Booklet 2016

Making our community "Climate Resilient"

District: Jessore
Thana/Upazila: Jhikargacha
Union: Panisara & Bankra

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Introduction

Samadhan is a Non-government; Non-political, Non-religious multidimensional development service oriented voluntary organization. It is working in south-west region of Bangladesh since October 14, 1987 covering Jessore, Satkhira and Khulna district. The project areas are highly hazard prone as these areas are adjacent to the bank of Kapotaksha River as well as Bay of Bengal and Flood/Waterlogging is the common hazard over the areas, trend of harmfulness of which are very high. Samadhan is working to eradicate poverty and improving the sustainable socio-economic condition of poor and marginalized families by providing need based all sorts of supports.

Samadhan is widely experienced in working with Government, National, and International donors and development organization in implementing bilateral and multilateral projects including Palli Karma Shahayak Foundation (PKSF). To address the burning issue on Climate Change, Samadhan has been implementing a sub project titled "Advancing Capacity of Climate Vulnerable Community through Awareness Raising and Implementation of Adaptation Activities (CCCP)" in Jessore district under the Community Climate Change Project (CCCP) of PKSF. This Project started on August 20, 2014 and is funded by Bangladesh Climate Change Resilience Fund (BCCRF).

Samadhan has been working to rebuild resilient community through reducing vulnerability and strengthening adaptation capacity of community in its working areas. Community Climate Change Project is much focused in achieving its goals within the project period, August 20, 2014 to September 30, 2016. A total of 500 poor and extreme poor households, mainly flood affected people of Jhikargacha Upozila under Jessore district has brought under this sub project. The goal of the sub-project is to increase community resilience and to ensure food security of poor and disadvantaged people through creating/building awareness, IGA and or implementation of adaptation activity support in flood prone areas. Moreover, Samadhan works with the poorest vulnerable households for strengthen community to risk reduction and adaptation capacity to reduce the negative effects of climate variability and increase household food security and quality of life of the poor.

Abbreviation

BARI	Bangladesh Agriculture Research Institute
BADC	Bangladesh Agriculture Development Corporation
BBS	Bangladesh Bureau of Statistics
BCCRF	Bangladesh Climate Change Resilience Fund
BCCSAP	Bangladesh Climate Change Strategy and Action Plan
BINA	Bangladesh Institute of Nuclear Agriculture
BRRI	Bangladesh Rice Research Institute
CBA	Community Based Approach
CBO	Community Based Organization
CCAG	Climate Change Adaptation Group
CCCP	Community Climate Change Project
CDMP	Comprehensive Disaster Management Program
CDDF	Cancer Drug Development Forum
CHM	Complaint Handling Mechanism
CLP	Chars Livelihood Program
CMDRR	Comprehensive Management of Disaster Risk Reduction
DAE	Department of Agriculture Extension
DPHE	Department of Public Health Engineering
DRR	Disaster Risk Reduction
EAR	Environmental Assessment Report
EMF	Environmental Management Framework
EMP	Environmental Management Plan
EPF	Emergency Program Flood
ER	Enhancing Resilience
ESDO	Economic and Social Development Organization
FCDRR	Family & community level Disaster Risk Reduction
FDMC	Federation Disaster Management Committee
FF	Field Facilitator
FFWC	Flood Forecasting and Warning Centre
FSHG	from School to Homestead Gardening
GoB	Government of Bangladesh
GRM	Grievance Redress Mechanism
HH	Household
HIES	Household Integrated Economic Survey
IAPP	Integrated Agricultural Productivity Project
ICS	Improved Cooking Stove
IDE	International Development Enterprise
KDAB	Korean Development Agency of Bangladesh
LEB	Local Elected Body
LED	Light-Emitting Diode
LGED	Local Govt. Engineering Department
LGSP	Local Govt. Sustainable Project
MDG	Millennium Development goals

MJSKS	Mohideb Joubo Samaj Kallyan Songsta
MMS	Manob Mukti Sangstha
MOEF	Ministry of Environment and Forest
MoU	Memorandum of Understanding
NGO	Non Govt. Organization
Nos	Numbers
ODA	Overseas Development Assistance
OECD	Organization for Economic Co-operation and Development
OM	Operational Manual
PAD	Project Appraisal Document
PIO	Project Implementation Officer
PIP	Project Implementing Partner
PKSF	Palli Karma-Sahayak Foundation
PMU	Project Management Unit
PPA	Public Procurement Act
PPR	Public Procurement Rules
PRA	Participatory Rural Appraisal
RMP	Rural Maintenance Program
RSDA	Rural Self-Help Development Association
SED	Sustainable Economic Development
SGP	Sub Grant Proposal
SHOUHARDO	Strengthening Household Abilities to Respond to Development Opportunities
SKS	Somaj Kallyan Songstha
SMF	Social Management Framework
TDHF	Terre Des Home Foundation
TER	Test and Emergency Relief
UP	Union Parishad
USWD	Upazila Social Welfare Department
UWAO	Upazila Women Affairs Office
UzP	Upazila Parishad
VGD	Vulnerable Group Development
VGF	Vulnerable Group Feeder
WB	World Bank
WDB	Water Development Board

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Chapter 1: Forwarding

Brief Overview of Climate Change in Bangladesh-

Bangladesh is known as one of the most vulnerable countries to climate change in the world. Geographically, the country is characterized by low-laying delta formed by the three major rivers i.e. the Padma, Meghna and. Jamuna. More than 35% of the land is low-lying flood plain. In addition, the country lies between the Bay of Bengal in the south and an active Himalayan tectonic belt in the north. Thus the country is inherently at the high degree of risk to a range of natural disaster. The whole central part of the country is highly prone to flood and erosion, the southern part is prone to salinity intrusion and cyclone, the north-western part is prone to drought and south-western part is prone to flash flood. In addition, the whole country has been experiencing some emerging hazards for last few decades which include densely fog, heat wave, cold wave, seasonal variation of temperature, precipitation and so on. The major elements of climate change including temperature and precipitation has been gradually changing over the period. Observed data indicates that the temperature is generally increasing in the monsoon season (June, July and August). Average maximum and minimum temperatures in monsoon period show an increasing trend annually at the rate of 0.05^{O}C and 0.03^{O}C respectively (MOEF, 2005). On the other hand, average maximum temperature in winter season (December, January and February) shows an increasing trend annually at the rate of 0.041°C while minimum temperature shows an increasing trend annually at the rate of 0.026°C which reflects winter is also becoming warmer. Various models also show an increasing trend of temperature and the seasonal variation. There is also significant variation in temporal distribution of rainfall. Observed data shows that both number of days without rainfall and annual total rainfall is increasing, which means more rain is occurring in short duration. It also reflects erratic behavior of rainfall.

Overall impacts of climate change on Bangladesh would be significant. It is estimated that climate change could affect more that 70 million people of Bangladesh due to its geographic location, low elevation, high population density, and poor infrastructure, high levels of poverty and high dependency on natural resources[1]. It was found that the population living in the coastal area is more vulnerable than the population in other areas (Alam and Laurel, 2005). Coastal resources upon which the most people depend are likely to be affected severally due to climate variability and change[2]. It is predicted that for 45 cm rise of sea level may inundate 10-15% of the land by the year 2050 resulting over 35 million climate refuges from the coastal districts[3]. Ultimately adverse impacts have the potential to undermine poverty reduction efforts and could compromise to achieve the national target on development. The OECD and World Bank also estimated that 40% of the Overseas Development Assistance (ODA) to Bangladesh may be climate sensitive or at risk.

Overview of Community Climate Change Project (CCCP)-

With an understanding of the nature and magnitude of the adverse impacts of climate change and the efforts required to enhance resilience, the Government of Bangladesh (GoB) adopted Bangladesh Climate Change Strategy and Action Plan (BCCSAP) in 2009. A multi-donor trust fund, known as "Bangladesh Climate Change Resilience Fund (BCCRF)", was established to implement the strategy and action plan. As of today, BCCRF has attracted around US$190 million (initially it was US$125 million) from the bilateral development partners (United Kingdom, European Union, Sweden, USA, Australia, Switzerland and Denmark). Ninety percent of the available fund has been allocated to public sector projects, while 10 percent is channeled through NGOs for community level climate actions through a different project titled 'Community Climate Change Project (CCCP). The Governing Council of BCCRF entrusted Palli Karma-Sahayak Foundation (PKSF) to implement the community-level climate

[1] UN Human Development Report 2007/'08
[2] OECD, 2003
[3] Climate Change Cell, DoE, Bangladesh

change adaptation activities through CCCP. On behalf of the contributing Development Partners and in consultation with the Government of Bangladesh (GoB), the World Bank (WB) ensures the fiduciary management of the project. CCCP has its own Operational Manual (OM), Environmental Management Framework (EMF), Social Management Framework (SMF), Procurement Guideline, Grievance Redress Mechanism, Complaint Handling Mechanism and Monitoring and Evaluation Manual. Throughout the project, every NGO has to work as per the guidelines of these manuals. PKSF established a Project Management Unit (PMU) in its own premises to manage the activities of CCCP and the project implementation supervision in PIP level.

Brief of the Sub-project-

Advancing capacity of climate vulnerable community through awareness raising and implementation of adaptation activities Project (**CCCP)** implementing area is in Jessore district which is situated in the south-west region of Bangladesh. It has eight Upazila, among them Jessore sader, Jhikargacha, Avaynagar, Keshabpur & Monirampur upazila's are become the most hazard prone area from the past 2000 to till date.

As the Jhikorghacha Upazilas area adjacent to the kapotaksha river basin, it is the most vulnerable to Waterlogging and Floods. Other than that it has Agricultural Droughts, Arsenic Contamination and also vulnerable to climate change impacts. Jhikorghacha Upazila has 11 Union and 1 Pourashava with a total population of 298,908 (Female 151781 and Male 147,127), consists of 162 villages and 72,266 households. The people of the Upazila are experiencing different type of natural hazards as well as a few man made hazards in the area. Samadhan has taken initiative to reduce sufferings of the flood affected vulnerable poor people of Panisara and Bakra union under Jhikargacha Upazila in the district of Jessore through advancing capacity of climate vulnerable community through awareness raising and implementation of adaptation activities, with the support of **Palli Karma-Sahayak Foundation (PKSF)** and which is funded by **"Bangladesh Climate Change Resilience Fund (BCCRF)".** Samadhan has been implementing the sub-project titled "**Advancing capacity of climate vulnerable community through awareness raising and implementation of adaptation activities Project** (**CCCP)**" under Community Climate Change Project (CCCP) since August 20, 2014. The sub-project is mainly working to increase resilience of the community to adapt with flood by enhancing knowledge and understanding about climate change and initiating various adaptation activities. The community is also working to establish mechanism to address future vulnerabilities to climate change in their locality. To mitigate and Response to the hazard's problems of the area we call the local people, elites, stakes holders, local government's peoples to a meeting to indentify the problems and to indentify its remedy.

Goal of the Project:

To strengthen Capacity of Climate Vulnerable Communities by providing training and adaptation supports.

Objectives of the Project:

Reduce flood associated risks by raising household level plinths, installation of deep tube-well, livelihoods training & support and installation of sanitary latrines

Project Duration:

August 20, 2014 to December 31, 2016 (27-Twenty Seven months)

Name of working areas

The sub-project has been implementing at Jhikargacha Upazila of Jessore district. The upazila is situated on the bank of Kapotaksha River. The area was selected on the basis of flood/water logging vulnerability and poverty concentration. Thus, 02 unions of the upazila have been selected for adaptation interventions, one is Panisara another is Bakra. These unions have been selected in consultation with local governments, administration and community representatives.

The names of working areas are presented in the table below:

Table 1: Working Area

District	Upazila	Union
Jessore	Jhikargacha	1. Panisara
		2. Bankra

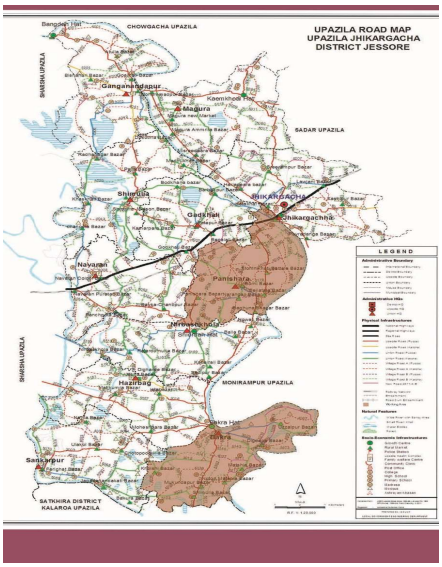

Figure 1: Working Area

Target Beneficiaries:

The project has been implementing within 08 villages of 02 unions. A total of 500 HHs are selected to implement the sub-project where 344 HHs from Bankra and 156 HHs from Panisara. About 25 Climate Change Adaptation groups (CCAG) have been formed with an average of 20 members in each group. The group is known as "Climate Change Adaptation Group (CCAG)". The group members are mainly poor and marginal women who are the head of their households. The members are also included from small & marginal farmer and fishing community. The sub-project also covers 2,500 people of the working area as indirect beneficiaries who are mainly family members of the selected households, community leaders and local government representatives.

Project Budget:

Total Budget	CCCP Contribution	PIP Contribution	Community Contribution
1,27,17,350	1,15,00,000	6,02,350	6,15,000

Major Activities

Activities of the sub-project were selected through community consultation and with the involvement of local government representatives. Numbers of consultation meetings were held during proposal development phase. The major activities includes homestead plinth raising in cluster approach, goat rearing in slatted house for promoting alternative livelihood option, Installation of deep tube-wells and tube well with platform for safe drinking water, and Installation of sanitary latrines. The sub-project also provides necessary training to build capacity of the community on climate change and it's relation with their livelihoods. The community prepared adaptation action plan for their locality to address the adverse impacts of climate change in the long run.

Chapter 2: Vulnerability of the Sub-project Area

2.1Context of Climate Change

2.1.1 Temperature

The South-Western region Jessore is characterized by high temperature, high cold wave and high rainfall compare to average condition of Bangladesh. Average temperature ranges from 9°C to 41.0C in the hottest season and 7°C to 15°C in the coolest season. However, the region sometimes experiences extremes – in summer, some of the hottest days experience a temperature of about 45°C or even more and in winter temperature falls to about 7°C in some places.

Annual average temperature range from 9 to 41 °C (48 to 106 °F).

Table- 2-Climate data for Jessore

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Average high °C (°F)	22.9 (73.2)	27.0 (80.6)	33.4 (92.1)	41.0 (105.8)	38.1 (100.6)	32.6 (90.7)	31.4 (88.5)	31.6 (88.9)	32.1 (89.8)	31.5 (88.7)	29.2 (84.6)	24.9 (76.8)	31.31 (88.36)
Daily mean °C (°F)	15.4 (59.7)	19.3 (66.7)	26.1 (79)	34.6 (94.3)	33.0 (91.4)	29.2 (84.6)	28.4 (83.1)	28.6 (83.5)	28.7 (83.7)	27.2 (81)	23.1 (73.6)	17.8 (64)	25.95 (78.72)
Average low °C (°F)	9.0 (48.2)	11.7 (53.1)	18.9 (66)	28.3 (82.9)	27.9 (82.2)	25.8 (78.4)	25.5 (77.9)	25.6 (78.1)	25.4 (77.7)	23.0 (73.4)	17.0 (62.6)	10.6 (51.1)	20.73 (69.3)
Average precipitation mm (inches)	11 (0.43)	19 (0.75)	40 (1.57)	77 (3.03)	168 (6.61)	314 (12.36)	304 (11.97)	293 (11.54)	245 (9.65)	133 (5.24)	28 (1.1)	8 (0.31)	1,640 (64.56)
Average relative humidity (%)	46	35	36	44	60	76	75	76	74	70	51	44	57.3

2.1.2 Precipitation

Observed data shows that both number of days without rainfall and annual total rainfall in Jessore experienced changes in rainfall patterns. The most important changes noted by the people living in the southern part of Bangladesh are excessive rains, both in terms of the absolute amount throughout the monsoon season and single very intensive high-rainfall events. Also, an increase in the variability of rainfall, in terms of "too much" and "too little" rain and its timing, as rain is either absent or comes at unexpected times. Overall, the total monsoon rainfall seems to be declining at a rate of about 64.56mm per year, as shown in figure, on the basis daily rainfall time series for Jessore weather office during 2000 and 2002.

While the total amount of monsoon rainfall in Jessore and thus the change in the absolute amount of rainfall – is only negligibly declining or even increasing, figure shows that the variability of rainfall is increasing. In the flood year 2000-2002, for instance, throughout the whole rainy season, the absolute amount of rainfall was more than 80 mm above the average of all the monsoons between 2000 and 2002. More recently, excessive rains – also with impressive peaks in terms of single heavy rainfall events – are recorded for the monsoon in 2015. The annual rainfall is 1,537 millimeters (60.5 in).

Table-3: Precipitation data-

Average precipitation mm (inches)	11 (0.43)	19 (0.75)	40 (1.57)	77 (3.03)	168 (6.61)	314 (12.36)	304 (11.97)	293 (11.54)	245 (9.65)	133 (5.24)	28 (1.1)	8 (0.31)	1,640 (64.56)

Total monsoon rainfall in Jessore district between 2000 and 2002.
Source: Daily rainfall, time series, Jessore Station, Bangladesh Water Development Board (BWDB).
With courtesy of Flood Forecasting and Warning Centre (FFWC), a body within the BWDB, serving under the Ministry of Water Resources (MOWR).

Note: June to September is monsoon period;

2.1.3 Climate Change stimulate Hazards

People have noted visible changes in the seasonal pattern. Three seasons – namely, summer, monsoon and winter have become major. Other three seasons namely autumn, late autumn and spring seem to merge with three seasons due to climate change. Summer has become prolonged and very hot. Rain starts very late; and the season manifests in few bouts excessively heavy rains and dry spells in-between. Winter has become delayed, short and severe. It also includes several spells of cold-wave. These variability and seasonality of climate elements have significant impacts on climate change induced hazards. Frequency, timing and nature of the hazards have also changed. Earlier, in 2000's and 2002's, floods were usually a single incidence of deep inundation in a year but, nowadays, flood has become recurring events with low inundation in a given year. However, major hazards are described below:

Analysis of changing agricultural pattern in Jessore:
Environmental and social aspects

Bangladesh is a highly populated country and majority of the population depends on agriculture. The objective of the study is to assess the changing agricultural pattern and production in last three decades in Jessore (1981-2010) which is being influenced by environment and social parameters. For this research work, the related data and information have been collected from both primary and secondary sources. There was a massive change in agriculture pattern influenced by various parameters including soil character, rainfall, temperature, relative humidity, groundwater level, as well as availability and use of various agricultural inputs, modernization of cultivation method, improvement in transport and marketing system in last three decades. Result revealed that the soil nutrient, soil organic matter, and soil pH have been decreasing but increasing the arsenic contamination and water contamination due to over use of land, chemical fertilizers and pesticides during 1981-2010. The results also showed that there was a significant transformation of agricultural pattern. Per unit area and yield of cereal crops such as transplanted Aus & Aman, Boro, and vegetables had been increasing gradually while decreasing the broadcast Aus, Aman and Banana. Rabi crop area is decreasing which was 0.45 ha per household in 1981-90 and decreased 0.29 ha in 2001-10 but yield is increasing for better management and use of good seed quality. From 1981-2010, per unit yield of non cereal crops such as jute, flower and cotton has been increasing although area has been decreasing accept flower. Per unit area of wheat, sugarcane and fruit has decreased but timber tree has found to be increased during this period. The forest sub sector such as commercially used lichi, mango and baukool cultivation has largely increased after 1990. Average number of date tree cultivation per household has rapidly declined which was 26 in 1981-90 and 4 in 2001-10. Unit area and yield of fish cultivation are increasing gradually which was 0.17 ha in 1981-90 and 0.48 ha in 2001-10. Livestock raising has been increasing with change of purposes, from domestic to commercial and which was 2873 million in 1984 and 3853 million in 2001-10. Use of local seed in cultivating all the cereal and non-cereal crops has been decreasing gradually. Increase yield per unit of land has risen for improved water control, better soil preparation, better seed quality and better harvesting and post- harvesting processing. Therefore, these practices have great influenced increasing in the cropping intensity in Jessore from 168% to 185% in 1984 and 2008 respectively. Cost of cultivation has reduced for use of modern appliances. Educational status, age and gender of farmers, secondary occupation, training on agriculture from GoB and NGO influenced the agricultural pattern in last three decades in Jessore. Opportunity to receive credit from

GoB and NGO has increased during 1981-2010. Receiving training on agriculture has improved farmer's quality to utilize input materials optimally. Marketing system, supply chain linking, transport management and communication have remarkably changed. The farmer has got fair price of their products which has great influence on changing agricultural pattern. Use of chemical fertilizer has increased from 14% to 95% while organic fertilizers has decreased from 86% to 5% from 1981-1990 to 2001-10 respectively. For irrigation purpose, traditional methods are replaced by modern methods over decades. Swallow tubewell and deep tubewell were used by 10% and 3% household in 1981-90 and 85% and 8% in 2001-10 respectively. Modern cultivation method has become popular and traditional method has declined gradually. Pesticide use has been increasing rapidly which was 12% in 1981-90 and then 51% in 2001-10. The overall transport system including roads and vehicle has developed in Jessore like other places of Bangladesh. Pickup, truck, trolley and nocimon have become popular transport to the farmers to carry agriculture products instead of traditional vehicles. Uses of pickup and truck were absent in 1981-90 and it was 57% and 49% in 2001-10 respectively. Bullcart and headload have declined rapidly in the study area which was 94% and 90% in 1981-90 and reduced to 3% and 1% in 2001-10 respectively. Therefore, the present study concluded that agricultural pattern in Jessore has changed over period for multi factorial elements including environmental aspects such as soil nutrients, rainfall, temperature, relative humidity, groundwater; and social aspects such as education level, getting training on agriculture by the farmer and availability and use of chemical fertilizer, pesticides, transport and marketing system, communication and credit facilities.

Description:

This dissertation submitted to the University of Dhaka in partial fulfillment of the requirements for the degree of Ph.D in Geography and Environment.

Previous history of Flood

Floods are normal phenomenon in Bangladesh. It usually occurs during the monsoon season. Monsoon flood in June, 2015 was one of the devastating catastrophes over the last couple of years in terms of frequency and intensity in the sub-project area. It continued from 13th June to first week of July, in 2015. Main cause of monsoon flood was heavy rainfall in the locality. The flood situation of Jhikargach Upozila in Jessore district has worsened due to incessant rains and onrush of water from the upstream. Flood marooned at least one lac people in low-lying areas of around Panisara and Bankra union in Jikargacha Upozila in Jessore district. Sources of the Bangladesh Water Development Board (BWDB) represents that the water level of the Kapotaksha River rose by 2 cm. The flood-affected people were required emergency supports including dry food as lack of cooking fuel. Besides, crops and vegetables in the area have been submerged by flood water. (Gramer Kagoj). Near about 800 households of 2 unions marooned by Kapotaksha river over flowing. Houses, road and 1500 hector agricultural field inundated, 280 ponds washed away due to heavy rainfall and upstream water flow at Jhikargach upozila. 8 villages of Panisara and Bankra union of Jhikargacha upozila inundated due to heavy rainfall and upstream water in the last flooding. Several thousands of people of Jhikargacha in Jessore district were stuck due to flood as water level of river Kapotaksha have increased beyond the danger point. Houses and communication system have broken down and the residents along with their pets took shelter in higher places. Department of Agricultural Extension (DAE) of Jessore informed that *Aman* crops of some 1500 hector land went under water during this flood. In addition, 8 educational/religious institutions fully and partially destroyed by this devastating flood.

Although the area affected by flood which was high, the duration was relatively short; the water flow was above the danger level for consecutive for 3 months.

Cold Wave: Bangladesh as a tropical country enjoys a moderate winter. However in recent years the country has experienced numerous cold waves during the winter. These natural events are termed as disaster when adversely affects the whole environment, including human beings, their shelters, or the resources essential for their livelihoods. For last few years the country experienced some severe cold waves that caused serious damage, distress and disruption for the affected people. In January 2010, southern parts of the country experienced a rapid fall in temperature with cold winds and dense fog resulting significant rise in respiratory illnesses and in some cases deaths, while in January 2011, the Meteorological Department recorded the temperature as 7 to 10 degree Celsius lower than the normal average temperature (about 10°C) during that time of the year.

The impact of cold waves is as notorious as other regular natural calamities of Bangladesh as far as the damage, distress and disruption as well as death toll was concerned. The cold wave of January, 2011 claimed 39 lives with most victims being children and the elderly. Hospitals in the affected districts have reported higher numbers of admissions with cold weather related illnesses. The weather has also caused crop and other natural resource loss, which will have a longer-term negative impact on the economic condition for the already poor communities in the worst affected areas.

In 2013, cold wave coupled the country during the first week of January, affecting few districts in the south-west namely Kushtia, Jessore, Faridpur and Madaripur. More than 50% of population living in those districts were affected and 80 people were died, where many of them were children. During the cold wave of 2013, the temperature of Syeddpur dropped down to 3 degree Celsius, the lowest records in Bangladesh since 1968.

Physical Context

Jessore District encompasses 2606.98 km². It is bounded by Jhenaidaha and Magura districts at the north, Satkhira and Khulna districts at the south, Narail and Khulna districts at the east, and West Bengal of India at the west. Major rivers that flow through this region are the Bhairab, Chitra, Betna, Kobadaksha,harihar and the Mukteshwari.[2]Jessore district is situated in the south-west region of the Bangladesh. The land form is fully characterized by five rivers of the district named Kapotaksha, betna, harihar, Vairab, mukteshwari and chitra. The river shapes the land form of the sub-project areas is Kapotaksha. Most of the rivers are inactive causing behind siltation of the river bed and illegal gher. All the selected unions are remotest and situated in the river basin areas which are subject to annual flooding and waterlogging.

Temperature variation due to climate change affects the timing and rate of precipitation in monsoon, would generate additional volumes of runoff.

Socio-economic Context.

Jessore is one of the poorest districts in the country. A poverty map of Bangladesh shows that the highest numbers of poor people live in Jessore district while the rate is lowest in Kushtia district (HIES 2010, Population Census 2011, BBS and World Bank). Jessore District had a population of 2,764,547 at the 2011 Census. 85.5% of the population is Muslims, 14.21% are Hindus and the remaining 0.29% practices another religion.

The average literacy rate is 45.2% — very low compared to the rest of the world, but average in Bengal. 41% of males are literate, while only 25.1% of females are. There are many occupations in Jessore district like agriculture, agricultural laborer, wage laborer, fishing service, transport job, commerce etc. The main occupations are agriculture 39.84%, agricultural laborer 24.13%, wage laborer 2.68%, commerce 11.99%, service 8.66%, industry 1.41%, transport 3.11% and others 8.18%. But agriculture is the main occupation in this area. Major occupation is subsistence agriculture which is highly sensitive to flood/waterlogging. It also affects employment of rural people particularly those who are day laborer of daily wage labor.

Chapter 3: Existing Practices of Adaptation and Risk Reduction

Government Initiatives

As Jessore is one of the most vulnerable districts of Bangladesh due flood/water logging, drought and to its geographical situation; there are a lot of government interventions in the project area such as: Constructed disaster resilience/protected shelter cum school where people can take shelter during flood/water logging situation. Akti Bari Akti Khamar, Kabikha, Cash for work (Karmo Srijon Prokalpo), Rural Employment and Road Maintenance Programme, Food for Work etc, Vulnerable Group Feeding (VGF) card provided to 108 family at union parishad level which will be continued till 2017.

In terms of climate change variability and extreme events including flood, drought and cold wave in Jessore a lot of climate change and disaster related projects have been implemented in this project area. Projects like: embankment both side of the Kapotaksha River, Implement By-WDB, Established Sweet water Irrigation system for crop cultivation by BADC. Installing 200 latrines through DPHE under Jhikargacha Upozila.

Active NGOs and CBOs in the Project area:

A number of NGOs are working in Community Climate Change project area in Jessore district. NGOs and CBOs like Samadhan is working for 500 hhs by installing DTW 35 nos., 142 hhs level plinth raising, 413 nos slatted goat shed and 100 nos. of improved sanitary latrine installation with the support of Palli Karma-Sahayak Foundation (PKSF), Basteshikha is working for child and mother health care, pregnant mother, nutrition, awareness building, nutrition education, cleanliness practice etc, Ad-din welfare center is working for child and mother, pregnant mother through Satellite clinic, Solar Home system established by Grameen Shakti, so far 10-80 watts power Solar Home system support provided to 430 hhs. Ars Bangladesh is working with solar Home system and provided support to 80 hhs. Susomaj Foundation raised 160 hhs plinth, build 50 nos. shelter, Relief for 200 families during flood situation in 2002 in Bankra under Jhikargacha Upozila. Palli Progoti Sangostha has provided 35 hhs solar Home systems with the support of BNF and it will be ongoing till this year end.

Completed Projects:

Recently some projects of different NGOs have completed in the project area. The completed projects including implementing NGOs are; HHS plinth raising by Susomaj Foundation. Shelter, food and non-food items by Karitas, Save drinking Water plant by Arsenic net work Bangladesh.

Existing Projects:

The CCCP sub-project has been implementing at Jhikargacha Upazila of Jessore district which is situated on the bank of Kapotaksha River. A number of projects are being implemented by different NGOs in the project area. The existing projects including NGO names are: Community Climate Change Project (CCCP) of Palli Karma-Sahayak Foundation (PKSF), Health & Nutrition by Basteshikha; Solar Home System by Palli Progoti Sangostha, Solar Home System by Grameen Shokti; The existing safety net programs are; Eakti Bari Eakti Khamar, VGD, VGF, old age allowance, disable allowance, pregnant mother allowance, widow allowance, etc.

Chapter 4: Outcome of the Sub-project Activities

Activity 1: Plinth raising-

Experiencing past highest flood level, the sub-project has raised plinths of 142 HHs in the selected unions as per activity Implementation Guideline of CCCP. Households were selected on the basis of cluster through series of consultation meeting held at CCAG level. This earth work created employment opportunity of the poor people for daily work during lean period. Where deliberate effort made to engage male counterpart as the soil carried from the distance place. This plinth raising activity has created employment opportunity and as well as contributed in food security of poor family within the villages for about 20 days and protected them from selling advance labour, distress sale of assets and migration during lean period. Raised plinth contributed to save life, household assets, cattle, poultry and shelter for others people during flooding and also enabled to produce vegetable for family nutrition support and earning from sale of surplus production. Some people prepared seedlings on the plinth during flood.

Photograph 1: Households level Raised Plinth

Activity 2: Goat rearing in slatted house-

Goat rearing is a very traditional practice in throughout the country. Mainly the poor and marginal people rear goats to support their livelihood during lean period. But they face challenges to reduce diseases and mortality of the livelihood resources. The major problem of traditional process of goat rearing is that people keep goats on soil at night. It allows goat to inhale methane from their urine which causes bronchitis, cold and other respiratory diseases. To overcome these problems, the sub-project has introduced slatted houses for goat rearing which is a proven technology of reducing these diseases. In addition, rural poor people rarely keep information about vaccination and treatment of goat. The sub-project supports to make slatted house for goat, training on improved management of goat rearing, vaccine and other veterinary services. It is observed from the field that disease of goat has been reduced, goats become healthy and consequently productivity increased.

Photograph 2: Goat Rearing Slatted Shed

Activity 3: Installation of sanitary latrine-

Sanitation in flood prone areas is one of the climate and environment sensitive sectors. The people of remote areas use low cost sanitary latrine on flat land which is not hygienic. In addition, these latrines inundate every year during flood. Every year the flood is attacking, damaging and washed out away their latrines. Poor people have been lost economical solvency and they are unable to rebuild damaged latrines. Actually they are facing embracing situation to manage foods, hence rebuild the latrines is not important to them, therefore they are living in most vulnerable situation and using open space for defecation, which are alarming again for environment and other community people. CCCP designed the latrine to ensure hygiene which is comparatively higher cost and constructed on raised places. CCCP of PKSF terms the latrine as "second generation latrine". The exclusive attribute of the latrine is that it has water supply systems (a water reservoir is constructed attached with the structure connected with pipe and tap), handle inside the latrine for children, pregnant women, elderly people and physically disable persons. Other than that there is ceramic pan, separate pit connected with PVC pipe, plastic door, tin-roof, bricks wall with sufficient ventilation etc. This is the first time this kind of latrine is representing in the flood prone area. The field observation shows that those who have already received latrine are maintaining hygiene. Now they know how to keep a latrine hygiene and healthy.

Photograph 3: Improved sanitary latrine

Activity 4: Installation of Deep tube-well with platform for safe drinking water-

The main objective of this activity is to ensure safe drinking water for the flood affected people. During flood, most of the tube-wells go under water and thus scarcity of drinking water occurs. It affects human health particularly of women and children. They get affected various water borne diseases including diarrhea, dysentery, arsenic osis etc. Though installation of deep tube-well is a traditional solution of scarcity of safe drinking water but the process of intervention is innovative. A committee was formed for each deep tube-well. The committee members were trained on maintenance and management of deep tube-well. This committee will look after the deep tube-well in the long run. The committee has raised a fund to long run and maintenance of the tube-wells. MoU was signed among the tube well committee with the organizations to make the intervention sustainable. It is interesting to note that beneficiaries have contributed 10% and or in some cases more of total cost in cash. These cash contributions make stronger the ownership of deep tube wells. In addition to this, Department of Public Health

Photograph 4: Deep Tube-well with platform

Engineering (DPHE) of Jhikargach upazila provided time being advice and technical supports in installing the deep tube wells.

Activity 5: Home stead Gardening-

Homestead gardening is a non-budgetary activity which is fully contributed by the respective beneficiary. Homestead gardening was not possible particularly during monsoon due to low plinth and flood water. Every year flood damages their vegetables, seed bed etc. After raised plinth, they are cultivating vegetables in their raised homestead. Beneficiaries are able to fulfill their food/nutrition demand and sell the excess vegetables to the local market. This homestead gardening have created as an earning source. Almost all the clusters have become green circle and beneficiaries owned this practice which was contributing environmental sustainability.

Photograph 5 : Home stead garden

Activity 6: Goat Rearing Training

Four hundred and thirteen (413) slatted goat sheds have been provided among 413 selected households with the support of Palli Karma-Sahayak Foundation (PKSF). The Sub-project organized Goat rearing training for 413 nos. direct project beneficiaries forming into 14 batches. Training was scheduled (morning 9 to afternoon 5 pm.) for two days for individual batch. To organize the training session of the goat rearing beneficiaries engaged two veterinary doctors from upazila livestock office, Jhikargacha. The training discussion schedule were included- Kinds of goat, availability area, rearing process, structure of goat shed, feed, disease and its symptom, care and prevention, market value etc. This training will help beneficiary to recognize the symptom of disease like, pneumonia, bronchitis, plegs etc, through this practices mortality rate of goats will be reduced. The field observation shows that those who have already received hygienic slatted goat sheds, diseases risk are reduced during flood situation. Now they are well aware about goat rearing process.

Photograph 6: Goat Rearing Training of Project Beneficiaries

Activity 7: Goat Vaccination

PPR is one of hazardous disease of goat in our country which challenging to our livelihood resources. To put away goats from harmful disease there is no alternative except vaccination of the goats. Vaccination is one of the crucial farm duties of Goat rearing activity which reduce the mortality rate of goats. The sub-project arrange for vaccination programme with the support of Palli Karma-Sahayak Foundation (PKSF) for direct and indirect beneficiary's goat in the project area to protect goat from the disease like, PPR, pneumonia, bronchitis, plegs etc. The project staff were informed schedule date, time and place to the concern beneficiary for their goat's vaccination. Engaged veterinary doctor's (two) from livestock upazila office, Jhikargacha on discern date, time and place for vaccination of goat. About 2,524 nos. of goat have given vaccine which the disease like PPR, pneumonia, bronchitis, plegs along with mortality rate are reduced. Now beneficiaries are well aware about the vaccination use and its role in goat rearing activity.

Photograph 7: Vaccination under Goat Rearing Activity

Activity 8: Project inception Workshop

The sub-project has organized inception workshops at Upazilla level namely Jhikargacha Upozila under Jessore district. Begining of the meeting chief guest Md. Azmul Haque, Upazila Nirbahi Officer, Jhikargacha Upazila conveyed his best regards to the participants of the meeting. Then he said that Climate Change is one of biggest global issues now days. Due to the riches country of the world the climate change impact are increasing rapidly and chronologically. Now Bangladesh is the most vulnerable country considering the other country in the world due to its geographical situation and Climate Change Impact. He also discussed the issue causes behind climate change. He says that Government of Bangladesh has looking forward to reduce Climate change Impact through awareness building and Implementation of adaptation activities at community level. To protect natural and harmful impact the government of Bangladesh has prepared "Bangladesh Climate Change Strategy and Action Plan" in 2009. Next by 2010 to implement "Bangladesh climate change strategy and action plan (BCCSAP)" the government has formed "Bangladesh Climate Change Resilience Fund (BCCRF)" with the financial support of the develop countries. Bangladesh Climate Change Resilience Fund (BCCRF) governing council has given 10% money under Palli Karma-Sahayak Foundation (PKSF) responsibility to implementation Community Climate Change Project through Non-government Organization (NGO). Representatives from Upazila administration, union parishad, civil society, journalists and NGOs attended in the workshop. They have also provided valuable inputs and comments for successful implementation of the project. Representatives of local government have also assured to provide all sorts of supports needed to the sub-project.

Photograph 8: A view of Samadhan-CCCP Inception Meeting Speech by Chief Guest- Md Azmul Haque, Upazila Nirbahi Officer, Jhikargacha Upazila, Jessore.

At last he thanked to the World Bank, the Government of Bangladesh, Palli Karma-Sahayak Foundation and Samadhan to take initiative to reduce vulnerability of the poor marginal community people in Bakra and Panisra union under Jhikagacha Upazila in the district of Jessore. He also thanked to the participants of the meeting for their active participation in the meeting and ends the speech through Inauguration.

Activity 9: Bio-weekly Group meeting for CCAG members.

The sub-project formed 25 beneficiary groups where each group consist 20 members and conduct bio-weekly meeting for CCAG at community level to build awareness and to cope and reduce climatic problems. Community can sustainable, effective and prompt services to the small producers, and also develop new entrepreneurs. Strengthen Capcity to Climate Change Adaptation & Mitigation Measures and disaster preparedness & response mechanism for selected CCAG members. The beneficiaries are being aware by discussing in the group session about Climate Change, Disaster Management such as changing pattern of Flood and also discussed on social issues like Domestic Violence, Early Marriage, Dowry, Tree plantation etc. All the group participants are direct beneficiary or family members/relatives of the direct beneficiary. It is expected that trained beneficiary will not be in distress situation in the upcoming flood and they are in better shape to cope with upcoming floods.

Photograph 9: Bio-weekly CCAG Meeting

Chapter 5: Need Assessment and future adaptation option

Every union parishad has Union disaster Management committee (UDMC) they are working for pro-poor interest since the committee formed. Each UDMC have formed with 36 members to address the disaster issues in time. By the help of them, it is expected that some members of CCAG will take membership in Union Disaster Management Committee and able to develop strong linkage with Union Parishad as well as Upazila Parishad. In this way, CCAG will take shape of community institution for all sorts of disaster management and reduce the effect of climate change.

For future action, community people developed an adaptation action plan.

Table 4: Matrix of an Adaptation Action Plan

Problem/ Risk	Impacts	Existing Practice	Future Needs	Resource	Institution/ stakeholders	Time/ Duration
Flood	• Infrastructures (house, road and school college) submerged • Loses and damages of agricultural crops • Lose of agricultural land and cattle. • During and after the flood different diseases vectors disseminate for human, livestock. and plant • Increase water borne diseases. • Social food security become at extreme risk. • Communications systems, safe water and sanitation become obsolete. • Damage	• Take temporary shelter at house loft, house shed, others raised plinth, under open sky, school, college and embankment. • Sales their valuable assets and advance labor. • Stay on boat or banana raft. • Tree plantation around houses. • Plinth raising • Store dry food	• Construction of the Infrastructures (Raise plinth and school ground, road and embankment, • Installation tube well and latrine) considering the highest flood level. • Innovation the flood tolerant crop varieties and introduction the cultivation of floating vegetables. • Savings for food security and stock dry food, cooking stove, emergency	• Adequate earth and land • Laborious / hard worker • Confident and brave • Skill man power • Boat or banana tree • Volunteer group.	• CBOs • UP • NGOs • Upazila administration and line agencies (DAE, Livestock, Fisheries, LGED, DPHE, PIO etc).	Short term Short term Short term

Problem/ Risk	Impacts	Existing Practice	Future Needs	Resource	Institution/ stakeholders	Time/ Duration
	agricultural field by soil sediment. • Disrupt education activities and transport system. • Decrease work opportunity and change occupation. • Increase distress to old, disable and pregnant woman	• Prepare movable cooking stove • Make new boat and repair old boat.	medicine and oral saline. • Arrange vaccination programme for livestock after flood. • Formation of Groups volunteers and security team for social security.			Short term Long term
Flood	• Create health hazards due to absence of save drinking water and sanitation. • Increasing poverty and the deterioration of the social well being. • People have migrate for employment • Increased unemployment and family strife.	• Temporar y shelter grows up to the embankm ent and Khash land. • High interest loan taken to overcome risks • Increase child labor • Increase migration	• Constructio n embankme ntand blocked dam. • Tree plantation • Distribution of low or without interest loan to overcome risks. • Introduce IGA to economic developme nt. • Prepare easily transferabl e housing.	• Bamboo, Straw and wood tree. • Confident and brave • Boat or banana tree.	• CBO's • UP • NGOs • Upazila administrat ion and line agencies (DAE, Livestock, Fisheries, LGED, DPHE, PIO etc).	Long term Short term Short term Short term Long term

Problem/ Risk	Impacts	Existing Practice	Future Needs	Resource	Institution/ stakeholders	Time/ Duration
Cold wave	• Reduce the crop production and growth • Increase mortality rate of old people and child. • Increase the incidence of diseases to human and livestock • Decreases the workplace and employment. • Communications systems are obstacles on the way to the river.	• Straw burning to be warm or protect cold. • Spending the whole day idle inside the house. • Uses warm cloth • Putting gunny sheet on cattle to protect from cold.	• More Adequate worm cloth. • Winter based crop cultivation. • Training and cultivation on winter based homestead vegetable gardening to food security and nutrition. • Forestation. • Vaccination program. • Technical training for IGA.	• Mental Stamina. • Leaving house. • Torn quilt, thin cloth. • Straw	• CBO's • UP • NGOs • Upazila administration and line agencies (DAE, Livestock, Fisheries, LGED, DPHE, USWD, UWAO, PIO etc).	Short term
Strom	• Destroy houses and trees. • Crops damage. • The sudden death of people and animals by thunder and tree fallen. • Capsized the boat. • Forestation widespread damage.	• Replaces the old by new bamboo poles with home. • The stake pulled with a rope from the shed. Temporary fix by bamboo. • During the storm stay under cot. • Call God by Azan/ Adhan • Planted trees and banana around	• Housing by RCC pillar. • Established semi - puccka housing at permanent char • Forest wall around the houses • Forecasting the storm by radio and electric media. • Trained rescue team buildup. • Develop Early warning system	• Laborious / hard worker • Confident and brave • Skill man power • Social cohesion/ bonding	• CBO's • UP • NGOs • Upazila administration and line agencies (DAE, Livestock, Fisheries, LGED, DPHE, USWD, UWAO, PIO etc).	Short term

Problem/ Risk	Impacts	Existing Practice	Future Needs	Resource	Institution/ stakeholders	Time/ Duration
		the houses • Keep low height of houses • Understanding the forecast of storm by looking at the sky	• Develop Disaster Volunteers • First aid team buildup.			
Drought	• Increase disease. • Increase sun heat. • Water level down. • Change occupation. • Damage agriculture field. • Soil crack and fertility lost. • Dry ponds, fields, rivers and canals.	• Tree plantation around houses. • Block wise tree plantation. • Installation deep tube well. • Digging deep pond.	• More environment friendly forestation. • Drought tolerance crops cultivation. • Irrigation system implement as small scale. • Organic manner use to increase soil fertility.	• Skilled manpower. • Adequate lands • River water • Adequate lands for tree plantation.	• CBO's • UP • NGOs • Upazila administration and line agencies (DAE, Livestock, Fisheries, LGED, DPHE, USWD, UWAO, PIO etc).	Short term

Chapter 6: Best Practices/Case studies

Best Practice 1:

Raised Plinth strengthening Adaptation Capacity and the Community make resilient from flood

Baliadanga is a village of Bankra union in Jhikargacha Upazila under Jessore district. Most of the peoples of these villages are underprivileged and vulnerable in many portions. Maximum peoples are suffering from natural hazards and common phenomenon. This village is particularly vulnerable as the Kapotaksha river basin area causes extensive flooding every year with unreliable intensity. The poorest households in the village who were involved the **Advancing Capacity of Climate Vulnerable Community through Awareness Raising and Implementation of Adaptation Activities** due to Climate Change Impacts in the South-west region of Bangladesh and the goal of project is To strengthen Capacity of Climate Vulnerable Communities by providing training and adaptation supports to flood affected victims for pro forcing people to settle on low lying vulnerable lands, more landless and lower average daily wage rates. The disasters cause many casualties and substantial damage to houses, agricultural crops and other assets, livestock including health hazards almost in every year.

In this circumstances, 41 households peoples who have been involved in the sub-project to strengthening capacity for identifying different problems through consulting community by forming Climate Change Adaptation Group (CCAG) to take adaptation and mitigation measures to rebuild resilient community. For upcoming, they have been got support from the sub-project with the technical and financial assistance by Palli Karma-Shahayak Foundation (PKSF). The support includes cluster wise households level plinth raising, Goat rearing in the slatted goat shed, ensuring safe drinking water through deep tube-well installation and promotion hygienic sanitary latrine installation etc. As a result the experience with the raise plinth and flood was really exciting to them in 2015 flood. Interestingly the community peoples, who have been provided supports, could save from suffering of the flood in 2015. They were fully saved along with their own house with children and livestock except some agricultural crops. Happiness at the face of the neighbors was very exciting and thinking that they took shelter at very close to their house, this time.

Best Practice2:

Feel more secure than before

Epigrammatic inhuman story of Flood Affected Vulnerable Hamida Begum & prosperity through Goat rearing in Slatted Shed

Hamida Begum- the Community Climate Change Project's (CCCP) Beneficiary

Hamida Begum (35) a poor dweller of Bankra union under Jhikargacha upazila was affected by severe flood lost her all household assets and had to live for four months at road side in a small shed. She received the Slatted Goat Shed support from the Community Climate Change Project's (CCCP) supported by Palli Karma-Sahayak Foundation (PKSF). A Case study has been conducted to capture the improvement having the support of Goat rearing in Slatted Shed from the Palli Karma-Sahayak Foundation (PKSF).

"I cannot believe that we will have such good Slatted Shed for Goat rearing, it was out of our imagination that Our Goat can live in such type of good quality of Shed. All goats of mine are staying in a safety places now without any anxiety stated by Hamida begum.

Prior situation: She has been living here with her husband Akbar Ali (45), with two daughters and one son, Amirul (17) read up to fifth standard could not study more due to want of money, Zhidul (8) is studding in class four and Ashma (13) reading in class six in a small house since 15 years. The family poses 03 decimal of homestead land and 8 decimal of agricultural land. Her husband is day lobar, suffering from gastric ulcer and their income is very meager. That income is not sufficient to meet up their requirement. They use pit latrine and collect water from a nearby tube well. They usually cook once in 24 hours, in the noontime, after having lunch and a quick dinner in the early evening, they eat watered-rice in the morning whatever left. Rice, lentil and Alo vorta (Mashed potato) are their common menu. They cannot afford meat or fish very often. Every year, this family suffers from periodic food shortages for four months (July- October). During that period they remain partially fed. On the other hand due to repeated flood, they had to spend three to four thousand taka to repair the houses per year.

During & after Flood: During flood (2015), their house was fully damaged and took shelter on road side for four months. That time they lived in an unhealthy condition. They had to collect drinking water far away from the shelter. Sanitation facilities were totally disrupted. Few NGO came to them with food support but that was not adequate. Most of the days they remain partially fed. Their daughter did not go to school for four months. They lost their three goats during flood situation.

Hamida Begum always thinks about her family, how to remove the poverty, how to provide enough food and clothing's to their child. She had a dream to establish a happy family in their society, she want to make educated her child but everything has gone in vain due to poverty. Hamida says "In September, 2014 field supervisor from Samadhan came to their villages and conducted a community consultation meeting. In that meeting they identified the most affected families. She was enlisted as project beneficiaries as per criteria of well being analysis of that village; her category was extreme poor. She inspired by the discussion of Climate Change Adaptation Group (CCAG) and shows her interest to involve in any

Hamida Begum with her Goat

activity by which she can remove the poverty of her family. Based on her interest and scope of work, CCAG selected Hamida Begum as a beneficiary of goat rearing activity by discussing with CCAG of that village.

Sup-project provided her a slatted goat shed as she had 4 goats during selection as beneficiary. She also received goat rearing training provided by the sub-project. She was able to increase her knowledge through CCAG meeting on Climate Change, health hygiene issues such as; clean water, latrine use and feces disposal, environmental cleanliness, hand washing, food hygiene, and diarrhea management etc. They also use green color at the top of the goat shed's tin roof for its longevity.

The sub-project provided slatted goat shed for strengthening adaptation capacity and for goat rearing. Hamida Begum was very pleased to get technical support for rearing goats. She hoped that number of goat will be increased within a year and she will establish a mini goat farm. She has a strong belief that the goat farm would eradicate poverty of her family.

About one year has passed since Hamida Begum is rearing goat and number of goat increased in due time. At this time, Hamida Begum has a total of 08 Goats.

Chapter 7: Guidelines and Manuals

Procurement Guideline

Samadhan has been implementing the sub project mainly to Reduce Vulnerability of the Poor and Disadvantaged Population Due to Climate Change Impacts in the South-west Part of Bangladesh by following the procurement guideline which was developed by PKSF – CCCP. CCCP has to follow World Bank's Procurement Guidelines as well as Public Procurement Act, 2006 (PPA 2006) and Public Procurement Rules, 2008 (PPR 2008) in its procurement activities. But Samadhan has the capability and experience to perform procurement under the PPA 2006/PPR 2008. This guideline has focused on the issue and formulates simplified procedures to carry out a standard procurement practice at root level by the Samadhan as per PPA and PPR. Effective and sound procurement process ensures value for money, economy, efficiency, equity, fairness, transparency, accountability and reliability as well. In public procurement it was legal obligation to meet the above mentioned criteria. Procurement is an indispensable part of the activities under the CCCP both at Project Management Unit (PMU) level and PIP (Samadhan) level. Both the Project Appraisal Document (PAD) and the Operational Manual (OM) of the CCCP provide the overall procurement responsibilities on PMU of PKSF and Samadhan. As per PAD and OM, Procurement for the CCCP would be carried out in accordance with the World Bank's "Guidelines: Procurement of Goods, Works and Services through providing a suitable tools regarding selecting procurement methods will be applied to all procurement carried out under the sub-projects carried out by the Samadhan to ensure an efficient and consistent practice of the procurement processes. It also helped procuring entities and who were involved this to better and faster grasp procurement procedures in the day-to-day course of their activities. Samadhan is following the CCCP designed procurement procedures. The procurement is being carried out by following the operational manual of CCCP which has RFQM, DPM of procurement. Samadhan is following the PPR 2008 to procure the goods and works for their various project activities.

Monitoring and Evaluation Manual:

PKSF – CCCP has been established **Monitoring and Evaluation Manual** for assessing progress on planned activities and results and also it was a tool to monitor the implementation of CCCP in view of PKSF's emergence as financing entity in the climate change adaptation initiatives, it guides the project management to monitor the progress of implementation at Samadhan implemented working areas and results at community level. The Manual served as the

basis for Samadhan implementing sub project monitoring practices in consistent with CCCP practices. It helped document information and knowledge in a way beneficial for knowledge management.

The purpose of the monitoring and Evaluation manual is to support implementation and management decisions of PKSF - PMU CCCP and Samadhan provided useful and timely information to internal management at all levels, address the reporting requirements of PKSF - CCCP and provide for dissemination of useful information and learning to communities and other stakeholders. Appropriate information flow channels and procedures for synthesis and analysis, and quality control mechanisms have been established in order to effectively meet these information requirements. Information would be appropriately archived for future reference.

For successes and failure cases have been documented and would have to be reported accordingly. PKSF - CCCP and Samadhan management provided guide and support to ensure the quality of works and generation of accurate data.

Social Management Framework

The Social Management Framework (SMF) is intended to ensure that the selected NGOs prepare and implement the adaptation proposals taking into account the social safeguard requirements. SMF is further supposed to provide guidance about integrating social and gender dimensions of climate change vulnerability into project screening, preparation, and implementation processes. Samadhan has identified adaptation activities according to the SMF (land use, negative social attributes, integrated social issues and indigenous people's issues). Samadhan has ensured that the target communities, including women and indigenous peoples have been consulted about the sub-project as well as selection of the proposed climate change adaptation measures. SMF is monitored quarterly through social monitoring format which has already been developed by the PMU of CCCP.

Environmental Safeguard and Management

To ensure environment sustainability, (CCCP) guideline has been followed during the sub-project implementation and will be ensured all over the project period. To sustainable execution of environmental issues at field level, environment management documents were developed i.e. Environment screening, Initial Environment Exam, Environment Reduction action plan, Environment Management plan, Environment progress monitoring plan. Environmental Assessment documents are being prepared after any site selection to implement the activities. Samadhan has prepared an EMP that includes environmental impacts and possible mitigation measures regarding proposed activities. Finally, EMP will be monitored on quarterly basis through environmental monitoring format which has already been developed by the PMU.

Grievance Redress Mechanism

Grievance Redress Mechanism (GRM) has been established at sub project level to deal with any complaints/grievance about environmental and social issues. At the sub project level, the Union Parishad (UP) Chairman of the project area is the local Grievance Redress (GR) focal person for addressing the grievances. We have provided register khata to union parishad to register the complaints. We sit together every month during monthly coordination meeting at union parishad to readdress the grievances.

Complaints Handling Mechanism

The Complaint Handling Mechanism (CHM) is intended for the CCCP, PKSF for handling complaints to procurement under the sub-projects. The key elements of the complaints handling procedure are prepared to ensure accountability and good governance. In order to comply with the national laws and regulations, CHM shall refer to Sections 29 & 30 of Public Procurement Act (PPA) 2006 and Rules 56, 57, 58, 59 and 60 of the Public Procurement Rules (PPR) 2008.

Chapter 8: Lessons learnt and way forward

Lessons learnt:

- The idea of CCAGs formation is excellent and the motivation of CBA can foster the relationship across the different socio-economic sectors and adaptation options.
- Public procurement in NGO is a big achievement of the project.
- Community mechanism for each activity is encouraging and helpful to make the activity sustainable.
- Community based Adaptation project requires a combination of local and scientific knowledge.
- Community peoples hide their actual information during the completion of base line survey but children provide actual information.
- Through PRA tools, the community now can identify the problems and able to plan for their future strategy in program and communication with service providers.
- The frequent visit of both donor and partner representatives have increased the quality of works.
- If cluster wise hhs level plinth raising activities considered the local context.
- Common guideline for all contexts slows down the progress.

Challenges:

- Inadequate Earth to plinth raising due to environment management.
- To ensure environment management people of areas have carried earth from distance place to raise plinth.
- Labors are reluctant to earth cutting due to distance places with less payment.
- Local Political Influence.
- To ensure female beneficiaries in programs as south-west part of the country are religiously & socially very conservative as well as male dominant, so we anticipating that mentioned factor may influence on participation of targeted numbers of women in the interventions.
- Cooperation from the local government and community as the project have resources limitations in compare to their immediate need and return.
- Unwillingness and reluctant interest group of relief culture may disrupt the whole goal to achieve.
- All participants might not have similar interest on the adaptation process.

Way forward:

- Create more awareness related campaign about climate change and Flood
- Improved management of cropping system
- Enhance resilience of livelihood resources of ultra poor and poor community through improved and cost effective technologies.
- Increase surface water storage for irrigation and household purposes.
- Link Road, school ground and common place raising.
- There is still huge demand of single plinth raise in the Project areas.
- Cash for work to be provided to the poor and extreme poor people during the lean season
- Disseminate technical knowledge of different earning sources to adapt with climate change.
- Ensure use of abandoned and unused land in the region.
- Capacity of CCCP beneficiaries to be built up to adopt climate change.
- Develop specialized institutions at grass roots level to address climate change.