fuel, 9.6 percent household needs less than 35 minutes, 11.3 percent household requires 35 to 50 minutes and 10.4 percent household needs to spend 75 to 120 minutes. Within the uncontrolled group, maximum households need (61.0 percent) 60 minutes in collecting fuel and 39 percent household needs to spend 30 to 50 minutes.

## **8. WATER AND SANITATION**

### **8.1 Drinking Water**

Over the decades rural Bangladesh has been dependent upon tube well for drinking. Similarly, all the households of the right holders and uncontrolled group 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 found that only 34.4 percent house hold has tube wells in their house premise and they collect water within two to five minutes, 38.4 percent needs 6-15 minutes, 14.2 percent household needs 20 minutes and 12.9 percent need 25-45 minutes to collect drinking water from the source. In case of collection frequency, it is found that 2.7 percent household collects twice, 74 percent household collects thrice, 12.4 percent household collects four times and 10.8 percent household collects five to eight times to meet their demand of drinking water.

Alternatively, Seventy-one percent household needs to spend one to ten minutes and 29 percent household needs to spend 12 to 20 minutes to collect drinking water from the source. From the baseline survey, it is found that 46 percent household collects drinking water three times in a day, it is twice in case of 36.0 percent and 18 percent household collects five to six times a day.

### **8.2 Cooking Water**

All of the households of the right holders and uncontrolled groups are dependent on the tube wells for cooking water. In case of collection time, it is found that 58.8 percent household need less than 11 minutes, 39.6 percent household need to spend 12 to 30 minutes for collect their cooking water and 35-45 minutes are required for 1.5 percent households only. In case of the collectors, only 0.4 percent is male, 91.6 percent is female and 8.0 percent of it is being collected by both male and female. It is surveyed that 80.7 percent household need two minutes to collect the cooking water in a day, 18.7 percent households need three minutes, 0.4 percent household need four minutes and only 0.2 percent household need one minutes in a day.

Within the uncontrolled group, it is found that 71 percent household need to spend 1 to 10 minutes to collect cooking water and rest 29 percent households needs to spend 12 to 20 minutes. In case of the collector, 95 percent collectors are female, only one percent is male collectors and four percent are both of female and male collectors here. While counting cooking water collection frequency, it is found that 52.0 percent household collect twice a day and 48.0 percent household collect thrice each day.

### **8.3 Availability of Water**

In Sirajgonj, availability of water till now is not a concerning issue from right holders' response as evidence. 65.8 percent households do not face problems of any sort in water collection and 34.2 percent households face the problem of water supply. The households in the right holders (5.6 percent) and uncontrolled group (36.0 percent) who are facing problem in availability of water supply depend on tube wells, ponds and other sources. The situation is similar in the uncontrolled group. 55 percent household has no problem in availability of water supply and 45 percent household responses negatively regarding the availability of water.

## 8.4 Bathing and Washing Water Source

Majority of the right holders depend on river or ponds (89.3 percent) and 10.7 percent depends on tube wells for washing cloths and bathing purposes. Within the uncontrolled group, 86.0 percent household use river/pond for washing and bathing. Only 14 percent household depends on tube-well for this purpose.

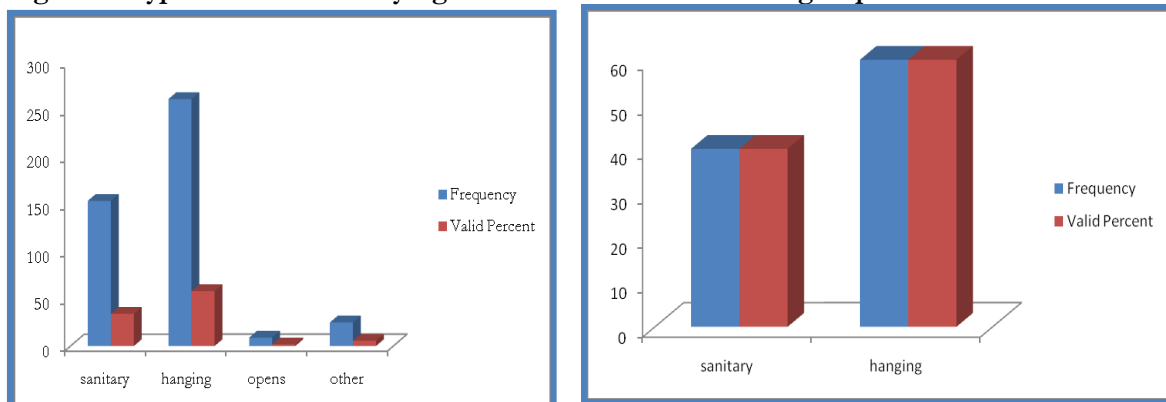
## 8.5 Sanitation System

### 8.5.1 Toilet

In case of sanitation, 34.2 percent people use sanitary toilet, 58.2 percent use hanging ones, 1.8 percent use open place for defecation and 5.6 percent use other types of toilet. In the baseline survey, it is found that 91.8 percent household has only one toilet and shockingly 7.1 percent household has no toilet. In case of distance between toilet and source of drinking water, it is found that 4.2 percent household do not face any distance, 32.46 percent household is within 11 meters, 65.22 percent is within 11 to 40 meters and the rest of them (2.32 percent) have a distance of 50 to 200 meters.

On the contrary; within the uncontrolled group, 40 percent uses sanitary toilets and 60 percent uses hanging toilets. 98 percent household has one toilet and only two percent has no toilet. In case of using the toilet, 97 percent uses own toilet and 3 percent shares toilet with others. In case of distance between toilet and source of drinking water it is found that 33 percent is within 0 to 10 meters, 63 percent is within 12 to 35 meters and four percent is within 40 to 100 meters.

**Figure 3: Types of toilet used by right holders and uncontrolled group**



## 8.6 Waste Management

Waste management system is very poor in rural areas resulting from the lack of awareness and technical knowledge. From the survey it is revealed that almost all household of right holders are placing their waste in open places. However, positive approach is that 100 percent household cleans the garbage area daily. Moreover, 0.2 percent of the right holder's groups dispose the garbage from the dumping place once in a month and 99.6 percent have never cleaned the garbage from the dumping place.



The baseline survey gives an impression of the right holders' inadequacy of technical knowledge and awareness on using garbage as organic fertiliser. It is found that only 2.9 percent household use garbage as organic fertiliser and only 99.6 percent household even do not use the garbage as organic fertilizer. In the case of garbage put in, 78.2 percent household is found to use the open place, 21.6 percent household uses rivers and ponds to dump the garbage and only 0.2 percent household puts the garbage in another place.

In case of the uncontrolled group, 59 percent is found to dump waste in open places and 41 percent household's garbage is put in river or ponds. It is surprising that all of the household members from uncontrolled group have never cleaned the garbage from the dumping place. In case of preparing organic fertiliser from waste, it is found that 99.0 percent household uses garbage as an organic fertiliser and the rest 1 percent never does it.

## 9. HEALTH

### 9.1 Disease

While considering health situation of right holders, it is found that 2.2 percent household members is affected by fever, 1.1 percent by cough, 0.9 percent by Diarrhea, 92.0 percent by Influenza, 2.4 percent by Typhoid and 1.3 percent has got headache. In case of method of treatment, 99.6 percent takes allopathic medicine and 0.4 percent goes for *Kabiraj* options.

In case of the uncontrolled group, one percent family member is affected by Diarrhea, five percent is affected by headache and 94 percent household's member is affected by Influenza. Here 100 percent households use allopathic method of treatment.

**Table 13: Diseases occurrence among right holders and uncontrolled group**

<b>Disease frequently affects the right holder group</b>	<b>Frequency</b>	<b>Valid percent</b>	<b>Disease frequently affects the uncontrolled group</b>	<b>Frequency</b>	<b>Valid percent</b>
Fever	10	2.2	Diarrhea	1	1.0
Cough	5	1.1	Influenza	94	94.0
Diarrhea	4	.9	Headache	5	5.0
Influenza	414	92.0			
Typhoid	11	2.4			
Headache	6	1.3			
<b>Total</b>	<b>450</b>	<b>100.0</b>	<b>Total</b>	<b>100</b>	<b>100.0</b>

The scenario of access to formal medical facility is projecting a concern picture. Almost 22.9 percent household of the right holders group uses government and 10.4 percent household use non-governmental treatment while 66.7 percent use the other treatment. Likewise, 92 percent of the uncontrolled group relies on other medical treatment and only 8.0 percent use the non-government medical facilities for treatments.

While investigating the reasons for not using formal medical facilities, it is found that distance is the most significant factor for the lack of interest in taking formal medical facilities. From the survey, it is depicted that 0.4 percent household has to travel seven minutes to reach the nearest formal medical facility and 30.4 percent needs to travel at least 15 minutes, 18.8 percent household needs to travel 30 minutes, 2.0 percent needs to travel 40 minutes and 0.4 percent is required to travel 50

minutes to reach the nearest medical center in order to avail formal medical facilities. In case of the uncontrolled group, 48 percent household has to travel 20 minutes to reach the nearest medical centre. 27 percent household has to travel 30 minutes to reach the nearest medical center.

## 9.2 Immunization of Children

The rate of children immunization does not depict a satisfactory picture. Within the right holders group, only 36.0 percent children (below five years) get complete immunization and 1.6 percent children has completed partial immunization. However, 62.4 percent household is not responsible for this issue.

In contrast, the uncontrolled group shows a satisfactory picture in case of immunization. 49.0 percent household has completed immunization of their children and only 1.0 percent household has completed it partially. In case of immunization, 50 percent household is not applicable for this situation.

**Table 14: Immunization status of children of right holders and uncontrolled group**

Immunization of children	Frequency	Valid percent	Immunization of children	Frequency	Valid percent
Completed	62	36.0	Completed	49	49.0
Partially completed	7	1.6	Partially completed	1	1.0
Not applicable	281	62.4	Not applicable	50	50.0
<b>Total</b>	<b>450</b>	<b>100</b>	<b>Total</b>	<b>100</b>	<b>100</b>

## 9.3 Birth Control

In case of birth control, 67.8 percent reproductively active women use birth control system and 2.9 percent do not want to use this system from right holders group. Moreover, 29.3 percent did not response to this system. Religious restriction (0.4 percent) and other views (1.6 percent) is the main reason behind female members' lack of interest in using birth control methods.

**Table 15: Birth control status of right holders and uncontrolled group**

Receive birth control of right holder group	Frequency	Percentage	Receive birth control of uncontrolled group	Frequency	Percentage
yes	305	67.8	Yes	81	81.0
no	13	2.9	No	3	3.0
not applicable	132	29.3	not applicable	16	16.0
<b>Total</b>	<b>450</b>	<b>100.0</b>	<b>Total</b>	<b>100</b>	<b>100.0</b>

Regarding uncontrolled group, 81.0 percent reproductively active women are using birth control methods whereas 3 percent household does not receive birth control case. They are not aware of birth control methods and the rest do not take birth control for various reasons.

## 9.4 Maternal Health Facility

Maternal health facility is inadequate in RESOLVE areas. Only 36.0 percent of the right holders have received maternal health facilities during pregnancy period and 50.7 percent female member is being checked up during their pregnancy period. 63.6 percent households' female member has never been checked up, 16.7 percent have been checked up twice during their pregnancy period, 9.6 percent have been checked up once, 8.7 percent households' female have been checked up three times and only 1.6 percent household have been checked up four times before delivery. Surprisingly, 95.6 percent female member does not check up after the delivery period, 2.7 percent have got check up only one time and only 0.2 percent has it thrice after delivery. In case of delivery, it is seen that 83.3 percent of the total delivery has been done by midwife, 2.7 percent delivery has been done by trained medical personnel within right holders group.

The situation is slightly better in case of the uncontrolled group. Within this group, 35.0 percent female of the total households have received formal maternal health facilities during pregnancy. It is observed that 66.0 percent household have never taken any maternal health facilities, four percent household have taken only one facility before delivery and 22 percent have taken facilities two times before delivery. In the case of medical treatment after delivery, it is found that 99.0 percent do not take any facilities and only one percent households take only one time after delivery. In case of delivery, it is seen that 95.0 percent of the total delivery has been done by midwife, two percent delivery done by trained medical personnel within 100 households.

## 9.5 Vaccination during Pregnancy

Within the right holders 67.6 percent pregnant women have taken vaccination during pregnancy, 19.1 percent have not taken any vaccination during pregnancy and 13.3 percent household is not applicable for this question. On the other hand, 73.0 percent pregnant women of the uncontrolled group have taken vaccine during pregnancy and 24.0 percent household have not taken any vaccine during pregnancy. Moreover, no response to this question is found from 3 percent within 100 uncontrolled households.

## 10. AGRICULTURAL AND LAND DISTRIBUTION SYSTEM

Most of the right holders are landless poor or have insufficient amount of land, which is evident from survey result as well. From survey it is found that 84.2 percent household do not have any agricultural land of their own. Alternatively, 67 percent household does not have any productive agriculture land within the uncontrolled group.

**Table 16: Agricultural land ownership status of right holders and uncontrolled group**

Ownership of agricultural land in right holder group	Frequency	Valid percent	Ownership of agricultural land in uncontrolled group	Frequency	Valid percent
Yes	71	15.8	Yes	33	33
No	379	84.2	No	67	67
<b>Total</b>	<b>450</b>	<b>100</b>	<b>Total</b>	<b>100</b>	<b>100</b>

### **10.1 Size of Agriculture Land**

As most of the right holders are landless or small holder, therefore 84 percent households have no land; only eight percent households have less than 30 decimal, 6.67 percent household has 30 to 60 decimal agricultural lands and only 1.33 percent household has 66-100 decimal agricultural lands. In the uncontrolled group, 66 percent household has no agricultural lands, 19 percent household has less than 30 decimal lands and 15 percent of the rest households have more than 35 decimal lands for agricultural activities.

### **10.2 Leased Land**

Though most of the farmers have no land, they are using leased land for agriculture production. Within the right holders, 10.9 percent household has leased land and within the uncontrolled group only 24.0 percent is using leased land for agriculture production.

### **10.3 Share Cropping**

In case of share cropping, 3.5 percent household is engaged with share cropping and within the sharecropper, 96.4 percent household is not engaged in any share cropping land, 0.8 percent household has less than 20 decimal land and 0.25 percent household has 33 to 120 decimal share cropping land within the right holders. On the other hand, within the uncontrolled group 9.0 percent is engaged in share cropping. The sharecroppers (6 percent) within the uncontrolled group have 2 to 30 decimal and 4.0 percent has 33 to 66 decimal share cropping land for agricultural activities. Moreover, 90.0 percent household has no share cropping land.

### **10.4 Ownership of Pond**

The baseline report ensures that no one have the ownership of pond within the right holders and uncontrolled group. It is used for bathing and washing mostly.

### **10.5 Poultry**

Within the right holders, 45.8 percent household has poultry resources. In case of income from poultry resources, it is found that 34.44 percent earns Tk.100 to 1000, 30 percent can make it up to Tk.1100 to 2000 per month and only 3.11 percent can earn Tk. 2200 to 10000. In case of the uncontrolled group, 8.44 percent has poultry resources. It is seen from study that 45 percent household's income is estimated to be Tk.100 to 1000 and 6 percent makes an amount of Tk. 1400 to 2000 per month.

### **10.6 Livestock**

Livestock is considered as an important natural capital for rural people and a considerable portion of income comes from it. However, 27.8 percent of the right holders have livestock. In case of estimated amount money earned from domestic animals the proportion is like: 14.44 percent makes Tk. 500 to 10000 , 12 percent earns Tk.10001 to 30000 and it is Tk. 3200 to 120000 per month in case of the 2.22 percent people. On the other hand, 36 percent has the ownership of domestic animals in the uncontrolled group. The estimated amount of earned money from domestic animals

here, it ranges from Tk. 700 to 15000 in case of 23 percent and 13 percent household's estimated income per month is Tk. 17000 to 52000.

## 10.7 Agricultural Activities

In the project area, 32.2 percent is engaged in agricultural activities among the right holders and 9.6 percent harvests once a year while it is twice for another 24.6 percent. On the other hand, 42 percent households of the uncontrolled group are engaged in agriculture activities. 4 percent of them cultivate their lands once a year and 37 percent household cultivates their lands twice.

## 10.8 Productive Crop

Like other parts of Bangladesh, paddy is a major crop for project generated villages. The survey revealed that among the right holders, 99.8 percent of the farmer is growing rice in their fields and 0.2 percent is growing wheat. Among the uncontrolled group; 99.0 percent is producing paddy and only one percent is producing wheat.

## 10.9 Seed Used for Crop Production

Most of the farmers of Bangladesh are using the locally produced seeds to grow crops. However, recently this trend is changing slowly and many types of hybrid seeds are replacing with indigenous ones. Within the right holders; it is found that 10.2 percent household is using local variety, 9.8 percent household is using highly yielding variety and 0.2 percent are using of hybrid seeds. On the other hand, within the uncontrolled group; 5 percent is using local seeds, 46.0 percent household is using high yielding variety seeds for production. In case of seed preservation, it is found that 0.9 percent farmers are preserving seeds for future use in the right holders group, whereas this rate is 6 percent in case of the uncontrolled group.

## 10.10 Use of Agriculture Tools

Though Bangladesh is shifting from an agricultural based country to industrialized country, it is manifested from the survey that subsistence agriculture in rural Bangladesh is gradually shifting towards mechanised agriculture. It is found that out of 14.4 percent farmers of the right holders group, 3.1 percent is using traditional agricultural tools, 17.6 percent is using modern agricultural appliances and two percent is using both the traditional and modern ones. Out of 41 percent farmers within the uncontrolled group; 53 percent is using traditional tools, two percent is using both and no one is using the modern tools.

**Table 17: Use of agricultural tools within right holders and uncontrolled group**

Right holder group			Uncontrolled group		
Tools for agricultural activity	Frequency	Valid percent	Tools for agricultural activity	Frequency	Valid percent
traditional	14	3.1	traditional	53	53
modern	79	17.6	modern	0	0
Both	9	2.0	Both	02	02
not applicable	348	77.3	not applicable	45	45
<b>Total</b>	<b>450</b>	<b>100</b>	<b>Total</b>	<b>100</b>	<b>100</b>

## 10.11 Source of Irrigation

One of the important issues for the agriculture production is irrigation. More particularly, irrigation is crucial for *Boro* production. Within right holders group; 0.9 percent farmers are using surface water, 22.7 percent is using ground water and 0.7 percent household is using both as a source of irrigation. In the uncontrolled group, however, 9.0 percent farmers' source of irrigation is surface water and 46.0 percent is using ground water and one percent is found to use both for irrigation.

## 10.12 Main Obstacles for Agriculture Production

### 10.12.1 Obstacles for Agricultural Production

Agriculture is a weather sensitive sector. Even a slight change in climate eventually hampers the production. Farmers of the RESOLVE area are confronting multiple stresses. However, flood is the dominating factor that has an ambivalent affect. In one side it makes lands fertile through silt deposition; on the other hand it causes destruction by inundating the whole production. Among the right holders group, 99.33 percent have recognized flood, 0.67 percent have faced drought as hindrances for agricultural production. On the other hand; 100 percent have considered flood as the main obstacles of agricultural production within the uncontrolled group.

**Table 18: Obstacles for agricultural production within right holders and uncontrolled group**

Obstacles for agricultural production	Frequency	Valid percent	Obstacles for agricultural production	Frequency	Valid percent
Drought	3	0.67	Flood	100	100
flood	447	99.33			
<b>Total</b>	<b>450</b>	<b>100.00</b>	<b>Total</b>	<b>100</b>	<b>100</b>

### 10.12.2 Effect of Climate Change in Agriculture

In Bangladesh, agricultural sector is badly hampered by the climatic change where it incurs the direct loss. In the right holders group; 69.6 percent household is facing reduction of production, 2.7 percent is facing change of variety of crops and 3.6 percent household is facing change of crop calendar as the major impacts of climate change. Moreover, 0.2 percent household is agreed for the other effects of the climatic change. In the case of main effects of climatic change within the uncontrolled group, 96 percent household has answered about reduction of productivity, 4.0 percent has spoken of change of crop calendar as the major impacts of climate change.

## 11. CLIMATE CHANGE AND NATURAL HAZARDS

In the right holder group, 75.8 percent household have agreed about the shocking effects of the climatic change in agricultural production while 24.2 percent have answered that they have heard about it but failed to notice any effects. On the other hand, all of the households in the uncontrolled group have the positive response for the effects of climatic change in agricultural productions.

## 11.1 Hazard Frequency

According to respondents among the right holders, 99.8 percent's answer is flood, 0.2 percent answers salinity. On the other hand, 100 percent respondents identified flood to be the most frequent hazard within the uncontrolled group.

**Table 19: Hazard frequency according to right holders and uncontrolled group**

Right holders group			Uncontrolled group		
Calamities frequently occur in your locality	Frequency	Valid percent	Calamities frequently occur in your locality	Frequency	Valid percent
Flood	449	99.8	Flood	100	100
Salinity	1	0.2	Not applicable	0	0
<b>Total</b>	<b>450</b>	<b>100.00</b>	<b>Total</b>	<b>100</b>	<b>100</b>

## 11.2 Relief and Recovery after Disaster

In case of receiving relief and recovery assistance after disaster, the RESOLVE project generated area is showing an unsatisfactory scenario even though Bangladesh has been cited as a model for disaster management worldwide. The baseline survey revealed that only 36.9 percent of the household is getting assistance out of which 5.8 percent is receiving assistance from government and 31.0 percent is from NGOs. Moreover, 63.1 percent household is not getting any financial assistance. Within uncontrolled group, only 14.0 percent household is getting financial assistance after calamities while 85.0 percent is derived from getting the financial assistance after calamities. Out of which, 5 percent household is getting the financial assistance from government and only 7 percent household is getting assistance from non-governmental sources after disasters.

## 11.3 Access to Shelter Center

As a dweller of the fragile ecosystem, the right holders are the most vulnerable to disasters. However, people's general tendency of staying in their places partly due to the distance and partly due to protect livestock and other resources in times of flood or other natural hazards. The survey revealed that 99.8 percent of the right holder goes to shelter centre during flood, cyclone or other natural hazards. Moreover, within the uncontrolled group the share of going to shelter centre is 100 percent.

## 11.4 Weather Forecasting System

The right holders are very vulnerable to disasters and hence, weather forecasting is very important for securing themselves from devastation. However, it is surprising that there is no weather forecasting system in the area. In case of the uncontrolled group, no respondent has the access to weather forecasting system.

## 12. FINANCIAL SYSTEM

### 12.1 Savings

As most of the right holders have been found to be economically slightly better off poor, some of them have savings. It is seen from the survey that only 31.1 percent right holders have savings. Out of which, 99.3 percent households have a saving of Tk. 125 per month that is a negligible amount. On the other hand, it is 59.0 percent within the uncontrolled group. It is revealed that 49 percent household is saving Tk. 500-2000 per month and only 9 percent household is saving Tk.2200-20000. In addition, 30.2 percent household are saving money through NGOs.1.8 percent household is saving through bank and *samity* and only 0.2 percent is saving money in cash within the right holders group. In contrast, 53.0 percent household of the uncontrolled group is saving money through NGOs and 6 percent is saving through bank.

### 12.2 Loan

Though 36.4 percent of the total right holders' income is lower than Tk.30000, it is mandatory to borrow money for meeting their necessary demands. The survey revealed that 64.2 percent household has to take loans for a number of reasons. The highest percentage (53.8 percent) is found to take loans for purchasing food, 3.8 percent borrows for treatment, 2.4 percent does it for education of children and another 5.1 percent is for others reasons. On the other hand, 82.0 percent households of the uncontrolled group have taken loan in case of necessary whereas 65.0 percent borrows in order to purchase food, 7 percent for treatment, 8 percent for education of children and only 4 percent for the other purposes.

### 12.3 Sources of Loan

Most of the households in the right holder group are borrowing from the NGOs as microcredit. Microcredit has appeared as a major source of capital for the poor people in rural Bangladesh. Within right holders group, 9 percent households borrow from *samity*, 20.7 percent from money lenders, 15.6 percent from relatives, 19.3 percent from neighbours and the rest of them borrow for other reasons. Moreover, 35.3 percent household is not applicable for this borrowing source. The situation is nearly identical in case of the uncontrolled group. It emerges that 44.0 percent household is dependent on the neighbours for borrowing money, 22 percent from relatives and 4 percent from the *samity*. From the uncontrolled group, only 16.0 percent is applicable for this condition.

### 12.4 Debt Situation

As the right holders are poor, they are compelled to take loans to bear their daily expenses. The survey explored that 37.4 percent of the total households among right holders are in debt. Within uncontrolled group, the rate is 55.0 percent.

Among the right holders group; 28.4 percent household has less than Tk.10001, 5.4 percent has Tk. 10001 to 20000 and 2.11 percent has Tk. 22000 and above as an amount of debt at present within the 450 households. On the other hand, 39 percent household has Tk. 1000 to 10000 , 11 percent has Tk. 11000 to 20000 and only 4 percent household has Tk. 24000 to 50000 as debts at present within uncontrolled group.



### 13. CAPACITY BUILDING TRAINING

The right holders are identified as less capacitated in case of problem reasoning as well as solving. The right holders are not only illiterate but also out of the ambit of capacity building training offered by both government and NGOs. The survey showed that only 5.6 percent of the right holder is receiving capacity building training whereas no one have the access of any capacity building training in case of the uncontrolled group.

### 14. GENDER PERSPECTIVE SITUATION

The main objective of RESOLVE project is to empower the women and improve the livelihood status of the vulnerable population. In this context, this baseline survey report has tried to focus on some issues which relates to the gender related aspects. On the basis of female education, it is observed that current enrollment in school and college of female posses a satisfactory situation. In the controlled group, 53 percent female are currently enrolled in school and college whereas 50 percent female of the uncontrolled group are involved in current enrollment. In the RESOLVE generated area, female education is more than the male education. Recently, 27.1 percent female have completed the primary education and 30 percent in the uncontrolled group have completed their primary education. This study stated those female are facing more obstacles in obtaining their Secondary School Certificate (SSC) and more graduation than the primary and secondary education. Mainly the family restriction and early marriage have reduced the percentage of female education in obtaining SSC and more other degrees. Due to this response, 0.2 percent of the controlled group have been facing difficulties in going to the school and no one in the uncontrolled group have been facing any problem except early marriage. In the controlled group, only 3.2 percent female and one percent female of the uncontrolled group have completed SSC and above graduation. However, the illiteracy rate of the female member in the controlled group and the uncontrolled group are 18.7 and 10 percent respectively.

In the controlled group, it is appeared that 24.7 percent female are capable to make their own decisions in the family because of their earning power is increasing. In contrast, only 14 percent female in the uncontrolled group are making their own decision or can able to give their decision to the family head.

**Table 20: The status of female respondents of control and uncontrolled groups**

Indicators of female empowerment	Controlled group	Uncontrolled group
Current enrollment in School and College	53	50
Primary Education	27.1	30
Education in SSC and above	3.2	1
No degree	35.3	38
Illiterate	18.7	10
Difficulties faced by girls going to the School	0.2	0
Decision making rights	24.7	14
Birth Control	67.8	81
Any Vaccination during pregnancy	67.6	73

Female members are more vulnerable than male members in this flood prone area. They are not so much aware about the birth control process because of the religious views and most of them do not want to take birth control protection. As a result, the percentage of female who is taking the birth

control is unsatisfactory in the study area. In addition, 67.8 percent female members among the right holders have taken birth control protection whereas 81 percent female in the uncontrolled group has taken the birth control process. Among the right holder group, 67.6 percent female have the capability of taking vaccination during the pregnancy period and 73 percent in the uncontrolled group have the access of taking vaccination during this condition.

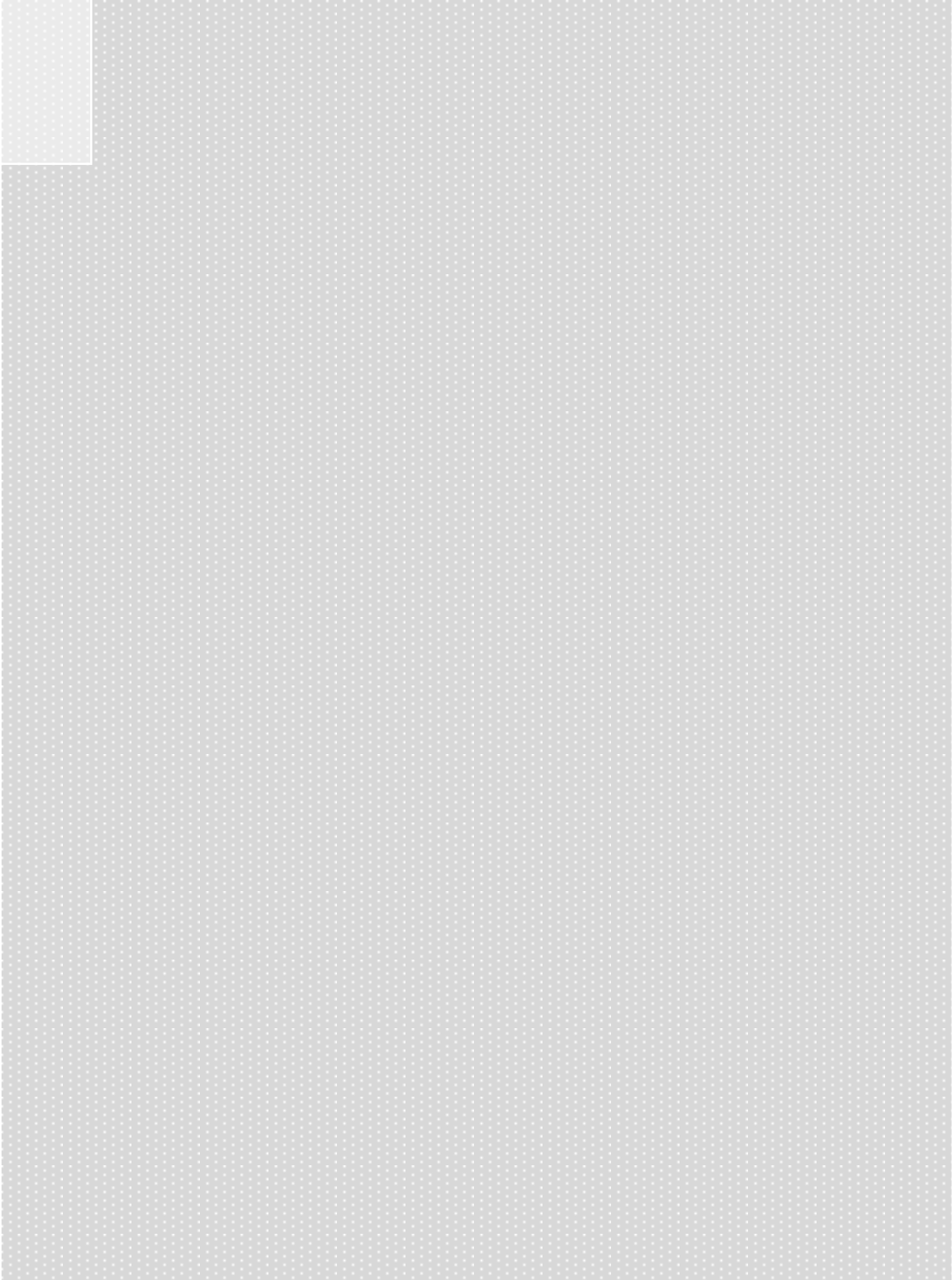
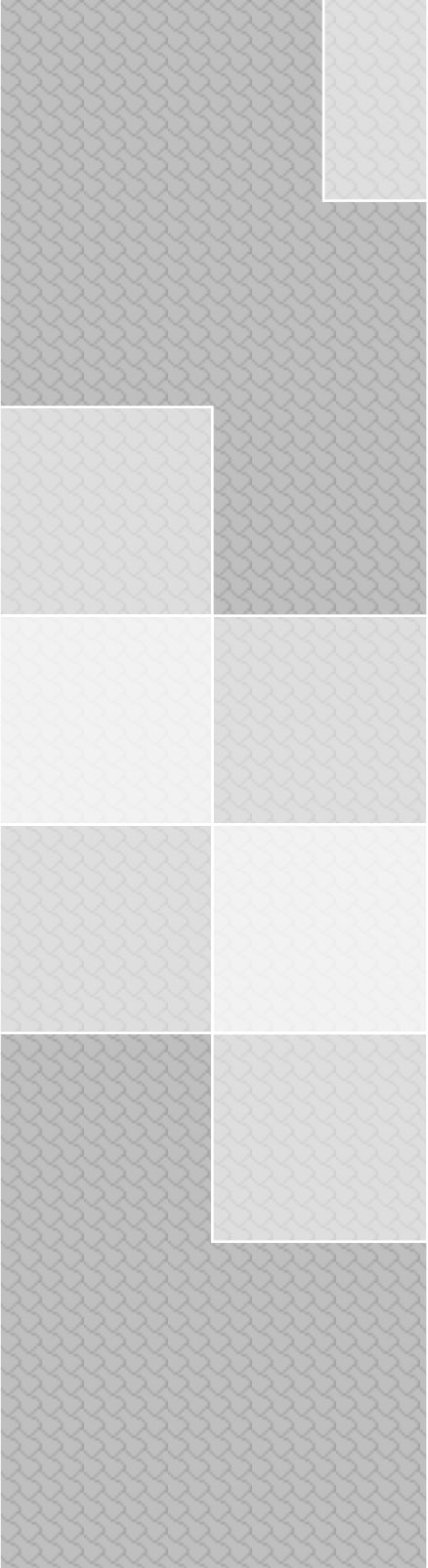
## 15. MAJOR FINDINGS OF THE STUDY

Table 21: Major findings of the study	
Indicators	Current situation of the Indicators
<b>Population</b>	Total population size of the right holders' family is 1659; with 46.23 percent male and 53.76 percent female. However, baseline survey revealed that total 450 family members belong to the 100 uncontrolled households out of which 50.1 percent is male members and other 51.7 percent are females.
<b>Primary Occupation</b>	From the baseline survey it is found that 14.4 percent household head of the right holder's primary occupation is agriculture, 72.9 percent is wage labourers, 1.8 percent is small businessman, 0.7 percent is fisherman, 5.8 percent is van puller, 1.1 percent is carpenter and 3.3 percent is engaged in other occupations within our 450 households. Among the uncontrolled group, 41 percent man does farming, 52 percent is labourer, one percent of household head is doing small business, two percent is van puller and four percent household head is engaged in others associations as the primary occupation.
<b>Secondary Occupation</b>	The survey showed that 8.2 percent households' heads are engaged in agriculture as a secondary occupation, 10.2 percent is labourers, 0.7 percent does small business, 12.2 percent is fishermen, 4.9 percent is housewives, 0.2 percent is service holders, 1.1 percent is van puller, 0.2 percent is <i>kabiraj</i> , 0.9 percent is carpenter and 2.4 percent households' heads is engaged in other activities as a secondary option, particularly in lean period. On the other hand, 29.0 percent household is found to be engaged in their primary occupation in case of uncontrolled group. 12.0 percent of this uncontrolled group is engaged in farming, 23.0 percent is labourers, 4.0 percent is in small business, 10.0 percent is working as a fisherman, 14.0 percent is van puller and only 8 percent is engaged in other secondary occupations.
<b>Enrollment</b>	Within 450 right holders' households, 399 members have been found to be enrolled in schools and colleges out of which 47 percent are male and 53 percent are female. On the other hand, total 80 members have been found enrolled in various schools and colleges and the percentage of male and female enrollment is the same at 50 percent among the uncontrolled group.
<b>Female Education</b>	Within right holders, 27.1 percent of the female member has obtained primary level education, 15.8 percent have obtained secondary level, 1.6 percent have persued above S.S.C and 35.3 percent female member has no degrees at all. The rest (18.7 percent) of the households' female members are illiterate. On the contrary; 30.0 percent female member has obtained primary level degree, 21.0 percent has secondary level education, one percent household have gained above secondary level education. In addition, 38.0 percent household female member does not have any degree and 10 percent household's female members are illiterate.
<b>Income</b>	In the right holder's group, most of them are comparatively better because of their annual income is more than Tk. 41000 (USD 512). The baseline study revealed that 63.6 percent right holders' annual income is equal or more than Tk. 31000. However, 36.4 percent right holder is extreme poor and their annual income is lower than Tk. 30000. On the other hand, within the uncontrolled group, 27 percent has been identified as extreme poor whose income is equal or less than Tk. 35000. However, 73 percent right holder in the uncontrolled group has been observed with their annual income of equal or more than Tk.45001.

<b>Expenditure</b>	There is a discrepancy between the income and expenditure in the RESOLVE generated area. Even though more than 36.3 percent right holder has been found with less than an annual income of Tk. 30000, 69.8 percent right holders' yearly expenditure is more than Tk. 30000 .Aids received from different government and NGO programmes are the reasons behind it . However, a reverse scenario has been discovered in the uncontrolled group where 83 percent household has been found with an annual expenditure of more than Tk. 30000 and only 17 percent household's expenditure has been found less than Tk.30000.
<b>Feeding Capability</b>	The baseline data depicts that 56.5 percent of the total household can get a meal of three times in a day. It also predicts that only 2.3 percent of the total households' members can have a meal once each day (that is not square even) whereas 43.3 percent households' members can eat twice every day. Feeding scenario is also satisfactory for uncontrolled group. Within the uncontrolled group, 89 percent of the total household members can eat thrice a day and 11.0 percent households' family members can eat two times in a day. Moreover, no household head is capable of feeding his/her family members three times in a day in case of the uncontrolled group.
<b>Ownership of House</b>	Within 450 right holders, 77.6 percent has their own houses and 22.4 percent of the total household has ownership of house in other ways. No one is living in the rented house. 68.9 percent has one room, 27.6 percent has two rooms and only 3.6 percent has three rooms. One bed room has been found in 76.9 percent household of the right holders. 21.3 percent household has two rooms and 1.6 percent household has three bed rooms. On the other hand, 99.0 percent of uncontrolled group has their own house and only one percent household has the ownership of house in other ways. 99 percent household of the uncontrolled group is living in a house of three rooms and 69 percent has only one room. However, 79 percent household has only one bed room and only three percent household has three bed rooms to sleep.
<b>Source of Light</b>	Only eight percent of household of the right holders has access to electricity. 91.3 percent house depends on Kerosene and 0.7 percent uses solar energy as for a source of light. On the other hand, 78.0 percent and 21.0 percent household of the uncontrolled group use kerosene and electricity respectively. Solar energy as a source of light is used by only one percent household.
<b>Fuel System</b>	The right holders depend on nature for fuel. 100 percent of the right holder uses leaves or straws as fuel and collects those from their surroundings. Similarly, the entire household of the uncontrolled group uses leaves and straw as fuel.
<b>Water</b>	Almost all the households of the right holders and uncontrolled group are using tube well to meet up their demand of drinking water. From the survey, it is found that only 34.4 percent household has tube wells in their house premise and they collect water within 2-5 minutes, 38.4 percent needs 6-15 minutes, 14.2 percent household needs 20 minutes and 12.9 percent needs 25-45 minutes to collect drinking water from the source. Alternatively, seventy-one percent households of the uncontrolled group needs to spend 1 to 10 minutes and 29 percent household needs to spend 12 to 20 minutes to collect drinking water from the source. In Sirajgonj, availability of water till now is not a concerning issue as evident from right holders' response. 65.8 percent household does not face any sort of problems in water collection and 34.2 percent household faces the problem of water supply. The situation is similar in the uncontrolled group. 55 percent household has no problem in availability of water supply and 45 percent household responses negatively regarding the availability of water.
<b>Sanitation systems</b>	In the right holder's group, 34.2 percent uses sanitary toilet, 58.2 percent uses hanging ones, 1.8 percent uses open place for defecation and 5.6 percent uses other types of toilet. On the other side, within the uncontrolled group, 40 percent uses sanitary toilets and 60 percent uses hanging toilets. 98 percent household has one toilet and only two percent have no toilet.

<b>Waste management</b>	<p>From the survey, it is revealed that almost all household of right holders have placed their waste in open places. However, positive side is that 100 percent household is cleaning the garbage area daily. In addition, 0.2 percent of the right holder's group is disposing the garbage from the dumping place once in a month and 99.6 percent have never cleaned the garbage from the dumping place.</p> <p>The baseline survey gives an impression of the right holders' inadequacy of technical knowledge and awareness on using garbage as organic fertiliser. It is found that only 2.9 percent household uses garbage as organic fertiliser and only 99.6 percent household even do not use the garbage as organic fertilizer. In the case of garbage system, 78.2 percent household is found to use the open place, 21.6 percent household uses rivers and ponds to dump the garbage. In case of the uncontrolled group, 59 percent is found to dump waste in open places and 41 percent household's garbage is put in river or ponds. It is surprising that all of the household members from uncontrolled group have never cleaned the garbage from the dumping place. In case of preparing organic fertiliser from waste, it is found that 99.0 percent household uses garbage as an organic fertiliser and the rest one percent have never done it.</p>
<b>Diseases</b>	<p>It is found that 2.2 percent household member is affected by fever, 1.1 percent by cough, 0.9 percent by Diarrhea, 92.0 percent by Influenza, 2.4 percent by Typhoid and 1.3 percent has got headache. In case of method of treatment, 99.6 percent takes allopathic medicine and 0.4 percent goes for <i>Kabiraj</i> options.</p> <p>In case of the uncontrolled group, one percent family member is affected by Diarrhea, 5 percent is affected by headache and 94 percent household's member is affected by Influenza. Here, 100 percent household uses allopathic method of treatment.</p>
<b>Immunization of Children</b>	<p>Within the right holders group, only 36.0 percent children (below five years) get complete immunization and 1.6 percent children has completed partial immunization. However, 62.4 percent household is not responsible for this issue. In contrast, the uncontrolled group shows a satisfactory picture in case of immunization. 49.0 percent household completed immunization of their children and only one percent household has completed it partially. In case of immunization, 50 percent household is not applicable for this situation.</p>
<b>Birth Control</b>	<p>67.8 percent of the right holder group's reproductively active women are using birth control system and 2.9 percent does not want to use this system in right holder's group. Moreover, 29.3 percent does not response to this system. Religious restriction (0.4 percent) and other views (1.6 percent) is the main reason behind female members' lack of interest in using birth control methods. In regard to uncontrolled group, 81.0 percent reproductively active women are using birth control methods, whereas three percent household does not receive birth control case. They are not aware about birth control methods and others do not take birth control for various reasons.</p>
<b>Vaccination During Pregnancy</b>	<p>Within the right holders, 67.6 percent pregnant women are taking vaccination during pregnancy, 19.1 percent does not take any vaccination during pregnancy. On the other hand, 73.0 percent pregnant women of the uncontrolled group are taking vaccine during pregnancy and 24.0 percent household does not take any vaccine during pregnancy.</p>
<b>Agricultural Land Ownership</b>	<p>From survey, it is found that 84.2 percent household does not have any agricultural land of their own. Alternatively, 67 percent household does not have any productive agriculture land within the uncontrolled group.</p>
<b>Agricultural activities</b>	<p>In the project area, 32.2 percent is engaged in agricultural activities among the right holders and 9.6 percent harvests once a year while it is twice for another 24.6 percent. On the other hand, 42 percent household of the uncontrolled group is engaged in agriculture activities. 4 percent of them cultivate their lands once a year and 37 percent household cultivates their lands twice.</p>
<b>Share Cropping</b>	<p>In case of share cropping, 3.5 percent household is engaged with share cropping and within the sharecropper, 96.4 percent household is not engaged in any share cropping land, 0.8 percent household has less than 20 decimal lands and 0.25 percent household has 33 to 120 decimal share cropping land within the right holders. On the other hand, within the uncontrolled group, 9 percent is engaged in share cropping. The sharecroppers (6 percent)</p>

	within the uncontrolled group have 2 to 30 decimal and 4 percent has 33 to 66 decimal share cropping land for agricultural activities. Moreover, 90.0 percent household has no share cropping land.
<b>Productive Crop</b>	Like other parts of Bangladesh, paddy is a major crop for project generated villages. The survey revealed that among the right holders, 99.8 percent of the farmer grows rice in their fields and 0.2 percent grows wheat. Among the uncontrolled group, 99.0 percent produces paddy and only one percent produces wheat.
<b>Seed use for agricultural production</b>	Within the right holders, it is found that 10.2 percent household uses local variety, 9.8 percent household uses high yielding variety and 0.2 percent uses the hybrid seeds. On the other hand, within the uncontrolled group, 5 percent uses local seeds, 46.0 percent household uses high yielding variety seeds for production. In case of seed preservation, it is found that 0.9 percent farmer preserves seeds for future use in the right holders group whereas this rate is 6 percent in case of the uncontrolled group.
<b>Use of agricultural tools</b>	It is found that out of 14.4 percent farmer of the right holders group, 3.1 percent uses traditional agricultural tools, 17.6 percent uses modern agricultural appliances and two percent uses both the traditional and modern ones. Out of 41 percent farmer within the uncontrolled group, 53 percent uses traditional tools, two percent uses both and no one uses the modern tools.
<b>Obstacles of Agricultural Production</b>	Among the right holders group, flood is the dominating factor that has an ambivalent affect. In one side, it makes lands fertile through silt deposition; on the other hand. it causes destruction by inundating the whole production. Among the right holders group, 99.33 percent recognized flood, 0.67 percent has faced drought as hindrances for agricultural production. On the other hand, 100 percent considers flood as the main obstacles of agricultural production within the uncontrolled group.
<b>Effect of climate change on agriculture</b>	In the right holders group, 69.6 percent household have faced reduction of production, 2.7 percent have faced change of variety of crops and 3.6 percent household have faced change of crop calendar as the major impacts of climate change. Moreover, 0.2 percent household is agreed for the other effects of the climatic change. In the case of main effects of climatic change within the uncontrolled group, 96 percent household has answered about reduction of productivity, 4 percent has spoken of change of crop calendar as the major impacts of climate change.
<b>Climate change and Natural hazards</b>	In the right holder group, 75.8 percent household agrees about the shocking effects of the climatic change in agricultural production while 24.2 percent have answered that they have heard about it but failed to notice any effects. On the other hand, all of the households in the uncontrolled group have the positive response for the effects of climatic change in agricultural productions.



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