FINANCIAL INCLUSION AND LIVELIHOOD DYNAMICS: EVIDENCE FROM NORTHEAST RURAL BANGLADESH

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FINANCIAL INCLUSION AND LIVELIHOOD DYNAMICS: EVIDENCE FROM NORTHEAST RURAL BANGLADESH

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Abstract

The study focuses on rural livelihoods in the northeast region of Bangladesh highlighting two important aspects: household strategies and financial intervention. It uses participatory methods and quantitative evidence to understand the livelihood dynamics and the extent of financial inclusion in livelihood securities. In the broader context of vulnerability, the study focuses particularly on vulnerability to risk related shocks and the strategic uses of livelihood assets in combating such risks. The livelihood strategies include income-generating activities, risk coping strategies and the role of institutions in confronting vulnerability. Households develop coping and adaptation strategies to manage risks using various resources available. Strengthening the capacity often needs resilience building with self-efforts and external interventions in order to nullify the impacts of shocks and hazards.

Given the vulnerability context, the study investigates how rural people deal with risks to achieve livelihood securities. Findings show that rural people handle minor risks by self-insurance mechanism including cash on hand and household savings. They manage intermediate risks through community or market-based arrangements including borrowing from moneylender or MFIs. For major risks such as flood and cyclone, they often urge for government or donor support. Household's coping capacity depends on the appropriateness of risk management tools and strength of the households (resilient, weak or fragile). Adaptation and resilience to risks largely depend on household's resource base and external interventions. Financial inclusion is one of the major external interventions in rural livelihoods.

Rural people consider financial intermediation as avital instrument among available livelihood interventions. However, actual role of financial instruments is underutilized, as financial inclusion is incomplete in rural areas. This research identifies some financial inclusion gaps in the northeast rural Bangladesh. To minimise inclusion gaps, the study recommends raising the scale and outreach of banking and financial services through cost-effective means such as agent banking or mobile financial services (MFS). There are potential barriers to those technology-led financial services. For sustainable livelihood security, rural people need these obstacles eliminated.

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Dedicated. . .

‘...to my beloved father who passed away with an unfulfilled aspiration and to my loving mother who has been eagerly waiting for the aspiration comes true.’

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List of acronyms and abbreviations

ASA	Association of Social Advancement
ASCA	Accumulating Savings and Credit Association
ATM	Automated Teller Machine
BB	Bangladesh Bank
BBS	Bangladesh Bureau of Statistics
BDT	Bangladesh Taka
BKB	Bangladesh Krishi Bank
BRAC	Bangladesh Rural Advancement Committee
CARD	Centre for Agriculture and Rural Development
CBN	Cost of Basic Needs
CCT	Conditional Cash Transfer
CGAP	Consultative Group to Assist the Poor
CHW	Community Healthcare Worker
CLC	Community Learning Centre
DFID	Department for International Development
DPHE	Department of Public Health and Engineering
EEP	Economic Empowerment of the Poorest
EFT	Electronic Fund Transfer
EGPP	Employment Generation Programme for the Poorest
FSSAP	Female Secondary School Assistance Programme
FFW	Food for Work
FGD	Focus Group Discussion
FI	Financial Institution
FIVDB	Friends in Village Development Bangladesh
HCR	Head Count Ratio
HIES	Household Income and Expenditure Survey
HYV	High Yield Variety
GDP	Gross Domestic Product
GO	Government
GoB	Government of Bangladesh
HQ	Household Questionnaire
HSC	Higher Secondary Certificate
MDG	Millennium Development Goal
MFI	Microfinance Institution
MFS	Mobile Financial Services
MHI	Micro Health Insurance
MIS	Management Information System
MPI	Multidimensional Poverty Index
MOFDM	Ministry of Food and Disaster Management
MRA	Microcredit Regulatory Authority

NGO	Non-governmental Organization
MNO	Mobile Phone Operators
OLS	Ordinary Least Squares
OTC	Over the Counter
PESP	Primary Education Stipend Programme
PG	Poverty Gap
PIN	Personal Identification Number
POS	Point of Sale Terminal
PPA	Participatory Poverty Assessment
PRA	Participatory Rural Appraisal
PS	Poverty Scorecard
RoSCA	Rotating Savings and Credit Association
SHG	Self-Help Group
SLA	Sustainable Livelihood Approach
SLF	Sustainable Livelihood Framework
SME	Small and Medium Enterprise
SMS	Short Message Service
SP	Social Protection
SPG	Squared Poverty Gap
SSC	Secondary School Certificate
SSN	Social Safety Net
SSP	Social Security Programme
TBA	Trained Birth Attendant
TR	Test Relief
UMM	University Meet Microfinance
UNDP	United Nations Development Program
VGD	Vulnerable Group Development
VGDUP	Vulnerable Group Development for Ultra-poor
VGF	Vulnerable Group Feeding
WASA	Water Supply Authority

Currency used in financial data throughout the thesis is BDT for Bangladeshi Taka (or Tk. for short). Exchange Rate: £1 = 125.7 BDT or $1 = 77.4 BDT on 30 September 2014 (www.bangadesh-bank.org)

1. Introduction

1.1 Background of the study

Exposure to risks and shocks has serious impact on a household's resource base – destabilizing wellbeing and increasing the probability of moving down the poverty line. The probability of being poor or remaining poor is commonly known as vulnerability to poverty in development economics literature (Morduch, 1999, Dercon, 2006). In Bangladesh, various economic and non-economic shocks distress rural households at regular or unanticipated intervals. Rahman (1996) and Hussain, et al (1998) organized them into five broad categories. *Seasonal shocks* cause variations in income and consumption due to seasonal fluctuations in livelihoods. *Financial insecurity* due to lack of employment opportunities or death of main earners is severe in low-income group. *Natural disasters* including floods, drought and cyclones hit Bangladesh almost every year causing life-threatening impacts. *Health crisis* including lack of access to health services, water and sanitation causes vulnerability to contagious and epidemic diseases. Finally, *Social crises* result from social injustice and deprivations such as marriage with dowry, land disputes, and gender discriminations. Rural households use various formal and informal insurances to cope with such shocks. Reducing vulnerability to poverty is a major concern for rural households in Bangladesh.

Coping capacity is a major indicator of household strength in the poverty scale. Households with effective resources are more adaptive and resilient than households that are defenceless due to lack of power and voice. Weak households often use informal insurance such as borrowing at usurious rates and depleting household savings. These are immediate solutions to crises but at the cost of negative impacts on a household's resource base. Strong households, on the other hand, use formal insurance strategies such as loans from banks or MFIs that has negligible negative impacts on household capacity (Rahman, 1996, Morduch 1999). Weak households often need external support to cover risks and reduce vulnerabilities. Development inputs in the form of microfinance, health, nutrition, education and training may enhance sustainable coping strategies (Hussain, 1998). These inputs are *ex-ante* and *ex-post* interventions of government and non-government institutions (Morduch, 1999 and Dercon, 2006). *Ex-ante* or precautionary measures are preventive contributions to livelihood strategies such as microfinance. *Ex-post* or curative

measures are social protections such as cash transfers, food aid and other grants to the poor who are already affected and uninsured.

During the last four decades, Bangladesh experienced a gradual and steady growth in microfinance: initially started as rehabilitation projects for war of independence (1971) in early 1970s, stabilized during 1980s and 1990s and continued on the path of maturity during 2000s onwards. Before this, rural finance was dominated by informal agents like *Mohajans* or moneylenders who lent money to the poor at usurious rates and took the opportunity to grab the assets (or collateral) of those who failed to repay the loan. People were at risk of being poorer, powerless and vulnerable under this system. Existing formal financial institutions presumed that the poor were non-bankable and thus they should be excluded from financial services. To fill the inclusion gap, Microfinance Institutions (MFIs) organized the poor to provide development inputs such as microfinance and training. Unlike banks, these institutions provided collateral free loans to microenterprises and savings facilities to ensure security against shocks.

Initially, microcredit has been instrumental for household strategies including income diversification and consumption smoothing (Rutherford 2000; Hassan 1999). However, global evidence suggests that microcredit has been less effective against unanticipated shocks and larger investment demand (Banerjee, et al 2009; Karlan and Zinman 2009). Researchers and practitioners now emphasise the greater role of microsavings (Hulme, et al 2009) and microinsurance (Ahsan 2010; Hamid 2011) in crises and assets management. They also place emphasis on the provision of microtransfers (i.e. social safety net) to ultra-poor and vulnerable groups who desperately need asset grants and cash allowance along with other financial inputs (BRAC 2012). The most recent innovation is in the mobile financial services that facilitate quick remittance payments for emergency needs and household investments (Yousif 2013; Nabi, et al 2012). However, not a single component of microfinance is uniquely adequate for rural livelihood strategies. While microcredit is a necessary condition, robust use of microfinance (i.e. inclusive finance) comprising all its components are necessary and sufficient conditions for financial wellbeing of the poor. In this context, current research aims to investigate the extent of household capacity and external intervention in livelihoods in northeast rural Bangladesh. The focal point of the study is on the household strategies and inclusive rural finance.

1.2 Research problem and aims

One of the biggest challenges for the poor in rural Bangladesh is how to cope with shocks and adapt to resulting impacts under capacity constraints. Their limited capacity to protect from such crises often results in chronic exposure to poverty and vulnerability. In this context, the study focuses on rural households in northeast Bangladesh assuming the following scenario:

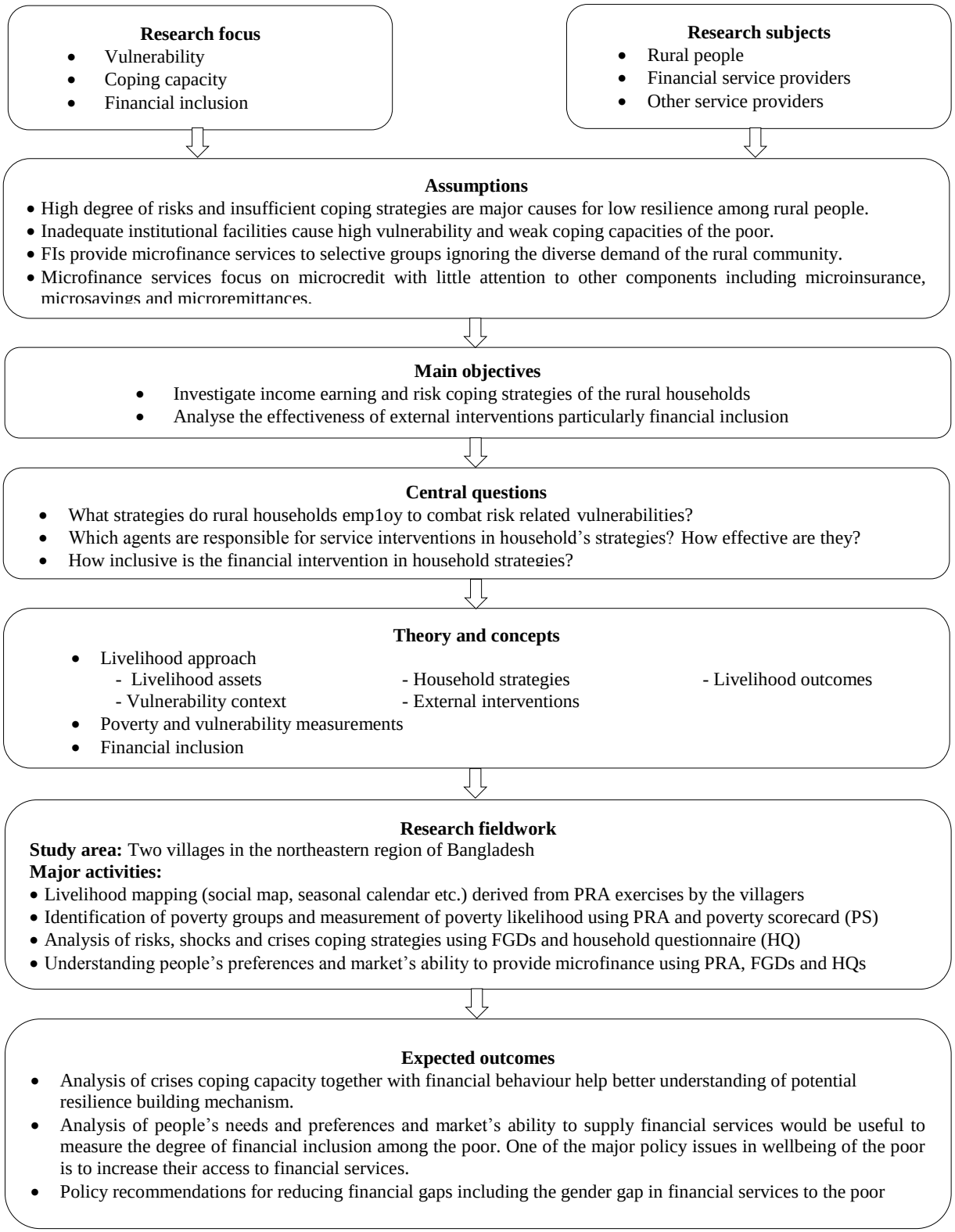
1) High degree of risks and insufficient coping strategies are major causes for low resilience among rural people.
2) Inadequate institutional facilities emanate high vulnerability and weak coping capacities of the poor.
3) Financial institutions (FIs) provide microfinance services to selective groups ignoring the diverse demand of the rural community.
4) Microfinance services focus on microcredit with little attention to other components including microinsurance, microsavings and microremittances.

Based on these assumptions, the study aims to investigate household strategies and external interventions. Household strategies include income generating activities and coping with risks. External interventions comprise intermediation of various rural institutions including financial service interventions. Research aims and relevant assumptions thus lead to an enquiry into livelihood strategies and the extent of financial intervention. Underlying research questions are:

- What various strategies do rural people emp1oy to combat risk related vulnerabilities?
- Which agents are responsible for service interventions in household strategies and how effective are they?
- How inclusive is the financial intervention in household strategies?

Data required for these questions are both qualitative and quantitative. Qualitative methods employ participatory tools (PRA and FGD) to investigate types of risks, coping strategies and people's perceptions of financial products and their uses. Quantitative methods explore poverty, vulnerability, and their links to household strategies and livelihood interventions. Thus, the research process is a combination of qualitative and quantitative approaches commonly known as the 'q-squared approach'. Figure 1.1 depicts the research process at a glance.

Figure 1.1: Research process at a glance



1.3 Overview of related studies

This section provides a short review of existing literature within the core theme of the current research: vulnerability, household strategies, and external interventions including financial inclusion. It gives an impression of the volume of literature reviewed for the research.

Vulnerability and coping capacity: Poverty is static measurement of the poor in headcount, depth and severity at a fixed period. By contrast, vulnerability is a dynamic concept in the sense that it incorporates expected poverty in its measurement i.e. probability of moving in and out of poverty (Pradhan and Ravallion 2000; Kanbur and Squire 2001). Morduch (1994) demonstrated a linkage between poverty and vulnerability through the equation $y = x + \varepsilon$, where current income (y) depends on permanent income (x) and transitory shocks (ε). He argued that interactive relations between vulnerability and poverty would diminish the expected wellbeing of the poor. He suggested that a well-designed public policy ensuring access to credit, savings and insurance facilities might strengthen the capacity of households facing adversity. Dercon (2006; 2002) focused on risk-related vulnerabilities instead of defencelessness of vulnerable groups and argued that coping mechanism and adaptation strategies are central to household livelihoods. He recommended *ex-ante* (such as savings and insurance) and *ex-post* (such as cash transfers) policies for reducing risks and enhancing capacity. He also recommended economic policies leading to macroeconomic stability, better employment opportunities, and increased public safety nets. Rahman (1996) argued that people try to minimize vulnerability using two major insurance mechanisms: 1) Weak insurance includes informal coping strategies supported by non-institutional agents that give immediate solutions to the problem but have long-term consequences on the capacity of the households. 2) Strong insurance refers to the formal coping mechanism that has negligible or no such consequences. Moreover, formal mechanism builds strong resource base needed to insure against future crises**.**

Coping capacity and microfinance: To cope with risks, people use multiple strategies including informal and formal borrowing, saving, and other forms of insurance. During the last few decades, microfinance has been a significant instrument for reducing vulnerability and enhancing the wellbeing of the poor. Microfinance researchers investigated the relationship between client risks and microfinance and found that risks might affect the quality of an MFI's portfolio (Rutherford 2000; Morduch 1999; Wright

1999). They argued that improving the efficiency of financial services might reduce client risks (supply side efficiency). Some of the researchers found that service provider's attempts to improve client's capability to manage risk could be a win-win strategy (demand supply matching) for both parties (Hassan 1999; Mosley 1999). They urged for a balance between financial provision and financial participation. Cohen and Sebstad (2003) investigated demand for microinsurance and its role in improving the coping capacity of households in three African countries, Tanzania, Kenya and Uganda. Their study identified that the financial service opportunities enabled the poor better manage the risks. Emphasizing the insurance role of microfinance the above studies failed to identify comparative advantages of microfinance components. While, microcredit has relative advantage in investment portfolio (promoting role), the microsavings and microinsurance are effective in risk management (protective role). Greater emphasis on promoting role and lesser importance to protecting role of microfinance may intensify the problem of financial inclusion gaps. Current research attempts to investigate financial inclusion gaps focusing on household coping strategies and external interventions, particularly financial intervention.

Microsavings vs microcredit: While microcredit has long been the traditional focus of microfinance, microsavings has recently emerged to the frontline. During 2000s, there had been a major policy shift in microfinance all over the world: from credit-driven to savings-led financial services. Previously, MFIs focused on microcredit delivery embedded with compulsory, locked-in savings instruments. Now, they provide more flexible voluntary savings services to clients. In compulsory savings system, service providers presumed that clients needed to learn financial discipline and savings habits (Robinson 1995). They wanted clients to deposit a certain amount as a conditional requirement for loans. The savings had no withdrawal rights and thus served as loan security. However, contemporary studies suggest that clients prefer flexible and open access savings schemes from these institutions (Wright 1999). In client-preferred voluntary savings system, service providers assume that poor people already have savings habits and institutions need to learn to how to provide appropriate savings facilities (Wright 2005). In an empirical study on savings behaviour in northeast India, Moulick et al (2008) found that poor people continue informal saving due to facing barriers from formal mechanism. Main obstacles, people mentioned, were distance, low outreach, and complex documentations.

Research evidence across the world indicate an increasing demand for microfinance and relative preference to savings services among the poor (Rutherford 2002; Cohen and Sebstad 2003; Wright 2005; Hirschland 2006). Using a randomized control trial in Kenya, Dupas and Robinson (2009) found that women with formal microsavings accounts were better able to combat health shocks without depleting business capital. Ashraf, et al (2006) found a positive impact of access to saving products on women's participation in household decision making in rural Philippines. Chen and Snodgrass (2001) also found positive impacts of savings on SEWA Bank's clients in urban India. The clients argue that savings are more beneficial to poor households facing shocks than credit. Tiwari (2013) shows that women in self-help groups (SHGs) in the Indian state of Bihar use microsavings as an instrument for coping with crises, setting up own businesses, gaining self-dignity and empowerment. However, none of the above studies exclusively pinpoints the comparative analyses in savings-led vs credit-driven microfinance. Financial service providers with credit-driven approaches have a general tendency to ignore people's demand for savings accumulation and over emphasize credit delivery. This may generate the problems of over-indebtedness, multiple borrowing, and finally borrowing gaps in financial inclusion. On the other hand, saving-led services face some regulatory barriers (due to lack of deposit insurance scheme and fear of MFI bankruptcy) that lead to savings and payments gaps in financial inclusion. This research is an attempt to study these financial inclusion gaps in rural livelihoods context.

Microfinance vs inclusive finance: Since the late 2000s, there has been another paradigm shift in rural finance: from discrete microfinance to inclusive finance (Choudhury 2010). Microfinance means provision of financial services to the poor and low-income people to support their micro and small enterprises and risk management. Discrete microfinance particularly focuses on poor women and excludes non-poor and male members of the community. In some cases, it excludes extreme poor and vulnerable groups. The main players in this field are Microfinance Institutions (MFIs) and NGOs providing financial services. An inclusive financial system, on the other hand, covers all clients including those excluded by conventional MFIs. Its financial services encompass all components of microfinance including asset transfers (government aid and grants). Service providers in inclusive finance comprises all agents involved in rural finance in addition to conventional MFIs and NGOs, such as the government, banks, credit union, and savings and credit cooperatives (Choudhury 2010). Fundamental transformation from microfinance to financial inclusion lies in the transition from a 'one size fits all' model of

service delivery to inclusive finance in response to the diverse demand of people (AusAID 2010). Inclusive finance follows a step by step approach to financial development of the clients: 1) assets grants and soft loans for the extreme poor, 2) microloans for the moderate poor, 3) microenterprise loans for microentrepreneurs, and finally 4) when graduated, SME loans from mainstream banks (BRAC 2011). The graduation model includes a savings and insurance package in each stage (BRAC 2012).

Financial inclusion: Various studies in the field of development and finance show that financial development with a regulated and supervised financial system fosters economic growth and reduces income inequality and poverty (CGAP 2012, World Bank 2008). Evidences from across the world show positive correlation between wider financial inclusion and economic growth (Levine 2005; Beck, et al 2008, Demirgüc-Kunt, et al 2008). On the flipside, many development thinkers contemplate financial exclusion as a major barrier to economic development. Without an inclusive financial system people usually drawdown assets or rely on informal finance to cope with crises and manage resources (Beck, et al 2008; Demirgüc-Kunt and Klapper, 2012). These can contribute to chronic poverty, severe vulnerability and persistent inequality that slow down economic growth on a wider scale. These studies investigate macro link between financial inclusion and economic growth and identify potential micro link between financial inclusion and vulnerability to poverty. Some of the studies focus on financial inclusion gaps. They argue that despite various initiatives for expanding financial services across the world, around 2.5 billion adults remain unbanked and most of them reside in developing countries. Urban-rural gap in financial inclusion exists in both advanced and developing countries although the gap in former group is narrower. Moreover, there are gender gaps in financial systems around the globe where women have less access to financial services compared to their counterpart (Demirgüc-Kunt and Klapper 2012). However, the existing literature on financial inclusion is prescriptive in nature and the room for its impact assessment is narrow as inclusive finance is a recent phenomenon.

1.4 Rationale and scope of the research

The study uses a mix of qualitative and quantitative methods to explain risk related vulnerabilities, household strategies and status of financial inclusion in northeast rural Bangladesh. In the literature, there is a volume of research across the globe in vulnerability and coping capacity of the poor. The majority of the research are either quantitative (survey-based) or qualitative (participatory) rather than a mixed approach

(Davis and Baulch 2010). Quantitative studies are an *etic* (top-down) approach to respondent's livelihoods using survey data and secondary sources. On the other hand, qualitative research illustrates clients' perceptions and preferences in livelihood opportunities through an *emic* (bottom up) approach. While both the techniques have their own advantages and disadvantages, the limitations could be minimized or at least triangulated (confirm or refute) by combining them (Kanbur 2003; Parker and Kozel 2005). Current study thus follows a mixed approach.

Most of the MFIs in developing countries focus solely on microcredit ignoring or paying less emphasis on other components of microfinance such as payments, savings and insurance. Some practitioners even consider microfinance and microcredit interchangeable (Chowdhury 2009). However, empirical evidence from across the world suggests that the impacts of microcredit on livelihoods of the poor are insignificant if not none (Banerjee, et al 2009; Karlan and Zinman 2009). Policymakers and practitioners in many countries now consider that too much attention to microcredit might result in financial inclusion gaps and thus they emphasise the role of other components of microfinance to reduce these gaps. Remittances through mobile finance and microsavings mobilization through MFIs lead this race while microinsurance initiatives are slow. Lister (2006) shows that savings creates a greater sense of material security and strengthens resilience and coping capacity in different vulnerable contexts. In an empirical study of financial behaviour in a Mexico City slum, Niño-Zarazua (2006) found that secure and flexible savings facilities helped strengthen a household's coping strategies against shocks and stresses. Philine Oft investigated resilience-building mechanism against climate related shocks facing the rural people in northern Peru. Her special focus was on the role of microfinance particularly microinsurance in building resilience against climate related shocks (Oft 2010). These evidences show the relative importance of the components of microfinance but they do not specifically point out the implications of financial inclusion on household capacity. This study plans to explore household strategies and financial intervention in rural livelihoods.

In Bangladesh, there is a high volume of research in the field of poverty and microcredit. Most studies found a positive association between poverty reduction and microcredit participation (Khandker 2005; Chowdhury 2009; Khandker, et al 2010; Razzaque 2010). The vast majority of them focused on the effectiveness of microfinance with particular emphasis on microcredit (Hussain 1998; Pitt and Khandker 2002, Datta 2004).

Investigation in the insurance role of other components of microfinance (not merely microcredit) against risks is almost non-existent. Azam and Imai (2009) measured vulnerability of the households in Bangladesh using HIES data. In policy recommendations, they emphasised on accumulating assets through microcredit without highlighting any role of microsavings or microinsurance in a poor person's effort to vulnerability reduction and livelihood security. There exist a few studies of microinsurance in Bangladesh. Using field experience and data, Ahsan (2010) explored potential affordability of the rural people and the insurer for microinsurance products against the risks of vulnerability. Examining the capacity of the market for health insurance in Bangladesh, Ahsan and Barua (2010) found that the majority of the households used self-insurance including exhaustion of savings or use of loans against the health shocks. The insurance market is very small in terms of outreach in rural areas of Bangladesh. Hamid, et al (2011) examined whether the addition of micro health insurance (MHI) to microcredit of Grameen bank had an impact on poverty reduction. As microinsurance is a relatively new instrument, this study could not provide any evidence on how MHI can reduce vulnerability of the poor. Likewise, many researchers in Bangladesh emphasise the significance of microfinance and point out the relative importance of its components but no specific studies emphasise on inclusive finance nor do they underscore the implications of financial inclusion on household strategies.

There is only a handful of published research on financial inclusion in Bangladesh. Rahman (2009) and Choudhury (2010) describe financial inclusion as a poverty reduction tool and highlight the role of Bangladesh Bank (the central bank) in expanding inclusive financial system. Islam and Mamun (2011) use financial data from Bangladesh Bank to provide demographic and geographic penetration of financial instruments to present an overall picture of financial inclusion in Bangladesh. Noman (2013) follows the Indian financial inclusion index prepared by Sarma (2010) to estimate a similar index for all 64 districts of Bangladesh. Nabi, et al (2012) analyse the overview of the market development of mobile financial services in Bangladesh. Most of the studies in financial inclusion used financial provision data (supply side data from service providers) to provide quantitative analyses. To the best of my knowledge, no studies used financial participation data (demand side data from service users) or qualitative methods to see the actual condition of financial inclusion in remote areas. Moreover, there is no evidence of research investigating financial inclusion and its link to household strategies in rural Bangladesh. In this context, this study is an exclusive attempt to identify the nature of

financial inclusion gaps and their impact on households' coping strategies. The study suggests qualitative insights into various financial inclusion 'gaps'. The insights will contribute to the existing knowledge base of financial inclusion, which is currently predominantly quantitative. In conceptual insight, the study highlights two interrelated approaches to financial inclusion: financial provision and financial participation. One is the market's capacity to provide and the other is client's capability to use financial services. Financial inclusion 'gaps' emerge from the operational distance between the two. It is a major policy challenge to minimise the gap.

1.5 Organization of the thesis

The study focuses on livelihood strategies including household's risk coping arrangements and external interventions in northeastern rural Bangladesh. It uses the sustainable livelihood approach as the analytical framework to study rural livelihoods. The research process starts with theoretical assumptions and models, employs the q-squared approach as an analytical tool to collect and analyse data and finally recommends some policies based on the findings. The thesis is organized as follows:

It contains eight chapters. After an introduction into aims, objectives and theoretical background of the research in chapter 1, chapter 2 provides conceptual framework and theoretical foundations to the current research context. Chapter 3 is devoted to research methodology including sampling design, a brief discussion of survey instruments and data collection process. A detailed description of the data and methods is available in appendix A. Chapter 4 discusses the Bangladesh scenario of livelihood dynamics including vulnerability, coping capacity and financial inclusion. Chapter 5 discusses livelihoods context of the two villages - *Ausha* and *Bhadeshwari*. Chapter 6 describes livelihood strategies of the rural people including coping capacity and resilience building through self-efforts and external supports. It diagnoses some intervention failures in both the financial and non-financial sector that may give rise to financial inclusion gap and institutional ineffectiveness resulting in the lower coping capacity and resilience. Chapter 7 uses qualitative survey data to illustrate the extent of financial inclusion in the villages. To conclude, chapter 8 summarises the research findings and presents policy recommendations for the development of financial instruments.

2. Conceptual and theoretical framework

This chapter illustrates the theoretical framework of the research focusing on rural livelihoods and financial inclusion. Definitions and concepts draw on contemporary literature on financial inclusion, sustainable livelihood, poverty and vulnerability. The conceptual framework aims at rural livelihoods study through the lens of sustainable livelihood approach.

2.1 Financial inclusion

2.1.1 Definition and concepts

A well-functioning financial system that ensures efficient allocation of funds to productive resources is vital for economic development. The system includes payments, savings, credit, insurance, and remittance services. Until recently, efficiency and stability of financial system has been a major policy focus, ignoring broader access to financial services. However, without an inclusive financial system people usually rely on informal finance to manage resources and combat crises. Informal finance such as borrowing from a moneylender is costly and exploitative as it forces people to drawdown assets in case of repayment failure (Beck, et al 2008; Demirgüc-Kunt and Klapper 2012). In extreme cases, moneylenders can seize assets of the debtor used as collateral for the loan. When savings and insurance facilities are inadequate, households can hardly manage their limited resources for future investment and emergency finance. Without an efficient payment system, remittance flow is costly, time consuming and exposed to fraud. These exclusion factors may contribute to chronic poverty and persistent inequality that slow down economic growth on a wider scale. Financial exclusion is thus a major barrier to development. In this context, scholars in development and finance advocate financial inclusion as a poverty reduction tool for low-income countries (Niño-Zarazua 2006; Helms 2006; Copestake 2007; Choudhury 2010).

Financial inclusion refers to cost effective access to a range of financial services such as credit, deposit, insurance, remittance and pension services provided for households and firms (United Nation 2006; CRISIL 2013). Appropriate financial services for day-to-day transactions, economic activities and risk management have four basic characteristics abbreviated by BASE: 1) Broad range of services, 2) Affordable even for low-income people, 3) Suitable to client's needs and 4) Easy access for all groups of people. There

are two aspects of financial inclusion: 1) *Financial provision* – a supply side concept of financial access from provider's point of view and 2) *Financial participation* – a demand side perception of financial access from service user's point of view. Financial provision refers to the capacity of the market to provide financial services to meet customers' satisfaction. Financial participation, on the other hand, refers to capability and willingness of the service users to receive the services without any frustration. Providers' financial capacity includes appropriate financial products to suit customer preferences, the right strategies for product delivery, and provision of financial education. Financial capability or willingness of the customer is determined by needs and preferences, financial literacy, access to financial advice and information, and management capacity (financial decision-making, skills and motivation to plan) of the clients. Any gap between financial provision and financial participation results in the inability, difficulty or reluctance of the clients to get access to financial services, which in turn causes financial exclusion (McKillop and Wilson 2007). A particular group of clients may find difficulty in getting access to financial services with terms and conditions not suitable for them. Clients may also become financially excluded if they willingly choose not to accept a particular product due to lack of appropriateness in their financial activities (Collard, et al 2003; Clark and Forter 2005; Atkinson, et al 2006).

People face exclusion from financial system for various reasons. These can be supply-side reasons triggering involuntary exclusion (or kept out) or demand-side reasons initiating voluntary exclusion (or opted out). Supply-side barriers including distance, cumbersome documentation, and higher transaction costs are due to reluctance or incapacity of the financial service providers. People desire financial services but access denied. Demand-side barriers, on the other hand, arise from the inability or unwillingness (or no need) of the service users mainly due to their low income, lack of awareness, and illiteracy (World Bank 2008). Putting together, financial exclusion has five broad categories (Kempson and Whyley 1999 and Kempson, et al 2000):

- *Conditional exclusion* occurs when clients fail to qualify certain conditions such as minimum deposit requirement, credit rating or identity requirements. Low-income and default risk people suffer from this exclusion.

- *Geographical exclusion* is because banks are too far from the clients or the nearest branch has been closed. Bank branches usually concentrate in urban areas and thus rural people are less likely to open a bank account.
- *Price exclusion* e.g. clients may refrain from taking loans or opening savings account due to high interest rates for credit or low interest rates for savings together with other charges levied. High transaction cost is also part of price exclusion.
- *Marketing exclusion* occurs when financial service providers do not target some customers due to low profitability. Large banks often focus on rich people and overlook financing poor people's ventures. Clients sometimes feel a lack of confidence when they do not receive financial advice and information from the providers due to poor marketing strategies.
- *Self-exclusion* is a kind of cultural or psychological barriers imposed by customers themselves such as refusal to deal with savings or credit because of a religious ban on interest earning or paying. Self-exclusion may result from lack of suitability e.g., some financial products may not meet the needs of low-income customers.

2.1.2 Measurement of financial inclusion

Like poverty and vulnerability, financial inclusion has qualitative and quantitative measurements. Quantitative techniques measure the extent of financial provision or access to instruments provided by financial institutions. Qualitative methods ask respondents about financial participation and effective uses of financial instruments.

Quantitative measurements: Status of financial inclusion can be measured in two dimensions: 1) outreach and 2) usage. Outreach measures the provision of financial services by 'geographical penetration' (bank branches or ATM per 1000 square kilometres) and 'demographic penetration' (bank branches or ATMs per 100 thousand people). Usage is the actual use of banking services or access to financial services (account, deposit or credit penetration i.e. number of accounts, or deposits or credit per 1000 people). Easier geographic access means more bank outlets per thousand square kilometres indicating smaller clients-bank distance. Higher demographic penetration means fewer clients served by each branch or ATM indicating easier access to financial services. Financial inclusion may also be judged by financial deepening in an economy through bank credit or deposits as percentage of Gross Domestic Product (GDP).

Qualitative measurements: One of the major drawbacks of the quantitative approach is that it depends on financial data provided by the service providers that lack information on client's choice. It also ignores an important component of financial inclusion that is client's financial capability including financial awareness and literacy. Qualitative measurement of financial inclusion involves participant's own expression of financial participation including the need for financial services and effective uses of financial instruments in their livelihoods. Qualitative measures focus on the demand side of financial inclusion and thus use participatory techniques such as PRA and FGD. In PRA, *mobility map* and *Venn diagram* exercises identify the importance and effectiveness of financial institutions. *Preference ranking* exercises may evaluate the needs and preference of the services users. *Direct observation* of the client's financial behaviour investigates financial capability of the clients. Finally, client's experience and perceptions of financial services may be documented through focus group discussions.

2.2 Financial inclusion and vulnerability reduction

2.2.1 Exclusion-crises interaction

In the arena of vulnerability to poverty, a household's coping capacity largely depends on the role of financial services linking its resource profile to vulnerability context (Chen and Dunn 1996; Sebstad and Cohen 2000; McGregor 2007; Niño-Zarazua and Copestake 2009). People need financial services in livelihood strategies including earning activities and crises management. They use financial products to build up investment and strengthen coping strategies. In contrast, financial exclusion may further deepen financial crisis and heap on a household's vulnerability context. Vulnerability to crises together with financial exclusion leads households towards financial insecurity and increased vulnerability to poverty (figure 2.1).

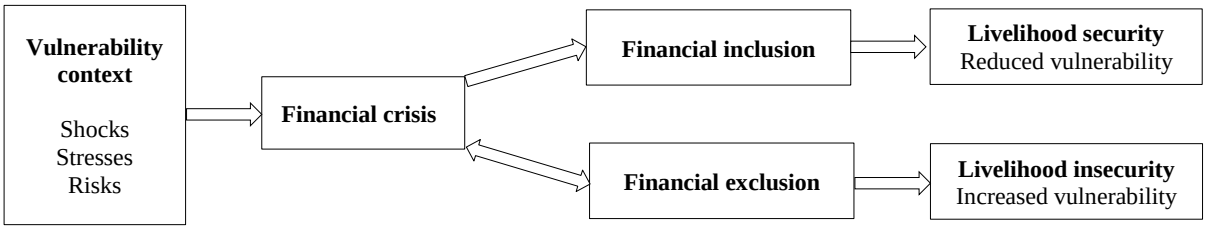


Figure 2.1 Relations between vulnerability and financial access

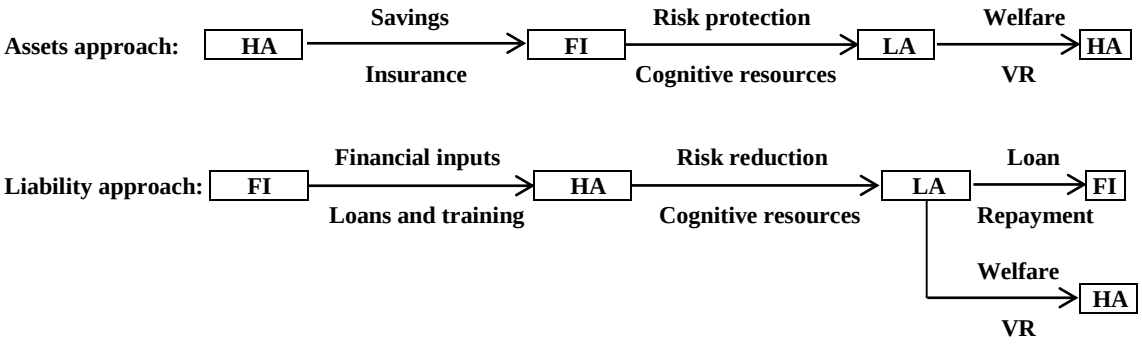
There are several reasons why financial exclusion is a vulnerability concern. *Firstly*, exclusion from loanable fund pushes people to take high-interest credit from informal sources. Consequently, they fall into depression, anxiety and insecurity as debt accumulates leads to the possibility that their earnings are drained off or the creditor seize the debtor's assets (Balmer, 2006; Pleasence, et al 2007). *Secondly*, when households face unexpected crises such as injury or death, lack of savings and insurance facilities makes them more vulnerable. *Thirdly*, households without a bank account face more transaction costs in paying bills and receiving wages or remittances than those with bank accounts (Strelitz and Kober 2007). *Finally*, vulnerability to financial exclusion reinforces social exclusion as it isolates households from mainstream financial activities and social network (Marshall 2004 and Mitton 2008).

2.2.2 Financial inclusion and coping capacity

On the supply side, financial inclusion means expanding financial services to the poor by increasing the market's capacity, lowering transaction costs, and providing financial education to ensure better access. Financial education includes financial literacy and training on how to manage financial transactions. On the demand side, financial inclusion refers to a client's willingness and ability to use financial services. Diversified uses of financial services result from social interactions and institutional training. In short, financial inclusion is the combination of better access and effective use of financial services through socio-cultural changes. Such changes enable households to manage money, build resource portfolios, and reduce vulnerability to poverty i.e. to gain economic empowerment through financial capabilities. It also contributes to psychological and cognitive empowerment through acquisition of self-confidence, entrepreneurial knowledge, and social networks. Robust empowerment (combining economic, psychological and cognitive factors) builds a strong coping capacity against shocks and hazards (Chua, et al 1999; Niño-Zarazua 2006).

2.2.3 Financial transmission channel

Increasing the outreach and scale of financial institutions, and developing financial culture through market literacy, socialisation and experiential learning are necessary change instruments for better access and effective use of financial services. Such a process follows financial transmission channels (figure 2.2) to deliver financial services and develop cognitive resources to reduce vulnerability and increase livelihood security.



Note: HA = Household assets, FI = Financial inclusion, LA = Livelihood achievements, and VR = Vulnerability reduction.

Figure 2.2 Financial transmission channel

Transmission channels draw on the participation aspect of financial inclusion in which savings and insurance instruments are assets, and loans are liabilities for the clients. A combination of the two channels forms virtuous triangles of financial inclusion against 'vicious circle of poverty' and vulnerability. In 'financial inclusion – vulnerability reduction (FI-VR) triangles' (figure 2.3), the anti-clockwise outer triangle represents an assets approach to financial inclusion that starts from household assets with savings and insurance contributions to financial inclusion that in turn provides risk protection and cognitive resources to livelihood achievements that ultimately reduce vulnerability of households. The clockwise inner triangle represents the liability approach to financial inclusion that provides loans and other financial inputs to contribute in risk protection and cognitive resources to the household, thereby ensuring livelihood security and reduced vulnerability. Financial institutions are repaid the loans to finish the triangle.

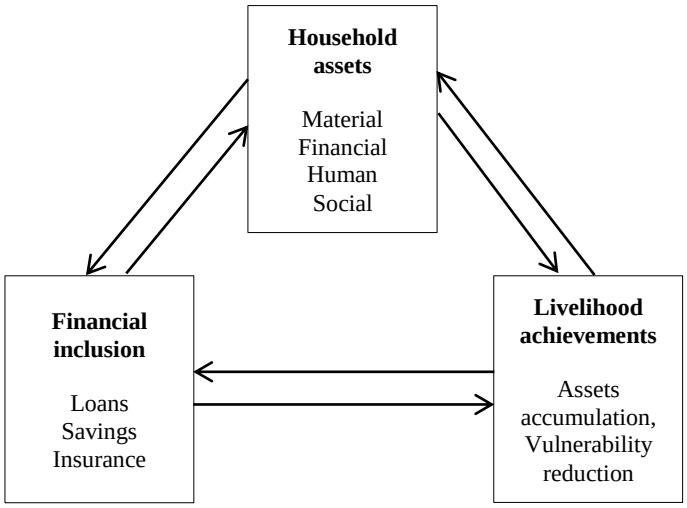


Figure 2.3 Financial inclusion - vulnerability reduction (FI-VR) triangles

2.2.4 FI-VR link

In FI-VR triangle, the bidirectional link between household assets and financial inclusion is straightforward: expanding savings mobilization and loan disbursement. Bidirectional exchange between financial inclusion and livelihood achievement occurs in regular repayment and contribution to assets accumulation and vulnerability reduction through cognitive resources and risk protection. Finally, intra-household link between resource profile and livelihood outcome ensures wellbeing and vulnerability reduction through risk coping strategies and cognitive resource accumulation. Both households and financial institutions contribute to behavioural and cognitive resource accumulation through socialised and experimental learning (Niño-Zarazua and Copestake 2009) and social intermediation (Chua, et al 1999). Interactions in financial inclusion – vulnerability reduction triangles generate two important links:

Link 1*: Access to and uses of financial services reduce vulnerability and strengthen coping capacity of the individual or household.*

Financial institutions help the individual or a household reduce risks by managing cash flow to the investment portfolio and income diversification. Financial services also protect individuals or households from shocks by providing access to savings or emergency loans and building assets to buffer crises (Chua, et al 1999).

Link 2*: Financial inclusion combined with financial and market literacy reduces vulnerability and contributes to empowerment of the poor.*

Financial inclusion is not merely financial provision or better access to financial services; it also refers to financial participation or efficient use of the services. Financial and market literacy add cognitive resources to household's assets through developing the ability to plan, dealing with multiple loans and savings, and managing business. Cognitive resources emanate from financial training by the service providers as well as client's experience with various financial instruments and social interaction. Cognitive empowerment together with economic empowerment build robust empowerment with attributes including increased self-esteem, leadership skills, bargaining power, control over assets, and access to wider social institutions.

Empirical evidence: Chua, et al (1999) conducted an in-depth study on female clients of the Centre for Agriculture and Rural Development (CARD) in the Bay Laguna,

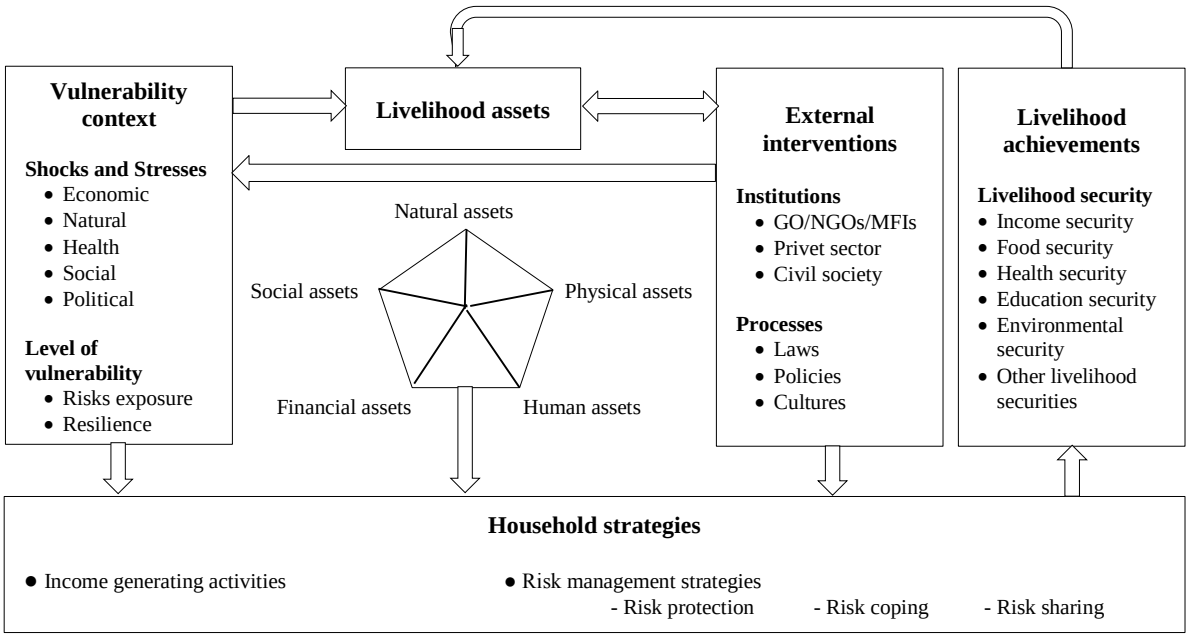
Philippines to investigate the context of risk, vulnerability and the role financial services. Using evidence from FGDs and in-depth interviews with CARD members and field staff the authors concluded that financial services had a positive impact on reducing vulnerability, and that access to cash flow had a significant contribution to people's capacity to cope with shocks. Access to CARD financial services improved money management, savings mobilisation and assets accumulation, which in turn raised the financial capability of the clients. The authors also investigated the role of CARD's social intermediation in reducing vulnerability and risk. In this process, CARD members undertook continuous training on various issues like group building, project management and enterprise development. Social intermediation aimed at raising awareness, cooperation, leadership, decision-making, and entrepreneurial ability. The whole process enhanced psychological and cognitive empowerment in addition to the economic empowerment through financial services. Acquired empowerment contributed to reduced vulnerability, significant improvements in wellbeing together with self-confidence and ability to deal with risks. CARD participants were now more vocal, interactive, and proactive in individual and group initiatives (Chua, et al 1999).

In a similar study on Chalco Valley - a low-income area of Mexico City, Niño-Zarazua and Copestake (2009) investigated the causal link between household resource profile and vulnerability reduction via access to financial services. Using logistic regression and in-depth interviews, they found that access to financial services together with their effective use through experimental learning built a financial culture in the community. Such financial culture begins at an individual level through financial literacy training and develops on a community level through social interactions (Niño-Zarazua 2006). Building financial culture is a process similar to 'social intermediation' in Chua, et al (1999). This process creates a bi-directional link between household and financial institutions exchanging financial instruments with cognitive resource to the household's assets. In this process, the household gains financial capability (ability to engage in profitable business, project planning, and better cash management) and develops coping capacity against vulnerability to shocks. Households and individuals also gain psychological empowerment in the form of self-confidence, control over resources, bargaining power, social networking, and leadership skills.

2.3 Livelihood approach

In this research, I used Sustainable Livelihood Approach (SLA) as an analytical framework to understand complex livelihoods of the rural poor. Sustainable Livelihood Approach, proposed by a group of development thinkers at Sussex, is a framework that explains how households pursue sustained livelihoods. It is a comprehensive tool to explain livelihood dynamics in a systematic way. In SLA, a household's livelihood comprises five major components: 1ive1ihood assets, vulnerability context, household strategies, external interventions and 1ive1ihood achievements (Figure 2.4). Livelihood is sustainable when a household builds resilience to shocks and maintains its assets at a reasonable level now and in the future (Chambers and Conway (1992).

Figure 2.4: Sustainable livelihood framework



Adapted from DFID (1999)

Although, the notion of human capability or the ability to cope with risks was implicit in SLA, the concept of sustainable human security has been trivial until the report of Ogata-Sen Commission on Human Security (Ogata-Sen 2003). The commission redefines human security as freedom to 'act or attain' livelihood security instead of freedom from certain deprivations. To reconcile human security and the livelihood approach, Bohle (2007) suggests an agency-based approach to reducing vulnerability through human capabilities. In his *actor-oriented* approach, the vulnerable are *actors*, not mere victims. They take various strategic *actions* to make a living in risky environments with some

specific *agendas* within the *arenas* of conflicting socio-political environment. However, sustainability largely depends on both *actions* (appropriate household strategies) and *agendas* (struggle with strategic barriers including intervention failure). This research focuses on household strategies and intervention failure (more specifically financial inclusion failure).

SLA has some built-in properties: *firstly,* it is 'people-centric' as its policy formulation is grounded in people's understanding of their own struggle, priorities for institutional intervention and process to achieve livelihood securities. *Secondly*, it is 'holistic' in that it combines multiple actors and strategies to achieve multiple outcomes. *Thirdly*, it emphasizes on building resilience to crises rather than measuring basic needs to combat them. *Fourthly*, it is a 'multidisciplinary' approach including environmental, economic, social and institutional sustainability. SLA has some limitations identified by Scoones (2009). 1) Its link to the processes of globalization is weak. 2) It does not provide much attention to political engagement and livelihood governance. 3) It emphasizes short-term coping strategies and ignores adaptation to long-term variations such as climate change and finally, 4) it fails to capture the long-term shift in rural economies and agrarian change (Scoones 2009). He suggests four interlinked measures to face those contemporary challenges: knowledge, scale, politics and dynamics. Livelihood *knowledge* is important for enhancing long-term adaptive capability against climate change - a key ingredient for livelihood *dynamics*. *Scaling* up is necessary for stronger micro-macro linkage to address global issues such as financial crisis, migration, and remittance inflow. Decentralization of power *politics* and governance in development is crucial for evading intervention failure (Scoones 2009). Following Scoones' critical concern, this study uses SLA to highlight related issues such as financial exclusion, intervention failure and livelihood diversification in the Bangladesh context. The next few sections elaborate five components of the sustainable livelihood framework. This will help organising the empirical findings (in Chapter four to seven) in line with internal strategies (e.g. coping capacity) and external interventions (e.g. financial inclusion).

2.3.1 Livelihood assets

Livelihood assets represent a household's stock of resources that generate the flow of income to meet basic needs and manage crises. A wider assets base generally creates greater livelihood opportunities and enhanced coping capacities. The assets pentagon in the SLA framework consists of five major household assets: human, physical, natural,

social and financial. *Human assets*, commonly known as human capital, refer to the effective use of resources that depends on access to education, training and other basic needs such as food, clothing, shelter and health. *Physical assets* include productive assets and physical infrastructure required to pursue a livelihood. Households can possess assets such as land, machineries, and livestock for agricultural and non-agricultural production. Physical infrastructure includes common property resources such as communication network, irrigation and other facilities. Other physical assets include moveable household items such as furniture, jewellery, and electronic equipment. *Natural assets* include ecological resources that people usually access to enhance their livelihood. Marshland, forest, grazing land, and wildlife are examples of natural assets. Household's social connections and mutual actions generate *social assets* in the form of community support and collective benefits. *Financial assets* are resources available to households for financial transactions such as consumption spending and investment. Financial assets include loans and savings, insurance, remittances, pensions and cash transfers from financial institutions and government welfare funds. Assets can be classified according to their role in household strategies (Table 2.1). *Productive assets* increase a household's capacity to earn and spend over time. *Protective assets* have a higher degree of liquidity and store value and thus they are readily convertible to cash in time of emergency. These assets enhance a household's coping capacity and resilience to vulnerabilities.

Table 2.1 Productive and protective assets

Types of assets	Examples
Productive assets	• Land • Machinery and tools • Livestock • Rental properties
Protective assets	• Cash on hand or in piggy bank • Savings in formal (Banks), semi-formal (MFIs), or informal institutions (RoSCAs, ASCAs) • Assets with store value (jewellery, livestock, tree, land) • Household equipment (electronic goods, furniture,) • Social assets

2.3.2 Vulnerability context

How efficiently a household utilizes its resources depends on how well it acts upon vulnerability context. Vulnerability refers to symptom of poverty indicating defencelessness, insecurity and exposure to risks. According to Robert Chambers, *"vulnerability has [thus] two sides: an external side of risks, shocks, and stress to which*

an individual or household is subject; and an internal side which is defencelessness, meaning a lack of means to cope without damaging loss" (Chambers (1989, p 1). Risks and shocks are unforeseen events that affect livelihood security and destabilize welfare. Stresses are long-term trends or seasonality that recurrently put pressure on a household's resource base. A household can face shocks and stresses from a variety of sources: economic, natural, health, political and social.

Table 2.2 Types of shocks and stresses

Source	Shocks	Stresses
Economic - Trends and seasonality in the economy	Job cut Unanticipated inflation Crop failure	Recession Chronic inflation Poor infrastructure
Natural - Adverse weather - Natural disaster	Heavy or no rainfall Flood or drought Earthquake or mudslide	Natural resource degradation Climate change Eco-imbalance
Health - Household health insecurity	Injury or illness Sudden death Epidemic disease	Chronic illness Malnutrition Insufficient health facilities
Political - Adverse political situation	Violence and strikes Armed conflict Controversial election	Political instability Weak legal system Adverse law and order
Social - Sanction imposed by social network - Social crime	Breakdown of social networks Land dispute, quarrel with neighbours Dispute with moneylender	Family violence, abuse Narcotic addiction

Adapted from LIFT (2011)

A household's exposure, resilience and sensitivity to shocks determine the level of its vulnerability to risks. *Exposure* is the likelihood of shocks and the magnitude of their impacts on a household. *Resilience* refers to the capacity of the household to recover from the adverse impact of shocks and stresses. Resilient households tend to cope with crises, absorb stresses and revert quickly to their previous state without serious repercussions. *Sensitivity* is the household's state of withstanding the impact of shocks. A household with more sensitivity is likely to have a greater impact on its livelihood. A resilience-sensitivity matrix (Table 2.3) explains a household's degree of vulnerability. Highly sensitive households with low resilience are highly vulnerable to risks whereas low sensitivity but high resilience makes them robust and non-vulnerable. Households are moderately vulnerable when both indicators are equally extreme (Davies 1996). Oshaug (1985) categorised robust households as 'enduring' and having the capacity to maintain livelihood security throughout the year. She considered highly vulnerable households as 'fragile' that are always insecure against any shocks. Between the two extremes, there are 'resilient' households that suffer shocks but recover quickly.

Table 2.3 Resilience-sensitivity matrix

Indicators		Resilience	
		High	Low
Sensitivity	High	Vulnerable	Highly vulnerable
	Low	Robust	Vulnerable

Source: Davies (1996)

2.3.3 Household strategies

Household strategies include income-generating activities and risk management for livelihood securities. Income-generating activities in rural areas are generally wage and self-employment. Wage employment includes day labour, migratory and seasonal labour in the formal or informal sector. Self-employment has five categories: agriculture, agro processing, trading, small-scale manufacturing, and services. The choice of livelihood activities depends on gender, age, health status, geographic location and the socioeconomic and political environment. A typical rural household might engage in crop production, seasonal day labouring, retailing fruits and vegetables to the local market, small trading and migrating to a large city or abroad for wage earning.

Risk management strategies include strategies to cope with or prevent risks (Chen and Dunn 1996) and share risks with others (Fafchamps 1999). While 'coping' refers to temporary adjustments in household activities to combat shocks and stresses, 'adaptation' denotes long-term adjustments. *Risk coping* strategies are *ex post* measures to reduce the impact of risks such as reducing consumption expenditure, borrowing from formal or informal sources, and drawing down assets. *Risk protection* strategies are *ex ante* measures to reduce the probability of future risks. These include choosing low-risk – low-income activities, diversifying household employment, and accumulating protective assets. Low-risk – low-income activities may contribute less to household's endowment but help reducing the risks of asset failure. Diversified employment helps household income smoothing particularly during seasonal unemployment. Protective assets accumulation is an insurance against future loss. Households mobilize savings and accumulate store value assets to liquidate when emergences arise. In *risk sharing*, households pool resources to share risks with internal or external agents. This includes family formation, patron-client relationship, sharecropping, and social insurance.

A household's coping capacity depends on its action to recover losses from shocks using one of the following strategies: non-erosive, erosive and damaging (Donahue 2000). 'Non-erosive' strategies involve liquidation of protective assets without affecting the long-term productive capacity of the household. When the effects of shocks continue, the household employs increasingly desperate strategies. In 'erosive' strategies, households sell or exchange productive assets to protect from losses and consequently undermine its productive capacity. Finally, the household becomes more desperate to apply asset depleting and 'damaging' strategies when only few or no coping tools are left. At this stage, the household condition is such that there is no alternative to destitution. Households using 'non-erosive' strategies are strong enough to withstand stresses and thus least vulnerable or non-vulnerable. 'Erosive' households are weaker and less vulnerable while 'damaging' households are the weakest and thus highly vulnerable to poverty.

Table 2.4 Risk management strategies

Strategies	Actions
Non-erosive: Disposal of protective assets	Reducing quality of food consumption Liquidating savings Exchanging or pawn store value assets e.g. jewellery, land Borrowing from friends and family at zero rate Taking low paid wage labour or migrate to find job.
Erosive: Disposal of productive assets	Reducing quantity or quality of food consumption Selling of machinery, livestock and other productive assets Borrowing from formal sources Reducing quantity or quality of crop production Reducing spending in investment goods
Damaging: Assets depletion and destitution	Fasting for lack of food (Reducing both quantity and quality) Borrowing at usurious rate Selling land Begging for charity Selling home and migrating as homeless

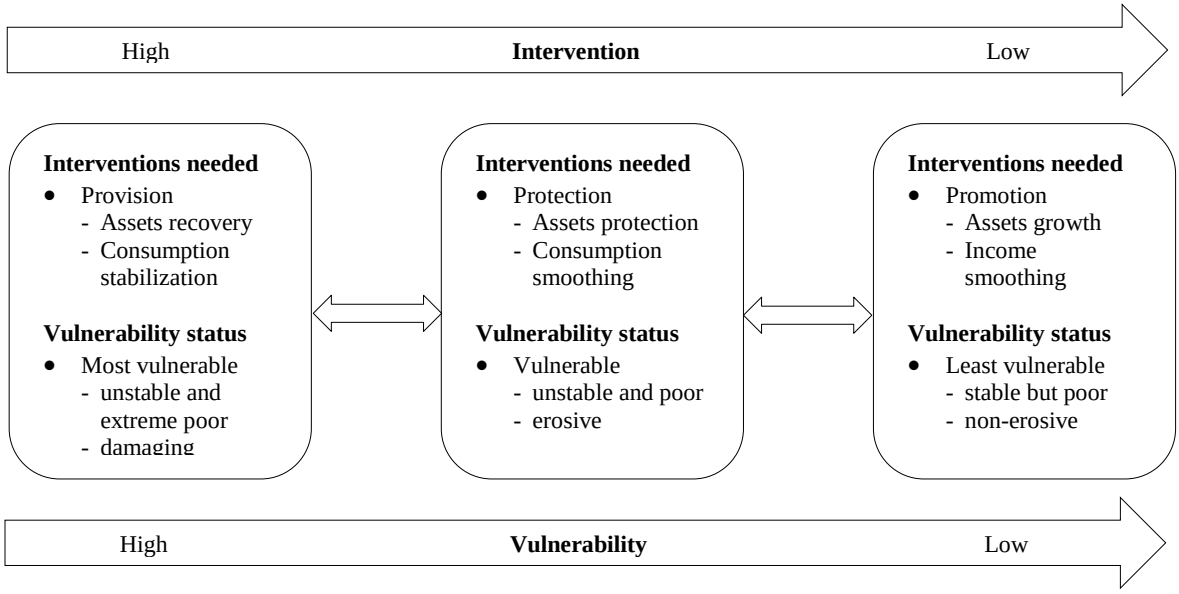
Adapted from Donahue (2000)

2.3.4 External interventions

In livelihood strategies, households apply increasingly desperate tools when shocks and stresses are getting worse. In the event of persistent shocks households move on vulnerability pathway from less vulnerable to moderate and then severely vulnerable depending on the degree of asset depletion (non-erosive, erosive and damaging). Reversibility on the vulnerability pathway towards normal state is critical as it depends on resilience of the households. Non-erosive households are normally reversible while 'damaging' households are almost non-reversible unless external intervention is

provided. External intervention comprises institutional structures including government and NGOs/MFIs and processes including law and culture. In the livelihood context, interventions follows a pathway to complement household strategies to revert to original state during or after the shock pass away. The pathway includes three forms of interventions: provision, protection and promotion. 1) *Livelihood provision* is assets transfer to destitute households to restore the damaged coping capacity caused by depletion of both protective and productive assets. The intervention package includes direct provision of cash, food and other essential needs. 2) *Livelihood Protection* helps by stabilizing the coping capacity and building protective assets. Erosive households are potential clients of these interventions. Protective assets confine a household from depleting productive assets used for combating risks. 3) *Livelihood Promotion* is designed for non-erosive, reversible households that seek to increase income by raising productive capacity. This effort can widen a household's assets base and strengthen its capacity to reduce vulnerability.

Figure 2.5: Intervention and vulnerability pathway



Adapted from LIFT (2011)

Interventions and vulnerability pathways together build a livelihood pathway towards increased income and reduced vulnerability. A household's progression depends on its location on the pathways (i.e. degree of vulnerability), strength of the household (i.e. assets base and coping capacity) and intervention inputs. Six key intervention inputs may exist on the livelihood pathway: 1) Assets recovery and 2) consumption stabilization for

provision of support to the most vulnerable households, 3) Assets safeguarding and 4) consumption smoothing for moderately vulnerable households that need protective supports and 5) Assets growth and 6) income smoothing for least vulnerable households, which need promotion supports. While intervention process on the livelihood pathway is sequential, a household's movement along the pathways is not necessarily sequential. A household can start at any point and move back and forth to materialize strategic and external support before achieving a desired livelihood security.

Table 2.5 External intervention and vulnerability reduction inputs

Interventions	Actions
Livelihood provision - Assets recovery - Consumption stabilization	Conditional or unconditional transfer (cash or food), charity, and other safety net (provided by GO, NGOs, MFIs).
Livelihood protection - Assets protection - Consumption smoothing	Access to microfinance (savings, credit and insurance), social networking, income based safety net (food for work or education), and legal protection
Livelihood promotion - Assets growth - Income stabilization	Savings and loan for productive investment, business/social networking, microenterprise development (low risk, low return), small and medium enterprise (SME) development (high risk, high return)

Adapted from LIFT (2011)

2.3.5 Livelihood achievements

The SLA framework connects inputs (livelihood assets) with outputs (household strategies and external interventions) to achieve outcomes (wellbeing and sustainable livelihoods). Livelihood achievements include improved wellbeing and capabilities, reduced poverty and vulnerability, and protected human security. Sustainability of livelihoods largely depends on the coping capacity, adaptation and resilience of the households against adverse shocks. Human security in the form of food and health security and protection from environmental degradation and climate change are a crucial part of input-output-outcome elements of the livelihoods framework.

2.4 Poverty and vulnerability

World Bank (2000) defines poverty in a very short and evocative sentence: "poverty is pronounced deprivation in well-being". However, the meaning of 'well-being' carries a comprehensive illustration. Among many approaches to wellbeing, the broadest one is Sen's capability approach which considers 'capability to function in society' as a major source of wellbeing (Sen, 1985). Poverty arises due to lack capabilities resulting from

inadequate income, poor health, lack of education, absence of human rights, lack of voice etc. In short, poverty is a functionings failure due to capability deprivations. The welfare status of the household is conventionally estimated using income or consumption data from household survey. However, household welfare depends not only on its income or consumption profile, but also on other determinants including the shocks and stresses. Who are poor today may not be so tomorrow and some non-poor today may fall below the poverty line in the future due to unexpected shocks such as illness or death of the main earners in the family. Poverty measured at a particular point in time usually does not take into full account the welfare prospects of households, as it often ignores associated risks. This leads to the idea of 'vulnerability to poverty' in the field of economics and development (Zheng and Wan 2008).

A household's vulnerability to poverty is defined in various ways. Kühl (2003), for example, defines a household to be vulnerable when its welfare falls below a socially accepted level after facing significant shocks. Pritchett, Suryahadi and Sumarto (2000) and Mansuri and Healy (2001) describe vulnerability to poverty as the probability that a household will remain in poverty for at least one episode in a short period. Similarly, Chaudhuri, Jalan and Suryahadi (2002) define vulnerability to poverty at time *t* as the probability that a household becomes or remains poor at time t+1. The key difference between poverty and vulnerability to poverty is that the former is a static concept and the latter is a forward-looking approach to poverty that includes unobserved future risks (Alwang, Siegel and Jørgensen 2001).

2.4.1 Measurement of poverty

Quantitative method: In his seminal paper on poverty, Sen (1976) identified two issues in quantitative poverty measurement: *identification* of the poor and *aggregation*. The *identification* takes consumption or income as a proxy for household wellbeing to construct a poverty line to identify who is poor and who is not. The poverty line (z) is a threshold level of consumption or income needed for a household to avoid poverty (Haughton and Khandker, 2009). A person or household is poor if $y < z$, and non-poor if $y \geq z$ where, y is the level of income or expenditure. The *aggregation* indicates how poor the society is using indices such as head count ratio i.e. fraction of population who are poor. A number of aggregate measures are available in the literature of which three are prominent: headcount ratio, poverty gap ratio and squared poverty gap. Foster, Greer and

Thorbecke (1984) proposed a class of poverty measures $P_\alpha = (1/N)\sum_{i=1}^{n}(g_i^*)^\alpha$, popularly known as Foster-Greer-Thorbecke (FGT) class. Here $g_i^* = (z - y_i^*) / z$ is the normalized shortfall of i_{th} individual from censored distribution y*. For example, if y = (**8**, **5**, 12, **7**), and z = 10, then y* = (**8, 5, 10, 7**), $g_i^* = (0.2, 0.5, 0, 0.3)$. The parameter $\alpha \geq 0$ indicates the sensitivity of the poverty. For $\alpha = 0$, 1 and 2, P_α takes the form of head count ratio, poverty gap ratio and poverty severity index respectively. *Head count ratio* or the fraction of poor N_p in total population, N. i.e. head count ratio $P_0 = N_p/N$. The *poverty gap ratio* $P_1 = (1/N) \sum_{i=1}^{n} g_i^*$ is the average income or expenditure shortfall from the poverty line normalized by censored distribution y*. This index measures the depth of poverty but fails to capture severity and inequality. To incorporate severity and inequality into poverty measure, Foster, Greer and Thorbecke (1984) introduce *squared poverty gap index* or poverty severity index, $P_2 = (1/N)\sum_{i=1}^{n}(g_i^*)^2$. The difference between the poverty gap and squared poverty gap is that the former is a simple average of poverty gap as a proportion of the poverty line whereas the latter is weighted average of the same in which weights are corresponding proportionate poverty gaps. Hence, more weight is given to those who fall well below the line.

The major weakness of the identification and aggregation of poverty is the assumption of income or expenditure as sole indicator of wellbeing. In reality, wellbeing depends on multiple non-income variables such as clothing, shelter, literacy, and life expectancy. Hence, poverty is multidimensional and it is not sensible to look at a multidimensional object through unidimensional lens. The multidimensional approach identifies poor as those who fall short of a composite threshold of multiple dimension of wellbeing (health, education, standard of living). During the last decade, there have been significant contributions to multidimensional measurement of poverty inc1udng Tsui (2002), Atkinson (2003), Bourguignon and Chakravarty (2003), Chakravarty and Silber (2008), Alkire and Foster 2011).

Qualitative method: Unidimensional or multidimensional measurement of poverty depends heavily on household survey data that usually miss an important qualitative component i.e. the voice of the poor (World Bank 2000). Qualitative technique such as participatory poverty assessment (PPA) may be useful in documenting people's own descriptions of poverty (World Bank 1999). A qualitative measure of poverty is based on people's perception of (a) the minimum standard and needs for a household (subjective poverty line), and (b) position of households in poverty ranking in the community. The

former requires people to determine the minimum level of basic needs necessary for a family of two adults and two children to survive and function well. This would provide reference line for identification of poor households. The latter uses wealth-ranking exercises to count the number of households that are extreme poor, poor and non-poor relative to the reference lines. Subjective or self-reported measures of poverty have many advantages over the objective measures. The choice of poverty line remains to the respondents who know about their own living condition better than the researchers who are outsiders. Such a process is absent in objective measures based on household survey data. Qualitative measures have limitations too. Self-reported poverty measure may suffer from biasedness towards self-targeting especially in case of government assets transfers. Non-poor may convince the participants to include them in the poverty group so that they benefit from the transfer. However, qualitative and quantitative measures can be complementary rather than substitutes. One can compare the outcomes in qualitative and quantitative measures of wellbeing or combine them in 'q-squared approach' to synthesize or cross validate (Pradhan and Ravallion 2000).

2.4.2 Measurement of vulnerability

Poverty is an *ex post* measure, thus there a possibility of identification problem as it excludes those non-poor who may face adverse shocks and become poor tomorrow. It also has selectivity bias towards the transitory poor who may actually become non-poor in future (Zhang and Wan 2008). Thus, it is a better option to measure the probability of being poor *ex ante* i.e. vulnerability to poverty without worrying too much about who is currently poor and who is not. The poverty profile may be effective for addressing the existing poor but the vulnerability profile is useful for both existing and future poor. Like poverty, vulnerability has two methods of measurement: 1) quantitative and 2) qualitative.

Quantitative measurements: In quantitative method, there are two techniques common in vulnerability estimation: 1) Bootstrap and 2) Parametric regression. In the first method, the distribution of future income or consumption is obtained by calibrating on observed characteristic and past income fluctuations of similar households using the bootstrap regression technique. Schreiner (2013) applies this method on household survey data to construct the Poverty Index (PI) for many developing countries including Bangladesh. Kamanou and Morduch (2002) and Kühl (2003) use this method to measure the vulnerability of households. The second method uses a statistical model to predict future

income or consumption and estimate the parameters of the regression function based on available information (Chaudhuri, Jalan and Suryahadi, 2002; Christiaensen and Subbarao 2005; Zhang and Wan 2008; Mansuri and Healy (2001). Following model is a simplified version of Chaudhuri, Jalan and Suryahadi (2002):

Assuming that poverty line z is calculated on the basis of by the minimum consumption requirement from a certain bundle of goods and services, vulnerability of a household h, at time t is defined as the probability that the household will fall or remain below the line at time t +1. Hence, $V_{ht} = Pr (C_{h, t+1} \leq z)$, where, $C_{h, t+1}$ is per-capita household consumption at time t+1. As an *ex ante* measure, vulnerability at time t is defined in terms of consumption at time t+1 whereas, poverty is based on consumption at time t. Household's consumption depends on a number of factors: wealth, current income, expected future income and its ability deal with various shocks. These in turn depend on a set of household characteristics and the socioeconomic environment. $C_{ht} = C (X_h, \beta_t, \alpha_h, e_{ht})$, where, X_h represents a bundle of household characteristics including household size, education and employment of the household head, etc., β_t is a vector of parameters describing the state of the economy at time t, α_h is an unobserved time-invariant household-level effect and e_{ht} represent any idiosyncratic shocks. Combining the above two equations we get the vulnerability level of a household as: $V_{ht} = Pr (C_{h, t+1} = C (X_h, \beta_{t+1}, \alpha_h, e_{h, t+1}) \leq z \mid X_h, \beta_t, \alpha_h, e_{ht})$. The probability that a household is poor depends on the expected (i.e. mean) consumption and its volatility (i.e. variance). One may use ordinary least squares (OLS) method to estimate both mean ($\hat{\beta}$) and variance ($\hat{\sigma}$, standard deviation of e_h) of its consumption. These estimates are used to derive the probability that a household will be poor (for estimation process, see Chaudhuri 2000; Chaudhuri, Jalan and Suryahadi 2002).

As with poverty line as a benchmark, the degree vulnerability may be measured with arbitrarily chosen probability thresholds such as 0.25 or 0.50 within the probability range of $0 \leq Pr \leq 1$. There are two evidences of vulnerability threshold in the literature. The first one is the relative vulnerability threshold in relation to observed poverty rate in a population. As the poverty rate represents the mean vulnerability level in a population, anyone whose vulnerability level lies above the threshold faces a higher risk of poverty than the average risk in the population and thus considered vulnerable. For example, if the poverty head count is 35 percent or 0.35 and the likelihood of a household falling below the line is more than 0.35, then the household is vulnerable (Rajadel, 2002). A

more stringent threshold is 0.50. When a households' vulnerability level exceeds 0.50, it has a greater likelihood to fall into poverty than to end up non-poor and thus the household can be considered highly vulnerable (Kühl 2003; Pritchett, Suryahadi and Sumarto 2000; Chaudhuri, Jalan and Suryahadi 2002).

The vulnerability measurement in the above model has some limitations. *Firstly*, it considers vulnerability as exposure to poverty rather than welfare shocks. It may include the currently poor with high probability to remain poor even if they do not face any adverse welfare shocks and exclude any non-poor who faces large shocks but are affluent enough to remain non-poor. *Secondly*, as a forward-looking or *ex ante* measure, vulnerability is unobservable and thus one has to make inference about its determinants in a model with high predictability and precisions. This requires panel data (combination of longitudinal and cross-section data) which is rare especially in developing countries. To overcome this, the above model relies on cross-sectional survey data that cannot capture large covariant shocks such as economic crisis. *Thirdly*, the model attempts to measure ex ante exposure to risk i.e. vulnerability by predicting available data on ex post effects of shocks i.e. income loss or consumption shortfall leading to poverty. This may give misleading results if an inappropriate statistical model is chosen. To reconcile, Cafiero and Vakis (2006) propose an 'augmented poverty line' that integrates the cost of risk exposure to the 'cost of basic needs' used to measure the poverty line. Under this line, all are now poor including vulnerable poor or vulnerable non-poor. So the non-poor vulnerable, who are unable to insure against future risks are now considered poor. *Fourthly,* quantitative models are limited to vulnerability measurement only. To generate more information, qualitative data on risks profile and coping strategies are required to complement the household survey.

Qualitative method: Qualitative method of vulnerability assessment is a bottom-up approach that asks the poor to express their observation in exposure to risks and their impact on livelihoods. It uses participatory research instruments (PRA and FGD) to analyse the risks and vulnerability data generated by the respondents. Their assessments may differ from quantitative methods that mainly use household survey data or apply a top-down approach to reflect the perceptions of government or donor agencies (Holzmann 2001). However, participatory assessments provide effective guidance for policymakers to choose appropriate intervention tools for risk management and resilience

building as quantitative approaches have limited capacity to represent people's voice and perception in the policy.

Participatory risk and vulnerability assessment has following procedure. 1) Identification of vulnerable groups using poverty and vulnerability mapping, and wealth ranking exercises. 2) Preparing a profile of major risks and assessing the impacts of those risks on the vulnerable groups using vulnerability mapping, seasonal calendar, and group discussions. 3) Assessing the household and community level risk management strategies (protection, coping and sharing) through interview and group discussion, and finally 4) Analysing the effectiveness of risk management strategies and livelihood interventions using mobility map and Venn diagram.

This chapter provided conceptual and theoretical framework for the core theme of the study: financial inclusion and livelihood dynamics. Section 2.1 and 2.2 explained basic concepts in financial inclusion and their linkage to livelihood context including vulnerability to poverty. They drew on contemporary empirical studies in financial inclusion. Chapter 7 engages these concepts to investigate financial inclusion gaps in two villages in the northeast rural Bangladesh. Section 2.3 discussed sustainable livelihood approach as an analytical framework to explain livelihoods. Chapter 6 uses this framework to explain livelihood dynamics of two villages in northeast Bangladesh. Section 2.4 summarised the measurements of poverty and vulnerability. Chapter 5 employs qualitative poverty measurement technique such as wealth ranking and quantitative vulnerability measurement technique such as poverty likelihood. Quantitative poverty terms such head count and poverty gap ratios are useful tools to comprehend the poverty and vulnerability context.

3. Research design and methodology

The research uses a combination of qualitative and quantitative methods known as q-squared approach to understand the livelihood context of rural Bangladesh. It is a comprehensive study of livelihood context including internal strategies and external interventions particularly financial inclusion. The quantitative method employs empirical investigation in vulnerability and coping capacity. The qualitative method explores people's preferences and agents' ability to provide financial and other services.

3.1 Study area

The study focuses on two villages in the northeast region of Bangladesh. The villages represent two types of geographic and socio-economic rural settings of the region: high land with relatively well-off livelihoods compared to low land with worse conditions. The reason for selecting two villages is to capture the livelihood diversity of the two distinct topographies. Urban-rural distance is an important determinant of livelihood strategies and financial inclusion. One of the representative villages is relatively closer to the city. This might help explaining the 'distance' effects on rural livelihoods.

3.1.1 Northeast region of Bangladesh

The northeastern part of Bangladesh, known as Sylhet division, has four districts: Sylhet, Moulovibazar, Habiganj and Sunamganj. The division is bordered by the Indian state of Meghalaya, Assam, and Tripura and the Bangladesh districts of Netrokona, Kishoregonj, and Brahmanbaria. It covers an area of 12,569 square kilometres, which is about eight percent of the area of Bangladesh. Geographically, the division has two main topographies: 1) high topography of hills (*Khasia and Jaintia*), small hillocks and high plains along the Indian border and 2) low laying flood plains with free water wetlands at the centre and adjacent to other districts of Bangladesh. High lands with high plains, hills and hillocks are locally known as *Ujan*, *Pahar* and *Tilla* areas. They cover the northern border of Sunamganj and the central and the southeastern region of Sylhet starting with steep hills sloping gently towards low laying basin and eastern *Surma-Kusiara* flood plain. High lands are cultivable two times per year (bi-harvest including vegetables in between). They are normally free from flood but prone to droughts. Agricultural production is relatively high in this region. Lowlands with flood plains and free water wetlands, locally known as *Bhati*, *Haor* and *Beels*, They constitute the eastern and

western *Surma-Kusiara* flood plain region (BBS, 2011). Lowlands are cultivable once a year (mono-harvest as lands remain under water between 3-5 months of the year). The natural setting of Sylhet contains rainforests, tea gardens, hills, hillocks, waterfalls, river valleys, *Haors* and *Beels*. The division of Sylhet occupies an important position in Bangladesh's economy due to its natural resources (oil and gas), tea plantations and foreign remittances earned by expatriate *Sylheties*.

3.1.2 Reasons behind selecting the study area

The reason behind selecting the northeastern region of Bangladesh is threefold. *Firstly*, relative inequality (poor – non-poor gap compared to other regions) is more prominent in the region (Sylhet division). From the HIES (2010) poverty measurement (presented in Tables 4.3 and 4.4, chapter four), it is evident that the rank of the Sylhet division, in terms of incidence, depth and severity, is higher (from better towards worse) in case of the upper poverty line, and lower in the lower poverty line. Thus, there is a relatively high number of extreme poor (below the lower poverty line) than the moderate poor (below the upper poverty line) in the Sylhet division. Researchers and policymakers rarely put a spotlight on poverty and vulnerability situations of the apparently affluent northeast region of Bangladesh. This study attempts to fill the gap. *Secondly*, as some parts of the northwest region of Bangladesh has been poverty and hunger stricken (locally called *Monga*) for many years, researchers and policymakers massively focused in those areas for poverty and vulnerability studies (e.g. Rahman, 1995; Khandker, et al 2010b; 2010c and 2010d; Ahsan and Barua 2010 are among many studies conducted in this region). Some analysts attempted to represent the entire Bangladesh but still ignored the northeast region (Pitt and Khandker 2002; Shahabuddin and Ali 2006; Quisumbing 2007; Azam and Imai, 2009). This study thus concentrates in the regional characteristics of poverty and vulnerability in northeast rural Bangladesh. *Thirdly*, in the financial sector, loan-deposit gap is a major macro-indicator for financial inclusion gap. Bangladesh Bank data shows that the ratios of advances to deposits are almost near the prudential rate of 0.80 in four divisions (0.76 for Chittagong, 0.77 for Dhaka, 0.76 for Khulna, 0.74 for Rajshahi). There is a significant gap in the remaining three divisions (0.46 for Barisal, 0.24 for Sylhet, and 0.93 for Rangpur) (Scheduled Bank Statistics, July-September 2013, www.bangladesh-bank.org). The ratio indicates the amount of advances (bank credit + bills) that banks disburse from their deposits mobilization (banks allowed to disburse 80% of the savings). Surplus funds in Sylhet (24% of the deposits disbursed meaning 76% remained idle or

transferred elsewhere) may contribute to its inequality and urban-rural financial inclusion gap. The high ratio in Rangpur reflects huge credit delivery (mainly microcredit) to the poverty, hunger and seasonality stricken region. The macro indicator of financial inclusion gap motivates this micro level study in vulnerability and financial inclusion in the Sylhet region.

3.1.3 Selection of villages

I selected two villages for the study: *Ausha* and *Bhadeshwari*. The selection criteria were 'location' and 'remoteness' in which location represented topography and remoteness denoted distance from the urban area signifying the true characteristics of rural life. I located one village from each of the two topographies of northeast Bangladesh assuming the distance for 'remoteness' to be no less than 10 kilometres from the district town or 5 kilometres from the local government offices. The selected villages represent two types of livelihoods in terms of relative distance and affluence: 1) Advantageous *Ausha* is situated in relatively fertile high plain, about 12 kilometres away from the Sylhet city. It is under *Mogolgaon* union council in the Sylhet district. 2) Backward *Bhadeshwari* is situated in low yielding flood plain, about 40 kilometres away from the city. The village is under *Zawa Bazaar* union council in the Sunamganj district. Sunamganj town is another 30 km from the village. The number of households in *Ausha* and *Bhadeshwari* are 226 and 217 dwelled by 1737 and 1208 residents respectively (BBS 2012).

3.2 Data and methods

3.2.1 Data requirements

The data requirement follows the core theme of the research including livelihood context and financial inclusion within the framework of the sustainable livelihood approach (SLA). The livelihood context in SLA includes the vulnerability context, livelihood assets, household strategies, external interventions and livelihood outcomes. This research uses the sustainable livelihood approach as the *analytical framework* to explore livelihood dynamics in two villages in northeast Bangladesh. It uses the q-squared approach as the *analytical tool* to investigate the role of external interventions in rural livelihoods. The research focuses on household strategies and inclusive financial intervention. The following table (Table 3.1) shows qualitative and quantitative instruments used for collecting relevant data.

Table 3.1 Data requirements for the research

Theme	Data requirements	Instruments
Main features of the villages Physical and demographic	Location of the village, physical structure, Housing types, wellbeing categories, Demographic composition of families (age, sex, education etc.).	Village transects, Direct observation, Social mapping, HQ, Wealth-ranking.
Livelihood assets Human, physical, natural, social and financial	Literacy rate, health, education and sanitation facilities. Machinery and tools, land, draft animals. Access to common property resources (grazing land, forest, water body). Social network. Financial services organizations, access to financial services.	Village transects, Direct observation, Social mapping, HQ.
Vulnerability context Shocks and stresses Exposure to risks	Trends in shocks and stresses. Stock of food, crop failure, harvesting schedules, employment seasonality. Trend in rainfall, historical occurrence of floods and droughts.	Seasonal calendar, FGDs**,** PS, HQ, Review of secondary data.
Household strategies Income generating activities Coping strategies	Types of income generating activities and coping strategies. Role of institutions in coping capacity and resilience building. Needs and preferences in financial services.	Seasonal calendar, Preference ranking, FGDs**,** HQ.
External interventions Institutions Policies and process	Importance of formal and informal institutions in external interventions, effectiveness of these institutions, provider's capacity to supply financial services, financial inclusion.	Mobility map, Preference ranking, Direct observation, FGDs, Secondary data review.
Livelihood outcomes Livelihood securities	Increased wellbeing, reduced vulnerability	PRA Wealth-ranking, FGDs, HQ.

Adapted from Narayanasamy (2009). PRA = Participatory Rural Appraisal, FGD = Focus Group Discussion, HQ = Household questionnaire, PS = Poverty scorecard.

3.2.2 Data sources

The study collected three types of qualitative data: a) *Behavioural*: coping capacity and financial behaviour of rural people in Bangladesh, b) *Perception*: perception of rural people in microfinancial services and c) *Impact*: institutional impact on rural household's strategies against vulnerability to shocks. The research employed qualitative evaluation of rural people's perception of microfinance products and their capacity to cope with socioeconomic shocks. It also included quantitative assessment of vulnerability to poverty, financial inclusion and its role in resilience building. The respondents for primary data are preferably household heads or adult family members in the case of household surveys and a group of interested village dwellers in participatory surveys. Other primary sources of information included MFI field staff and other financial or non-financial service providers such as moneylenders, rural doctors and members of the local government. Secondary data sources were literature on microfinance, vulnerability and

coping capacity, annual reports of four major MFIs working in the sample areas, the annual report of Bangladesh Bank (the central bank), and Households Income and Expenditure Survey of the Bangladesh Bureau of Statistics (BBS) households. Web pages of the above institutions and the Statistical Year Book of the BBS were other major sources of secondary data.

3.2.3 Sampling design

This research used a sampling technique to select respondents for household surveys. Of the two major sampling techniques in statistical analysis, I chose probability sampling in which every element of the population had a chance of being selected and the risk of selectivity bias is at minimum. In non-probability sampling, some elements of the population may have very negligible or even no chance of being selected and thus there is a possibility of measurement error. Probability sampling has various techniques depending on the purpose of the study: 1) simple random sampling, 2) systematic random sampling, 3) stratified sampling, and 4) cluster or multistage sampling. In this study, I used stratified sampling in which the 'population' was first divided into stratum of independent groups (i.e. poverty groups) and then sample individuals or households were randomly selected from the specific group.

For household stratification, I used PRA wealth ranking exercise in which participants classified their households into three strata: ultra-poor, poor and non-poor. I then took 35 households at random from each stratum, which provided 35 X 3 = 105 households in each village and 105 X 2 = 210 households in the total sample. The data collection team surveyed these households using two quantitative instruments: poverty scorecard (PS) and household questionnaire (HQ). A group of interested and well-informed respondents in each village participated in PRA and FGD exercises. Participants in PRA are residents of the village, irrespective of age and social status, who were interested in sharing information through engaging exercises. Each FGD involved 6-10 participants who discussed the various issues initiated and stimulated by the moderator.

3.2.4 Data collection methods

Data collection in this research was a combination of qualitative and quantitative methods. I used qualitative components for participatory surveys designed to listen and learn from rural people through participatory rural appraisal (PRA), and focus group discussions (FGDs). I applied quantitative modules for household surveys to collect

information from rural people using a household questionnaire (HQ) and poverty scorecard (PS). This qualitative-quantitative combination or q-squared method, followed 'qual-quant-qual' sequence of PRA – PS – FGD – HQ applied on three core themes of the research: vulnerability, coping capacity and financial inclusion. I maintained this sequence to back up, cross check or verify the information gathered by alternative methods. PRA exercises gathered livelihood information including household assets, vulnerability, livelihood interventions and outcomes. Poverty scorecard (PS) collected data to estimate poverty likelihood as a proxy for vulnerability to poverty using 10 simple questions carefully selected from the national household survey questionnaire (HIES, 2010). The household questionnaire (HQ) gathered demographic and livelihood data for an in-depth vulnerability assessment. Both FGD and HQ accumulated data on types of crises, coping and adaptation strategies, microfinance and its insurance role against vulnerability to poverty. Quick and cost effective instruments like PRA and PS provided back-up information for relatively lengthy methods like FGD and HQ. The participatory survey at times compensated or mitigated the risk of low responses in household survey.

3.3 Survey instruments

In the research, I used four survey instruments to collect data on rural livelihoods: 1) participatory rural appraisal (PRA), 2) poverty scorecard (PS), 3) focus group discussion (FGD), and 4) household questionnaire (HQ). A team of three members – the author as principal investigator and two data collectors, conducted the whole survey. As the principal investigator, I was responsible for facilitating the PRA exercises and moderating group discussions while data collectors took field notes, operated a digital recorder, and transcribed PRA exercises.

3.3.1 Participatory rural appraisal (PRA)

PRA is a method of engaging respondents in data collection to make the process quick, accurate and interesting. It is a process of learning from respondents, not simply collecting data from them. The role of the researchers is to facilitate the process of collecting, analysing and presenting data owned and shared by the respondents. Researchers are normally outsiders who are ignorant of the local environment and knowledge and thus they are *learners*. Respondents, on the other hand, are insiders who are well aware of local experiences and knowledge and thus they are *preceptors* (Chambers 2006). In PRA, outsiders build rapport, facilitate the procedure and then hand over to insiders who use maps, models, and diagrams to plan, discuss and evaluate their livelihoods and

environment. Outsiders simply watch, listen and record the outcomes of the process in a relaxed mood (Narayanasamy 2009). PRA is thus *emic* (expressing views, concepts and values of insiders) rather than *etic* (expressing views, concepts and values of outsiders). PRA contains various exercises including participatory mapping, wealth ranking, seasonal calendars, Venn diagrams, flow charts, and mobility map. This research includes the following PRA exercises:

Village transects – Village transect is a rapport-building tool through which local people gradually gain trust and confidence through continuous interaction with researchers. At first, I met the village leaders and senior persons to obtain a general overview of the village. After a brief discussion, they introduced a local person who accompanied me in the observatory walk through the village. We passed through the residential areas observing resources and questioned people about the village. The whole process provided an 'objective' map that identified the village infrastructure including housing, drainage, sanitation and economic activities such as livestock management, rural trades and crafts. My role in this process was an outsider and learner - only observing and listening to the insiders who gradually became the narrators of the village facts. Finally, the villagers prepared a transect matrix in which column represents the resources, activities, problems, opportunities and perceptions against the row of village topography. This matrix provided a summary of rural livelihood opportunities.

Social mapping – Social mapping allows people to present the village layout and infrastructure. In this exercise, participants prepared a map of their village including social and economic resources such as households, schools, tube wells, community centres, religious centres, MFI groups, social capital etc. To begin the process, the moderator first selected a venue, preferably a public place, explained the objective of the mapping exercise and then asked participants to draw a map of their village on the ground with features and landmarks in line with the objective. The exercise was interesting and engaging as the participants enjoyed having the freedom to choose symbols for the features, and landmarks and debate amongst themselves to finalize the map. At the end, one of the participants explained the map to the audience. Data collectors took relevant notes and transferred the map onto paper.

Wealth ranking – Quantitative methods of poverty assessment fail to reflect the true picture as survey data form complex rural settings do not accurately represent a

respondent's voice. Qualitative methods, on the other hand, assume that people who suffer from poverty are the best poverty analysts (Narayanasamy 2009) and thus it is better to document the perception of the poor through participatory appraisals. Wealth-ranking exercise is one such people-centric appraisal providing valuable information on local views of wealth characteristics and wellbeing. In this study, the I asked respondents to rank all households in the village using their perception of relative wealth and level of poverty. The process included preparing a list of households from the social map, selecting criteria for wealth ranking, collecting information to make an index card for each household, sorting and grouping the cards, superimposing the classified households onto the map, and finally, verifying the information with a wider audience. The study used wealth-ranking exercise data to identify poverty groups (extreme poor, poor and non-poor), select the sample and identify focus group participants.

Seasonal calendar – Seasonal variations have serious impacts on rural livelihoods. Certain months in a year are full of employment opportunities and sufficient livelihood securities, and other months are lean and dry. Rural households are thus vulnerable to seasonal shocks and risks. A conventional household survey takes a snapshot view of rural livelihoods and thus is less effective in capturing these shocks. The seasonal calendar is one of the PRA tools that help analyse the seasonal variations in rural households. In this study, villagers prepared an outline of trends regarding the main economic activities, problems and opportunities throughout the year. They identified seasonal variations in crop production, employment, and other livelihood opportunities depicting the frequency and magnitude of rural vulnerabilities.

Mobility map – Village people need to move from their homes either to avail facilities or to seek livelihood opportunities. In a mobility map, respondents explore the movement pattern of an individual, group or communities searching for services, facilities and livelihood opportunities. In this study, villagers sketched a map of economic activities with symbols to explain in details the purpose, distance, mode of transportation, importance and frequency of their visits. Separate male and female mobility maps captured the gender difference in these activities. This study used mobility map and Venn diagram exercises to locate important institutions and measure their effectiveness in rural livelihoods.

Venn diagram – Venn diagram is a symbolic presentation of key institutions that have significant impacts on community or individuals. It provides local perceptions of the role and significance of various organizations and their impacts on rural livelihoods. The exercise is usually carried out on the ground, using circles of plain paper of various sizes (small, medium and big) to represent local institutions. To begin with, participants made a list of institutions and drew a big circle on the ground to represent their village. They then assigned each institution to various paper circles and placed them on the ground surrounding the village circle. The size of the circle represented the 'importance' and their placement represented the 'effectiveness' of the institutions. The bigger the size, the higher was the importance and larger the distance, the lesser was the effectiveness and vice versa. Finally, I asked one of the participants to explain the exercise and verify with the audience. Good practice in this exercise includes repeating the exercise with another set of participants and copying the exercise on plain paper with detailed notes of participant's discussions.

Pairwise ranking – Pairwise ranking is a method of comparing and prioritizing livelihood events such as problems, potentials and needs. It is a preference ranking exercise in which people express their priorities in pair of elements that result in overall ranking. It reveals participant's preferences to certain services and justifies the relevance and appropriateness of livelihood interventions. In the beginning, I let the participants recognize their priority set (e.g. need for financial instruments) or preference set (e.g. preference for financial institutions). For each set, they prepared a symmetric matrix placing the items in row and column to compare each pair, and finally entered the preferred item in the relevant grid. Participants then explained the reasons for their preference or non-preference to a particular item. The data collectors took notes of these illustrations. Participants then added the frequency of each item in the matrix to obtain its preference score. Finally, I converted the score into preference ranking for financial instruments and financial institutions.

Direct observation – In research, observation is not merely watching things or events, rather it is a systematic viewing of specific phenomenon for the purpose of gathering data for a particular study. It is a scientific inquiry in which, a researcher selects things to observe within the range of the aims and objectives of the study. Observation can be direct when a researcher personally observes things without using mechanical devices. Indirect observation involves audio-visual devices without the physical presence of the observer.

Both types of observations can be overt where the presence of observer (or device) is recognized or covert in which observer is hidden. Covert observation is important to grasp the reality, as people tend to behave differently in the presence of observer. Observation can also be participant and non-participant. In participant observation, the observer is also part of the phenomenon or group. This is in contrast to a non-participant observer who stays apart and does not participate in the events to be observed. This study used the direct observation technique in both overt and covert ways to review the activities in the group meetings of MFIs and understand the financial behaviour of the participants.

3.3.2 Poverty scorecard (PS)

Poverty scorecard is a quick and cost effective assessment tool that measures and tracks the poverty level of a household or individual (Chen and Schreiner 2009; Schreiner 2013). It was developed by Mark Schreiner for the Grameen Foundation for quick measurement of poverty likelihood and intervention impact (Grameen 2008). The scorecard requires 5-10 minutes to conduct the interview, tally the scores and instantly compute the poverty likelihood using a simple calculator. The scorecard contains 10 easy questions readily answerable by all participants regardless of their educational background. Questions are carefully selected from a set of high frequency poverty correlates. These questions are readily verifiable with observable data sources. For example, the scorecard simply asks roofing or floor materials instead of the unobservable 'value of the house'. Each question has multiple-choice answers with corresponding response values. The sum of the appropriate response values from ten questions gives the poverty score for a specific household. The score ranges from 0 to 100 where zero means most likely to fall below the poverty line and one hundred indicates most likely to remain above the line. A field investigator can convert the score into poverty likelihood using a poverty index constructed from bootstrap regression calibrated on household income and expenditure survey data (Schreiner, 2013). The calibration process involved the national poverty line and its international benchmark adjusted for purchasing power parity (PPP). In this study, I used the poverty score from the scorecard to calculate the poverty likelihood of the sample households by matching the score with the corresponding likelihood outcome in the poverty index for Bangladesh (Table A2.1) prepared by Schreiner (2013).

3.3.3 Focus group discussions (FGDs)

FGDs aimed at issue-based discussions with service receiver and service provider groups. I organized five focus group discussions in each village: Three with poverty groups (extreme poor, poor and non-poor), one with microfinance service providers (MFI field staff working in the sample villages) and one with other service providers (village doctor, local government members, and moneylenders). The main themes of the FGDs were coping capacity, perception and preference in financial instruments, and the role of financial inclusion. Participants discussed the impacts of MFIs on their livelihoods and identified limitations in financial services. MFI field officers and other service providers expressed their opinions about rural livelihoods and service interventions from their own point of view. Male and female participants also discussed gender issues in microfinance and coping capacities.

3.3.4 Household questionnaire (HQ)

A household questionnaire contains demographic and financial modules to capture household information on health, education, income and expenditure, loans and savings, endowments, risks and shocks. The demographic module includes gender, age, marital status, and occupation. The key constructs of the financial module were sources and uses of loans and savings with special focus on coping capacities of the poor against risks and shocks. The questionnaire contained a combination of 'closed' and 'open' sets of questions and data collectors were encouraged to write down any interesting features of households within blank spaces of the questionnaire. This option brought flexibility in the questionnaire as in case of 'open' set while keeping the merits of 'closed' set. To ensure validity and appropriateness, the questionnaire was pilot tested on 20 households before the final survey.

In short, PRA exercises generated data on poverty mapping, seasonality, institutional impacts, and financial preference of households. Its wealth ranking exercise identified poverty groups and survey respondents. FGD respondents discussed types of risks, household strategies and external interventions. The household questionnaire and poverty scorecard provided quantitative information on household demography, and the poverty and vulnerability status. The survey instruments maintained qual-quant sequence in such a way that findings from one instrument could cross validate the other.

3.4 Survey administration

3.4.1 Ethical issues

This study follows three-dimensional approach to ethics in development studies (Sumner and Tribe 2008). Firstly, it focuses on the *development ethics* and queries the 'ends' of development such as sustainable livelihoods in Chapters 4 and 5. Secondly, it investigates the appropriate 'means' of development necessary for reaching the 'ends'. This fulfils the *intervention ethics* that enquires into strategies of households, MFIs and Government. Chapters 4, 6 and 7 highlight the internal strategies and external interventions such as household strategies and financial inclusion. The *development ethics* and *intervention ethics* reflect the core theme of the study: livelihoods and financial inclusion. Thirdly, the study considers the following ethical procedure. This is simply a *procedural ethics* in research.

Ethical procedure: Before carrying out fieldwork in Bangladesh, I acquired ethics clearance from the University Research Ethics Committee (UREC) at the University of East London (UEL) for field research involving human participants. I also reviewed the *Data protection Act 1998* and UEL's *Code of Good Practice in Research* to follow the regulatory and ethical framework in research. In Bangladesh, I pursued fieldwork consent at three levels. At first, I contacted branch managers of three MFIs (Grameen Bank, ASA and FIVDB) operating in the sample villages. They had to obtain head office approval before authorising my access to branch office data and FGDs with field staff. Secondly, I met chairpersons of the union councils under which the villages under study constituted. I explained the objectives and usefulness of my research project to them. After a brief discussion, they introduced me to the respective village chiefs. This gave a political approval to my project. Finally, at the village level, fieldwork acceptability came in two ways. *Firstly*, PRA had built-in rapport building mechanisms in which people willingly engaged in interesting exercises. *Secondly*, before starting each survey (PRA, FGD, HQ and PS), the facilitators gave a short speech on the purpose and importance of the research and assured the respondents on anonymity and data confidentiality. I repeatedly informed the participants that the study was an academic exercise and it was not a part of any development project or government grant provision. Respondents understood the message and actively participated in the survey.

Addressing ethical concerns: During the fieldwork, I experienced a couple of interesting ethical concerns in the field of development research. The first concern was about the

position of the researcher and participants. At the very beginning, rural people thought that the survey might have direct benefits such as government grants or MFI service expansion. This is a common expectation among villagers facing poverty and vulnerability. To address this issue, I clearly explained my professional background and motivation to undertake the study. I sincerely conveyed the message that the survey might not have immediate benefits but it could bring indirect paybacks through research findings. I convinced them saying that policymakers (*higher authority* in their thought) could use these outcomes in their development planning.

The second ethical concern was that the participants were in doubt whether they were allowed to say anything that could go against the MFI officials or union council leaders. This issue is related to the confrontation between service receivers and service providers. Service providers were also sceptical whether I had any intention to spread confusion among the participants regarding their services or report any discrepancy to the media. These issues were addressed by assuring the informers that their data would be well protected with due confidentiality and anonymity. In short, in all of the above considerations, I followed three key principles of research ethics. i) clearly explaining aims and objectives of the research to participants, ii) repeatedly answering their query about the benefits of the survey by saying that the data will be used only for academic purpose that may have indirect benefits, and iii) faithfully assuring them about the safe storage, confidentiality and anonymity of their data.

3.4.2 Survey process

The survey was conducted in *Ausha* and *Bhadeshwari* during February to May 2013. Before the final survey, I conducted a pilot survey with 20 households in the village *Ausha*. This mini survey provided useful information to finalize the household questionnaire and identify the potential contents of PRA instruments. It also facilitated useful information in FGD prompt card development. For the household survey, I arranged a sufficient number of printed questionnaires and scorecards with spare copies in case of spoils. In the participatory surveys, respondents collected PRA signpost materials such as seeds, leaves, flowers, stones, from their own resources. They nominated a primary school as the venue for FGDs and scheduled the meeting during the weekend or after school time. I arranged sufficient data collection materials for the research assistants, such as paper and pencil, sharpener, eraser, ruler, writing pad, digital recorder as well as a daily allowance. Above all, I organised effective training for the data

collectors to minimize information gap, low response and inconsistency in the data collection process. The data collection line up was as follows: first, the data collection team went to *Ausha*, organized the PRA exercises, completed poverty scorecards, facilitated FGDs, and finally finished the survey with household questionnaires. We then went to *Bhadeshwari* and repeated the qual-quant sequence. In the household survey, we quickly surveyed sample households using poverty scorecards. We distributed household questionnaires to those households, sat face to face with the respondents to ask questions, clarified confusions, and finally recorded their responses. In participatory surveys, we invited interested and informative villagers to participate in PRA and FGDs.

There was a follow up in household surveys to minimize the risk of missing data. I thoroughly examined all completed questionnaires to find any missing or inconsistent data, and revisited corresponding households if necessary. In the case where any households were reluctant to respond, I replaced them with another household. In order to avoid selection bias or time pressure, extra households were selected *ex ante* i.e. at the time of initial random selection, and not *ex post* i.e. after the situation arose. After the data collection and follow up was concluded, I organised the completed questionnaires for coding, cleaning and final entry into the computer database. In the case of PRA, when respondents finished an exercise I asked one of them to explain and verify the drawing to the audience. The data collectors then transcribed the outcomes in newsprint and noted down interesting findings. With prior permission, they recorded respondent's descriptions using a digital recorder. They also recorded participant's narration in focus group discussions (FGDs) using digital recorder. Their discussions were transcribed carefully into written form for further analysis.

3.4.3 Advantages and difficulties during fieldwork

Fieldwork has been mix of difficulties and ease. I faced no problem in communicating with respondents because of my familiarity with the language, people and culture of the region. The language in the region is *Sylheti Bangla* that has substantial colloquial deviations from *Bangla* - the mainstream language of Bangladesh. I speak native *Sylheti*, which was an advantage during contact with respondents and for rapport building. Moreover, the local MFI named FIVDB provided accommodation for the data collection team in its area office near the sample villages and arranged logistic support for the research process. In addition, the fieldwork was financed by the German-based organization - University Meet Microfinance (UMM).

During the fieldwork, the data collection team faced difficulties, as there was political unrest in the country created by the opposition demanding the next general election to be held under a non-party caretaker government. From time to time, the party and its alliance announced *Hartal* (countrywide strike) that resulted in violent demonstrations and blockades to all economic and business activities across the country. *Hartal* hours ranged from half a day to seventy-two hours of continuous demonstrations. This political turmoil continued until the election was held in January 2014. Fortunately, we were able to continue the fieldwork, as the impact of violence and unrest had been less severe in rural areas such as *Ausha* and *Bhadeshwari*. Moreover, *Hartal* compelled people to remain at home and thus people had more spare time. Therefore, it could have been seen as an advantage for the data collectors.

3.5 Data process and analysis

In data collection and processing, I used a q-squared approach that combines qualitative and quantitative methods to allow triangulation in the analysis. The mixed approach allows the researcher to exploit the merits and avoid the demerits of both methods. Combined approach is assumed to ensure *validity* of the data through qualitative analysis and its *reliability* through quantitative analysis. This research utilized two qualitative instruments such as PRA and FGD and two quantitative tools like household questionnaire (HQ) and poverty scorecard (PS). PRA explored the social and physical topology of the study area and provided stratification of poverty groups that helped in selecting respondents for household surveys and focus group discussions. While PS delivered data for assessing the poverty likelihood, PRA, FGDs and HQ together provided data on respondent's perception and preferences in rural finance. Quantitative data on rural livelihoods were presented in descriptive statistics keeping room for a logistic regression model on vulnerability, coping capacity and financial inclusion in future.

Rationale for q-squared approach: Based on debates among economists, sociologists and anthropologists during the 1970s and 80s, (Bardhan 1989) and global discussions about whether quantitative or qualitative method is superior or appropriate in examining poverty in 1990s, researchers now recognize the multi-dimensional and cross-disciplinary approaches to studying poverty combining quantitative and qualitative methods. This q-squared approach is gaining popularity in social research particularly in the study of poverty and vulnerability. In the mixed approach, quantitative components ensure the *reliability* and statistical representativeness of the data while qualitative components

confirm the *validity* and appropriateness of the data to actual conditions. Although surveys use large samples to ensure representativeness, its questions are not flexible enough to explain actual behaviour of the respondents. This disadvantage can be resolved by flexible queries to respondents to know what they know instead of what researchers want to know. Shaffer (2006) identifies two types of q-squared studies in social research. 1) Putting together – either conducting qualitative and quantitative fieldwork simultaneously or integrating research results of qualitative and quantitative approach *ex post* to enrich, confirm or refute each other. 2) Methodological integration – use of outputs or techniques of one approach for designing research methods of another or applying techniques of one approach to another (e.g. using random sampling to select participants in participatory poverty appraisal (PPA)). Baulch and Davis have used fully integrated and sequenced approach to study poverty dynamics in rural Bangladesh (Baulch and Davis 2008; Davis and Baulch 2010). They argued that the q-squared approach was used for filling the loopholes of any single approach and for gaining deeper understanding through cross checking and triangulation of findings. Hussain (1998), Greely (1999), Kabeer (2004), and Sen and Hulme (2006) are among others who have used 'putting together' q-squared methods in poverty analysis in Bangladesh. Sulaiman and Matin (2008) applied a methodological integration approach in assessing MFI programme impacts on the ultra-poor in Bangladesh. Following Baulch and Davis (2008), current research applied sequencing of qual and quant investigations rather than conducting them simultaneously. It also applied methodological integration in which PRA wealth ranking exercises stratified the sampling frame before the random selection of respondents for household survey and identification of focus groups.

4. Poverty, vulnerability and financial inclusion in Bangladesh

Bangladesh is a South Asian country surrounded by India on the west, north and northeast, Myanmar on the southeast and the Bay of Bengal on the south. The total area of the country is 147, 570 square kilometres. The whole country is plain lands except for high lands in some parts in the north and hills and hillocks in the northeast and southeast regions. Three major rivers *Padma*, *Meghna* and *Jamuna* and their 230 tributaries and channels form a total length of more than 24 thousand kilometres, which make a network of rivers in the country. There are six seasons in a year of which winter, summer and monsoon are prominent. Winter begins in November and ends in February. The temperature varies between 7^0 and 25^0 Celsius in winter and rises to between the ranges of 35^0 to 40^0 Celsius during the summer (March-June). The monsoon starts in July and continues up to October during which 80 percent of the total rainfall is recorded at an average of 142.9 - 433.8 centimetres. The maximum rainfall is recorded in the northeast region of Bangladesh (BBS, 2010). The agricultural sector of the country is labour intensive. It contributes to 20.2 percent of the GDP but employs 48.1 percent of the total labour force. Loss of agricultural production is a common phenomenon due to natural calamities such as flooding, drought, and cyclones. Rice, potato and pulses are the main crops of the country. As a country of rivers, canals, *haors* and other low-lying depressed land, Bangladesh has huge bodies of water abundant in wealth of fish. Although the economy is agriculture based, services and industry are constantly gaining larger shares in GDP (49.8 and 29.9 percent respectively).

4.1 Poverty profiles of Bangladesh

4.1.1 Poverty status

Since the independence in 1971, poverty reduction agenda has been an overriding priority in the developmental plan of Bangladesh. Consequently, the poverty trend seems to be on the right path of the Millennium Development Goal (MDGs) for Bangladesh. Eradicating extreme poverty and hunger is the number one MDG goal set at halving the proportion people below the poverty line by the year 2015 relative to the base year 1991. Recent household survey data (HIES, 2010) show that the population below the line stand at 31.5 - very close to the target of 29.0 by 2015. Despite the declining trend, Bangladesh remains in the lower segment (146^{th} among 187 countries) of the UNDP Human Development Report, 2013. The multidimensional Poverty Index (MPI) of Bangladesh stands at 0.292

which is the lowest among the South Asian nations (Nepal 0.217, Pakistan 0.264, India 0.283 and Sri Lanka 0.021) (Economic Review 2013).

Table 4.1 MDG goal 1: Eradicating extreme poverty and hunger for Bangladesh

Target variables	Base Year 1990-91	Current Status*	Target Year 2015
Target: a. halving the proportion of people below the poverty line by 2015			
1. Head count	56.6	31.5	29.0
2. Poverty gap	17.0	6.5	8.0
Target: b. halving the proportion of people in hunger by 2015			
1. Population below minimum level of dietary energy consumption (%)	28.0	19.5	14.0

Source: Bangladesh Economic Review, 2013 and HIES 2010. * Data on head count and poverty gap are from HIES, 2010, data on dietary energy consumption (19.5) is from HIES, 2005 which is not available in its 2010 version.

4.1.2 Incidence of poverty

Bangladesh Bureau of Statistics (BBS) constructs two national poverty lines: upper poverty line and lower poverty line using the Cost of Basic Needs (CBN) approach that considers non-food consumption along with food consumption measured in daily calorie intake. Both lines start with same food line i.e. cost of daily calorie intake of 2122 kilo calories from a bundle of food items consisting of 11 essential foods such as rice, wheat, pulses, potatoes, other vegetables, fruits, milk, sugar, oil, fish, and meat. In the lower national poverty line, the non-food component is calculated as median non-food expenditure of those households whose per-capita total expenditure (food + non-food) is close to the food line. Using HIES 2010 data, BBS calculated the lower national poverty line as BDT 42.90 per person per day, which indicates person level poverty rate of 17.6, and household level poverty rate of 15.4 (HIES, 2010). Households or persons below the lower poverty line are extremely poor as their total expenditures are equal to or less than the food poverty line. In the upper poverty line, the non-food component is taken as median non-food expenditure of those households whose per-capita food expenditure (not total expenditure) approaches the food line. In the BBS measurement, the upper poverty line is BDT 52.64 per capita per day resulting in a person level poverty rate of 31.5 and a household level poverty rate of 28.5 percent. Households or persons above the lower but below the upper poverty lines are called moderate poor (HIES 2010).

Table 4.2 Poverty trends in Bangladesh.

Poverty measures	2010			2005		
	National	Urban	Rural	National	Urban	Rural
Head count index						
Lower poverty line	17.6	7.7	21.1	25.1	14.6	28.6
Upper poverty line	31.5	21.3	35.2	40.0	28.4	43.8
Poverty gap						
Lower poverty line	3.1	1.3	3.7	4.6	2.6	5.3
Upper poverty line	6.5	4.3	7.4	9.0	6.5	9.8
Squared poverty gap						
Lower poverty line	0.8	0.4	1.0	1.3	1.5	0.7
Upper poverty line	2.0	1.3	2.2	2.9	2.1	3.1

Source: HIES 2010. Poverty incidence is head count ratio of people living below a certain poverty line to total population. Poverty gap is the distance of the poor households from a specific poverty line.

The incidence of poverty measured by the head count ratio is the percentage of the population below a certain poverty line. In case of the upper poverty line, the head count ratio declined from 40.0 to 31.5 (8.5 percentage points or 1.7 percent per annum) during the period between 2005 and 2010. For the lower poverty line the head count declined from 25.1 to 17.6 (7.5 percentage points or 1.5 percent per annum) during the same period. In the divisional context, the Chittagong division accounts for the lowest incidence of poverty under both thresholds (13.1 and 26.2) while the Rangpur division records the highest incidence (30.1 and 46.2). Poor people in urban areas of Dhaka, Chittagong and Sylhet divisions are significantly less in head count relative to other regions. However, the rural poverty maintains almost a similar pattern in all regions. The Sylhet division has interesting characteristics in poverty head count. The position of this division is second in upper poverty threshold and fifth in lower poverty threshold. A similar pattern is seen across urban and rural areas. This bears two implications: first, there are more extreme poor in total head counts and second, the number of poor people is higher in rural areas than in urban areas in Sylhet compared to other regions.

Table 4.3 Division-wise incidence of poverty in Bangladesh

Division	Lower poverty line			Upper poverty line		
	Divisional	Urban	Rural	Divisional	Urban	Rural
Barisal	26.7	24.2	27.3	39.4	39.9	39.2
Chittagong	13.1	4.0	16.2	26.2	11.8	31.0
Dhaka	15.6	3.8	23.5	30.5	18.0	38.8
Khulna	15.4	16.4	15.2	32.1	35.8	31.0
Rajshahi	16.8	13.2	17.7	29.8	29.0	30.0
Rangpur	30.1	24.0	30.8	46.2	37.0	47.2
Sylhet	20.7	5.5	23.5	28.1	15.0	30.5

Source: HIES 2010. Poverty incidence is head count ratio of people living below a certain poverty line to total population.

4.1.3 Depth and severity of poverty

The depth and severity of poverty measured by the poverty gap (PG) and squared poverty gap (SPG) using FGT method (Foster, Greer and Thorbecke 1984) are simply the average of distance and squared distance from a given poverty line. In both measures, depth and severity of poverty declined at a moderate rate during 2005 - 2010 across the poverty lines and geographic location. In all cases, changes in poverty indicators (i.e. HCR, PG and SPG) show that the average consumption level of the poor has improved during the period.

Table 4.4 Division-wise depth and severity of poverty in Bangladesh

Division	Lower poverty line		Upper poverty line	
	Poverty gap	Squared poverty gap	Poverty gap	Squared poverty gap
Barisal	5.4	1.6	9.8	3.4
Chittagong	2.2	0.6	5.1	1.5
Dhaka	2.7	0.7	6.2	1.8
Khulna	2.7	0.8	6.4	2.0
Rajshahi	2.8	0.7	6.2	1.9
Rangpur	5.5	1.4	11.0	3.5
Sylhet	3.3	0.9	4.7	1.3

Source: HIES 2010. Depth and severity of poverty is the average distance and squared distance of the poor people living below a certain poverty line measured by the Poverty Gap and Squared Poverty Gap ratios respectively. Urban and rural ratios for all divisions are available in HIES (2010).

As well as in head count measurement, the Rangpur division recorded the worst situation in depth and severity of poverty in relation to both upper and lower thresholds. The Sylhet and Chittagong divisions score lowest (meaning better situation) in both ratios considering upper poverty lines. However, in the lower poverty line, the Sylhet division scores a comparatively lower position (fifth among seven divisions). It justifies the fact that extreme poverty has a higher share (as in case of head count ratio) in the total poverty situation. It also indicates a greater income inequality in the region.

4.2 Vulnerability and coping capacity

4.2.1 Household risks and coping strategies

The household Income and Expenditure Survey (HIES) 2010 reports the nature and impact of crises facing the urban and rural population during the reference period of 12 months. It inquires how households combat those crises to achieve livelihood securities. The survey finds eighteen types of crises that fall into five broad categories. 1) *Natural* calamities like floods, droughts, cyclones, irregular rains, and erosion. 2) *Health* shocks

such as serious illness, disability due to accident or disease. 3) *Economic* stress such as inflation, job loss, sudden death of main earner, 4) *Agricultural* shocks such as crop failure, livestock diseases, high price for agro-inputs or low price for agro-output and 5) *Social* disorder such as conflicts, violence, dowry, theft of money/valuable assets. A negligible number of rural respondents report political instability as crisis. Urban respondents are more concerned about the countrywide strikes known as *hartal* since it has direct impact on their livelihoods (HIES 2010).

Table 4.5 Households reporting first-hand strategy to cope with crisis

Strategies	National	Urban	Rural
Taking help from neighbour, friends and relatives	16.5	21.5	16.0
Borrowing from formal and non-formal sources	14.7	13.7	14.8
Selling assets like livestock, land, and house	5.0	7.2	4.8
Using savings	35.4	35.0	35.5
Crop diversification	6.6	1.9	7.1
Income diversification (farm/non-farm employment)	6.1	1.7	6.5
Reducing consumption (smoothing)	5.5	5.4	5.5
Others (aid, grant, mortgaging land, migration)	10.2	13.6	9.8

Source: HIES 2010. The strategies reported in this table are first-hand measures taken by the households not multiple strategies thus percentages are added to hundred.

Respondents of the HIES 2010 survey report 16 types of strategies people use to fight shocks and risks. Most of the households in both rural and urban areas draw on savings when facing a crisis event. Around 35 percent of the households in Bangladesh use savings as their first-hand coping instrument. The next important strategies are seeking help from friends or kin, and borrowing from formal or informal sources. In the hierarchy of strategies, selling of durable assets, income diversification, crop diversification, changing food habits or consumption smoothing are found with similar orders of importance. However, diversification as a coping strategy is less obvious in urban areas than in the rural. Some of the strategies are prominent in urban areas such as selling land or houses. Rural people are more likely to rely on aid, grant, relief, and migration, as their sources of income are unstable and constrained.

4.2.2 Health risks

People suffer from various health problems. The HEIS 2010 reported some common illnesses suffered by the respondents during the last 12 months from the time of reporting. Gastric ulcer was found to be the most frequent health risk suffered by the respondents in all areas followed by fever and blood pressure.

Table 4.6 Common illness in Bangladesh

Common illness	National	Urban	Rural
Fever (such as flu, pneumonia, chronic fever)	16.9	13.3	18.0
Injury, paralysis or disability	6.1	4.1	6.8
Heart disease	7.3	7.7	7.2
Asthma	8.9	8.6	10.3
Gastric ulcer	24.0	22.5	24.5
Blood pressure	10.5	13.9	6.5
Diabetes	5.4	11.5	4.1
Others (dysentery, eczema, leprosy)	20.9	18.4	22.6

Source: HIES 2010. The illness reported in this table is the most serious health problems experienced by any members of a household during the last 12 months.

It is also found that flu, pneumonia, and rheumatic fevers are more prevalent in the rural areas (18.0%) than in the urban areas (13.3%). On the other hand, blood pressure and diabetes are more urban diseases (14% and 11.4%) than rural (6.5% and 4.1%). Asthma and other respiratory problems are also profound in both areas. Rural people are more prone to bowel related diseases such as diarrhoea, and dysentery. Overall, the pattern and prevalence of illness is more or less same in urban and rural areas.

Table 4.7 Strategies for mitigating health risk

Strategies	National	Urban	Rural
Income or consumption smoothing	80.2	85.4	79.1
Savings	13.4	11.4	13.8
Selling assets like land, livestock and trees	0.9	0.6	1.0
Borrowing from formal and informal sources	2.6	0.8	3.1
Others (donation, mortgaging land)	2.9	1.8	3.0

Source: HIES, 2010. Other items includes donation from friends and relatives, money received from mortgaging land etc. Borrowing from informal source includes friends and neighbours, moneylender and from formal source include banks and MFIs (BBS, 2010, p. 120).

It is interesting to note that more than eighty percent of medical expenses come from income or consumption smoothing. This indicates the seriousness of the households in mitigating health problems. However, 15.6% of the households consider high expenditure as a major barrier to treatment for illness (HIES 2010, p.105). More than ten percent of the households draw on savings to resolve health risks. The precautionary motive for savings has similar frequency in urban and rural areas (13.8% and 11.4%). Savings (13.4%) is more preferable to borrowing (2.6%) as the latter needs more time and has higher transaction costs to draw money from formal or informal sources.

4.2.3 Major sources of natural hazards

Bangladesh is a land of natural calamities such as floods, droughts, cyclones, tornadoes, river erosion, earthquakes, landslide, cold waves, arsenic contamination, salinity intrusion, etc. They occur at different times and places with diverse severity and magnitudes.

Floods: flooding is an annual phenomenon in Bangladesh, caused by rainfall during the months of July and August, submerging 20 to 70 percent of the country depending on the severity of the calamity. Extreme flooding returns to Bangladesh every 10-20 years. In the history of independent Bangladesh, floods in 1974, 1988, 1998 and 2004 have been catastrophic in causing severe damage to the economy, disrupting livelihoods and loss of lives (WARPO 2005). Two major types of flood occur regularly or with an indefinite interval in Bangladesh. 1) Flash floods during April - May and September – November caused by overflow of hilly rivers in the eastern and northern areas of Bangladesh. 2) Monsoon floods during June - September caused by monsoon rain that over flows major rivers. There are two occasional floods. 1) Rain floods caused by sudden heavy rainfall and drainage congestion, and 2) Coastal floods caused by cyclones and tides in the coastal region. Floods differ in location, timing, intensity and duration. About 68 percent of the country is vulnerable to severe floods and 25-30 percent of the area is inundated with yearly normal floods (DMB 2010).

Droughts: Inadequate and uneven rainfall causes drought, which occur at an indefinite interval. The dry season is an annual phenomenon but when insufficient or no rainfall continues for an extended period it causes serious damage to agricultural production leading to human misery with persistent food shortages. An extended dry season affects the planting of wet crops (*Aman* paddy and *kharif* crop[1]) that results in crop loss or total damage. There are three main types of droughts affecting the country. 1) Permanent drought in the region with dry climate caused by barrages or river dams built upstream of the Bangladeshi rivers in the Indian territory. 2) Seasonal drought which occurs sometimes in the dry season of a year because of an extended rainless period e.g. *monga* in northwest region, and 3) Unpredictable drought caused by an abnormal shortage of rain in an indefinite year. Many seasonal and unpredictable droughts have occurred since the

[1] There are three major types of paddy grow in Bangladesh: *Aus*, *Aman* and *Boro*. Crops are broadly classified into two groups: 1) *Kharif* crops are sown in spring or summer and harvested in late summer or early winter. 2) *Rabi* crops are sown in winter and harvested in spring or early summer.

independence of Bangladesh in 1971 of which the most damaging one was in 1974 (WARPO 2005). To combat the adverse effects of droughts, surface and ground water irrigation techniques are normally adopted. However, the former method is limited by deteriorated or polluted water body and the latter technique is unsustainable as the depletion of ground water resources results in arsenic contamination and reduction of soil moisture, which has a long-term effect on crop production.

Cyclone, tornado and earthquake: Tropical cyclones from the Bay of Bengal together with storm surges are the deadliest disasters for Bangladesh, causing loss of thousands of lives and devastating casualties for the survivors. Although it hits the coastal region, the whole country is affected by strong gusty winds. One of the most devastating cyclones occurred in 1970 that hit the Bangladesh coastline with a wind speed of about 225 km per hour causing the death of more than 200,000 people as well as causing damage to livelihoods. The cyclone in 1991 had a similar strength and severity but due to improvement in disaster risk management (DRM), the death toll reduced to less than 150,000 (WARPO 2005). The government of Bangladesh in collaboration with NGOs and international agencies has successfully operated pre and post DRM to reduce the effects of the recent cyclones, SIDR in 2007 and AILA 2009 (DMB 2010).

A tornado is a local severe storm (whirling wind with a funnel shaped cloud that travels at speeds of several hundred km per hour) and occurs in two transitional periods: pre-monsoon (March – May) and post-monsoon (October – November). The pre-monsoon period is characterised by abnormal rainfall or droughts in many parts of Bangladesh. There are some seasonal storms locally known as *Kalbaishakhi* (nor'wester) during April-May. Tornadoes and nor'westers are sudden and often in short length but they leave serious casualties to livelihoods. Another sudden hazard is an earthquake. Seismic-tectonic studies reveal that Bangladesh is a part of the seismically active Indo-Myanmar range, especially its north and southeastern parts. In the last two decades, Bangladesh has experienced 4-5 tremors of moderate to severe intensity (Choudhury 2005). Bangladesh is also vulnerable to *tsunami* caused by underwater earthquakes and submarine landslides. Although the Asian *Tsunami* in 2004 did not hit Bangladesh severely, the trembles were felt all over the country.

River erosion and landslide: Rivers in Bangladesh are morphologically changing – banks may erode or expand, braiding into channels to form islands (*char*) in between. River erosion causes the loss of cultivable land, affecting millions of people every year in riverine Bangladesh (NWRD 2001; CEGIS 2005a). Only a portion of affected people manages to find new shelter while the majority become landless and homeless for indefinite periods. River erosion occurs slowly and gradually but its effects are devastating and long term. The Bangladesh government has Char Livelihood Programme (CLP) to rehabilitate the erosion affected people in the new island (*char*) formed in the river.

The poor and landless people living in risky hill-slopes face landslides in the northeastern and southeastern hilly regions of Bangladesh. Geoscientists believe that the immediate reason for the calamity might be the heavy rainfall, but in the long-term they are the consequences of deforestation and unplanned development work including reshaping and excavating of hills. The most damaging landslide was the Chittagong landslide in 2007 killing more than 120 people (DMB 2010).

Arsenic contamination and saline intrusion: Arsenic contamination in drinking water is a serious health risk in Bangladesh. According to the British Geological Survey and the Department of Public Health and Engineering (DPHE) of Bangladesh, groundwater in the country is contaminated with arsenic concentration ranging from 0.25 mg/L to 1600 mg/L (the WHO recommended risk free value is 10 mg/L). More than 60 million people in 61 out of 64 districts of Bangladesh consume contaminated water (CEGIS 2005b). Coastal districts of the country face another water related risk called saline intrusion in the land that starts in the winter and rises sharply in the dry season from the normal of 10 percent to over 40 percent of land. When flow of fresh water declines together with silting of the river-bed, sea water travels far inside the country resulting in salinity of both ground and surface water and affecting agricultural production, fisheries, livestock and even mangrove forests (WARPO 2005).

4.3 Livelihood interventions

Livelihood intervention is external support to households provided government (GO) or non-government organization (NGO) including MFIs. Government intervention includes social security programmes while MFIs deals with microfinancial support to household strategies.

4.3.1 Government interventions

Social security against poverty and vulnerability: Social Security Programme (SSP) has two major roles: *Firstly*, it provides a 'safety net' for protecting the extreme poor and *secondly*, it arranges a 'springboard' or 'safety ladders' for promoting the entrepreneurial ability of the poor. Safety net programmes target the extreme poor who do not have productive resources to support livelihoods thus live on charity. Safety ladder programmes support poor people who have the capacity but lack enough resources to get out of poverty. The government of Bangladesh has two measures for the poor: 1) *protective*: supporting the elderly, destitute, disabled, orphans and freedom fighters through transfer of resources, 2) *promotional*: allocating fund for human development and social empowerment through school stipend and microfinance programmes. Some programmes are a combination of protective and promotional purposes such as employment and income generating activities through public works (Rahman and Choudhury, 2012). Protective measures include cash allowance, food security and disaster assistance. Promotional services include scholarship for schoolchildren, and microfinance support for income generating activities. Transfer of cash or kind act as a 'safety net' by protecting the extreme poor from further degradation and microfinance products, scholarship and training acts as a springboard or 'safety ladder' for lifting the poor from below the poverty line.

*Social protection***:** Social Protection (SP), commonly known as Social Safety Net, aims to protect the extreme poor from being persistent poor and destitute. The Bangladesh government has two types of safety net programmes: cash transfer and food security.

i) Cash assistance: The Ministry of Social Welfare allocates Taka 300 per person per month for elderly citizens (65+ of age and unemployed), the physically disabled and vulnerable women such as widows, or those who are deserted and destitute. The Ministry of Women and Children Affairs provides a maternity allowance of Taka 350 per month for lactating mothers to enable better nutrition for newborns and mothers. This allowance

follows training for childcare, health and nutrition. The Ministry of Freedom Fighters Welfare arranges honorarium at a monthly rate of Taka 2000 for those who took part in the war of independence in 1971 and were injured, disabled or became insolvent later on. There are training and self-employment programmes for the freedom fighters and their dependents.

Table 4.8 Major safety net programmes in Bangladesh

Programme	Number of beneficiaries (in million)	Monthly allowance per person (cash or food grain)
Old age allowance	2.48	Tk. 300
Disability allowance for insolvent citizen	0.28	Tk. 300
Allowance for widow and destitute women	0.92	Tk. 300
Maternity allowance for poor women	0.10	Tk. 350
Allowance for insolvent freedom fighter	0.15	Tk. 2000
Vulnerability group development (VGD)	1.50	30 kg

Source: Economic Review (2013). Cash in Bangladeshi Taka (Tk.) and food grain in Kilogram (Kg).

ii) Food Assistance: The government of Bangladesh arranges Food for Works (FFW) to generate employment in slack season in exchange of rural infrastructure development. It also provide food assistance to the vulnerable group development (VGD) programme in which extreme poor and destitute people receive a monthly allowance of 30 Kg food grains for 24 months along with 150 hours of training. The government also runs a vulnerable group feeding (VGF) programme for victims of natural disaster such as cyclones and floods. Under this programme, an affected person or household gets 10 Kg of food grain for three months following the disaster. The government has another food assistance programme called test relief (TR) which allocates food grains in exchange for rural infrastructure maintenance development. Each beneficiary gets 3.5 Kg of food grain per day for a maximum period of one-month employment in road construction and repair during the rainy season (Rahman, et al 2011; Economic Review 2013).

iii) Safety net for extreme poor: Aiming at employment generation and assets accumulation for the ultra-poor in rural areas, the government introduced 'employment generation programme for the poorest' (EGPP). Each beneficiary receives a daily wage of Tk. 120 for a 100-day employment cycle (sixty days for winter slack season and forty days for summer slack seasons) in rural infrastructure development. The Ministry of Women and Children Affairs has a 'vulnerable group development for ultra-poor' (VGDUP) for the very poor and destitute to provide financial support (Tk. 400 per month

for two years), income generating materials and livelihood training. '*Ashrayan'* is another government project for the rehabilitation of landless and homeless citizens affected by river erosion. The project includes life skills training for the poor along with credit facilities (Economic Review 2013).

Social promotion: Promotional measures aim at assisting the poor getting out of poverty through training and microfinance. Social promotion provides a springboard or launching pad for the poor to progress out of poverty. The following are examples of the government's promotional programmes for the poor:

i) Model farmhouse: The government of Bangladesh has a model farmhouse project called '*Ekti Bari, Ekti Khamar*' (model farmhouse). The project targets one million poor households from seventeen thousand selected villages across the country to convert them into effective farmhouse with credit facilities, training and other inputs such as poultry, livestock, sapling, and HYV seeds. The project also includes a matched savings instrument to encourage rural people to accumulate assets. In this instrument, each household receives an equal amount of money (1:1 matching) it has saved after maturity. Revolving loan fund, household savings and matched savings together form the total fund for the model income generating farmhouses.

ii) *Housing loan:* The housing loan fund, called *'Grihayan Tahbil'* is a GO-NGO partnership project involving 523 NGOs to disburse housing loans to poor and homeless people displaced by natural disasters. The fund discharges loans to NGOs at a flat rate of 2 percent per annum and NGOs then disburse housing loan to beneficiaries at simple rate of 6 percent repayable within ten years. More than 54,000 houses have been built across the country to date, benefitting over 270,000 homeless poor people in rural areas (Economic Review, 2013).

iii) *School stipend programme*: The school stipend programme has two allowances for targeted primary and secondary school students. The Primary Education Stipend Programme (PESP) aims at increasing enrolment, decreasing dropouts and reducing child labour in rural areas. Primary school children from families headed by i) destitute woman, ii) day-labourer, iii) low income professionals and iv) owners of less than 0.50 acres of land are eligible for PESP stipend. Under this program, a family with one student receives Tk. 100/month and families with more than one student receive Tk. 125/month. The

stipend is conditional on school attendance and performance. The Female Secondary School Assistance Programme (FSSAP) aims at increasing female secondary enrolment and discouraging early marriages (Rahman and Choudhury 2012; Rahman, et al 2011). The stipend starts at sixth grade and finishes at the end of the tenth grade, conditional on attendance, class performance and remaining unmarried until the SSC exam (equivalent to GCSE). The guardian of the female student receives cash of Tk. 100 per month for grade six to nine and TK. 200 for grade ten. Grade nine students also receive a book allowance of Tk. 500 and grade ten students are entitled to get TK 750 for the SSC exam fee (Economic Review, 2013).

4.3.2 Microfinance interventions

Apart from the government of Bangladesh, many Microfinance Institutes (MFIs) work for the welfare of the poor through financial services. This section reviews the functions of three MFIs including Grameen Bank, ASA and FIVDB those operating in the villages under study. Grameen and ASA are national level MFIs while FIVDB operates mainly in the northeast region of Bangladesh.

Grameen Bank: Grameen's microfinance has three major components: microcredit, microsavings and microinsurance. Grameen bank is the only MFI in Bangladesh that can mobilize savings independently without MRA's regulation on deposit collection. Grameen branches depend entirely on client deposits, as no fund is available from head office after a one year of grace period is over. Within this period a branch has to cross its break-even i.e. self-reliance with own fund.

i) Credit delivery system: Borrowers organize in a small group of five members. 5-8 such small groups federate into the centre, which is a place of learning, planning and implementing development decisions. A loan officer attends the centre meeting every week to link the centre with Grameen Bank. The borrower gets a small loan, repayable in weekly instalments spread over a year. There is a constant supervision of the credit by group members as well as bank staff. Special attention is paid on credit discipline and group responsibility or peer pressure. In the centre meeting, members discuss social development agenda reflected in the sixteen decisions[2] to raise socio-political awareness

[2] Grameen members have to recite a set of individual and community development commitments in the centre meeting which is called '16 decisions'.

and monitoring of social and physical infrastructure such as housing, safe drinking water, health, sanitation, education.

Grameen bank offers four types of microloans: 1) basic loan, 2) housing loan, 3) higher education loan and 4) struggling member loan. *Basic loans* are a small loan against the individual income generating activities based on the skills that the borrower already possesses. The loan size depends on the past credit history, ability of the borrower to handle the repayment and the asset base (physical assets, savings). The loan repayment schedule is in weekly equal instalments within a year. The interest rate for a basic loan is 20 percent per annum at a declining rate. Borrowers can take a *housing loan* at 8 percent per annum to build simple tin roofed shelter or repair a dilapidated house. A *higher education loan* is offered to talented children of the Grameen members for higher education (under graduate and above) which runs parallel to the basic loan. During the study period (3-5 years), no interest is charged. After the study period, the students need to repay the loan with flat rate of interest at 5 percent. *Struggling member loans* are for those who beg due to disability, blindness or willingness to beg. There is a *microenterprise* loan for entrepreneurs who run grocery shops, rear poultry and livestock, run dairy farms, or ride auto rickshaws. This loan is larger than a microloan and there is no restriction on loan rising (Grameen 2011).

ii) Savings: Grameen bank member can open three types of savings accounts: 1) personal savings account, 2) special savings account and 3) pension deposit account. There is a five percent obligatory deduction from the loan at the time of disbursement. Half of this deduction goes to the personal savings account and the rest to special savings account. In addition, there is a weekly savings, which go to personal account. A borrower can withdraw any amount from her personal account at any time. There are no restrictions on withdrawal. However, the special savings account is non-withdrawal for the first three years. Following this period, a member can withdraw from the special savings once in three years, whilst maintaining a minimum balance of Tk. 2000 or half the amount whichever is larger. In an emergency or in special circumstances, the whole amount can be withdrawn. The pension deposit account is for those who have loans amounting more than Tk. 8,000. They have to deposit a minimum of Tk. 50 per month in their pension fund. After 10 years, the borrowers receive a substantial amount, almost double the amount put into the account.

iii) Insurance: There are two types of insurance in the Grameen system: 1) Loan insurance and 2) Life insurance. The loan insurance fund is created with interest from the insurance fund in which borrowers deposit 3.0 percent of the loan taken each time. If the loan amount is same as the previous year, borrowers do not have to pay anything into the savings account. Otherwise, they pay 3.0 percent of the incremental amount. In case of the death of a borrower, her outstanding loan is paid off from the insurance fund even if the amount is large and no instalment has paid. In addition, family members of the deceased get back the amount saved in the insurance fund account. In life insurance, borrowers become beneficiary of life insurance as soon as they become shareholders of the bank. They do not pay any premium. When a borrower dies, the family receives Tk. 15000. Each year Grameen bank pays Tk. 18 to 20 million as life insurance benefits (Grameen 2012).

Association of Social Advancement (ASA): The ASA offers collateral free loan to poor women who utilize their loans for managing household finances as well as income generating activities. Its microcredit services are poor-friendly and suitable to the needs of the clients. Apart from microcredit, ASA provides microsavings, microinsurance and foreign remittance services.

i) Credit programme: Although financial services delivery occurs in a group meeting of 15-30 members in a village, there is no Grameen style group liability in ASA. Individual members are liable for any delinquency. There are three major loans: A *small loan* is the starting up loan for poor women to run income-generating activities (IGAs). A s*mall business loan* is for those who want to graduate from IGAs to small trading. *Small Enterprise Lending* is for small entrepreneurs who have the ability to expand own businesses and create jobs for others. The small loan and the small business loan are repaid in weekly instalments within a year (46 weeks) while the small enterprise loan repayment is monthly. In addition, there are two special loans: an *education loan* for the children of the ASA members for fee payments and book purchases and a *Disaster rehabilitation loan* for members affected by flood, cyclones and other natural calamities. Al1 loans are delivered at a 15 percent flat rate per annum except for the *disaster loan,* which is free of charge for an indefinite period (ASA 2011).

ii) Savings programme: The ASA offers two types of savings: 1) voluntary savings and 2) long term savings. Borrowers can save money at any time according to their ability for an indefinite period. They can withdraw their savings whenever they need. Although savings is a tool to mitigate emergencies, poor people also demand savings services for future use in relatively larger amount. To meet this demand, the ASA offers long-term savings services. Withdrawal is limited and the returns are lower if drawn before maturity.

iii) Insurance programme: Poor people are vulnerable to health risks, which may sometimes lead to the sudden death of the main earners of a family. Without financial support, these situations may lead to severe crisis. To address these situations the ASA introduces two insurance policies: life insurance and loan insurance. For life insurance, there is a weekly loan repayment category, which requires a deposit of Tk. 10 each week and a monthly repayment category, which requires a deposit of Tk. 50 per month as the insurance premiums. If a member dies, her inheritor will receive six times the total deposits. Otherwise, on the maturity, she receives deposited amount plus interest. For loan insurance, a member has to deposit Tk. 10 per thousand of primary loan or Tk. 5 per thousand of special loan as the insurance premium. If a member or her husband / guardian dies, the outstanding loan amount will be adjusted in full (ASA 2012).

Friends in Village Development Bangladesh (FIVDB): FIVDB is a local MFI providing health, education and financial services to the poor in rural areas and urban slums in the northeastern region of Bangladesh. FIVDB runs an Integrated Financial Services Programme (IFSP) that includes savings mobilization, microcredit, enterprise credit, insurance schemes and financial and technical assistance for solar home system. These are group-based programmes with major emphasis on women of disadvantaged communities. About 15-25 members form a group and receive orientation in group dynamics and financial discipline. Each member starts with a small amount of savings with at least Tk. 10 per week. It takes 4 weeks for a group to become eligible to receive microcredit. Members get small to medium microloans depending on the length of membership, group cohesion, savings behaviour and economic activities. When a certain ceiling is completed, members graduate to microentrepreneur level and become eligible for an enterprise loan.

Savings mobilization aims to develop savings habits and asset base of the rural households while *microloans* enable them to generate income and employment opportunities. *Enterprise loans* finance projects run by the microentrepreneurs such as auto rickshaw, grocery shops, cloth trading, rice and spice processing. Access to saving and credit facilities enables them to attain ownership of assets, expand businesses or establish new ventures. FIVDB also has an *insurance* programme in which clients receive loan and life insurance services. In loan insurance, if a borrower dies, the family of the deceased will receive a principal amount of the loan as insurance. In that case, a premium of 1 percent of the principal loan is taken at the source and an outstanding principal is deducted on claim. The life insurance has premium of 20 taka each year and upon completion of 10 years, clients receive Tk. 310. There is a provision of penalty payment before the maturity but no is payment is due before 5 years.

4.4 Financial inclusion in Bangladesh

Access to financial services is one of the major strategies to fight poverty and vulnerability from the policymaker's perspective as well as from grass root perceptions. There are two aspects of financial inclusion: financial provision from the supply side and financial participation from the demand side. Financial provision is a top down approach to financial inclusion that refers to the performance of financial service providers. The data for financial provision includes deposit and loan penetration in terms of geographic and demographic outreach or share of GDP. Financial provision data only reflect the accessibility of financial services, not the actual use. Financial participation, on the other hand, is a bottom up approach to financial inclusion that refers to the financial involvement of the service users.

4.4.1 Financial provision

Financial provision in terms of deposits and loan penetration, bank deposits and bank loan per 1000 population and the ratio of deposits or loan to GDP grew moderately during the 2005-2010 period (Table 4.9). However, the trend in outreach penetration indicates that access to sophisticated banking increased significantly during the period. The number of ATMs per square kilometre and per 100,000 people increased rapidly due to central bank's policy announcement for greater financial inclusion. Microfinance institutions play a significant role in including the rural poor in financial services. The number of

MFI branches per square km and per 100,000 people is significantly greater than that of bank branches (Islam and Mamun 2011).

Table 4.9 Financial provision in Bangladesh

Penetration	2005	2010
Deposits penetration		
Number of bank deposits per 1000 population	241.5	333.2
Value of bank deposits as percent of GDP	42	53
Loan penetration		
Number of bank loans per 1000 population	61.6	63.3
Value of bank loans as percent of GDP	32	43
Outreach penetration		
ATMs per 1000 sq. km	0.8	14.4
ATMs per 100,000 population	0.1	1.4
Bank branches per 1000 sq. km	18.0	22.2
Bank branches per 100,000 population	4.7	5.3
Microfinance Outreach		
MFI branches per 1000 sq. km	93.4	123.6
MFI branches per 100,000 population	9.6	12.1

Source: Islam and Mamun (2011), ATM =Automatic Teller Machine

4.4.2 Financial participation

Financial participation refers to respondents' own description about the levels and patterns of use of different financial services. The global financial inclusion database of the World Bank known as Global Findex presents a set of indicators that measures how adults (aged 15+) across the world participate in financial activities. Data sources were financial service users as opposed to service providers. Data collectors interviewed over 150,000 nationally representative and randomly selected adults in 148 countries during the 2011 calendar year. The data shows how people around the world save, borrow, make payments and manage risk. Table 4.10 and 4.11 present country data for Bangladesh and group data for advanced countries from the Global Findex dataset. Group data compares the position of Bangladesh in the financial inclusion gap between low income and advanced countries.

Table 4.10 Financial participation in Bangladesh

Use of financial services	Bangladesh	Advanced countries
Accounts at a Formal FIs (%, age 15+)		
All adults	39.6	89.4
Adults in rural area	38.5	87.0
Adults in urban area	45.9	89.0
Savings in the past 12 months (%, age 15+)		
Anywhere	26.8	58.3
With a formal FI	16.6	44.6
With group savings club	3.6	5.4
Credit in the past 12months (%, age 15+)		
From a formal FI	23.3	13.8
From family or friends	10.5	12.3
From an informal private lender	6.8	2.3

Source: World Bank (2012). Advanced countries are those with per capita Gross National Income (GNI) ≥ $12,276 in 2010 estimation by the World Bank. Bangladesh is in the group of low-income countries with per capita GNI ≤ $1,005.

Account penetration in Bangladesh is nearly 40 percent, which is less than half of the adults reported to have an account in advanced economies (around 90 percent). Account penetration varies across the residence status within the economies but the variation is less obvious in the advanced economies. While 17 percent of the adults in Bangladesh report that they save money in formal FIs for future spending and emergencies, it is 45 percent in advanced countries. Bangladesh is one of the few countries, which has a higher use of formal loans compared to other regions (23 percent compared to 9 percent in South Asia and 14 percent in advanced countries). This may reflect the broad coverage of microfinance that reaches the doorstep of the poor in both urban and rural areas of in Bangladesh (Demirgüc-Kunt and Klapper 2012).

Table 4.11 Access to and uses of financial services in Bangladesh

Use of financial services	Bangladesh	Advanced countries
Access to formal accounts (%, age 15+)		
Deposits in a typical month (% with an account)		
Bank teller	73.7	53.7
ATM	0.8	26.2
Withdrawals in a typical month (% with an account)		
Bank teller	79.2	23.3
ATM	2.8	68.7
Has debit card (%, age 15+)	2.3	61.4
Use of formal accounts (%, age 15+)		
Business purpose	5.5	24.0
Receive wage	3.1	49.5
Receive government payments	1.9	42.0
Receive remittances	3.0	13.2
Send remittances	1.2	18.1

Source: World Bank (2012). Advanced countries are those with per capita Gross National Income (GNI) ≥ $12,276 in 2010 estimation by the World Bank. Bangladesh is in the group of low-income countries with per capita GNI ≤ $1,005.

One of the indicators of frequent access to formal account is the use of ATM and other electronic payment methods (debit cards or mobile payments) which facilitate instant access to account. Adults in advanced countries report ATM as the most common mode of withdrawals (68.7 percent) whereas adults in developing economies such as Bangladesh reports most common method of withdrawals through bank tellers (79.2 percent). Over the counter deposits are common across the world but the use of ATMs is very low in Bangladesh (0.8 percent) compared to advanced countries (26.2 percent). The use of a debit card is far more frequent in advanced countries (61.4 percent) than in low-income countries (2.3 percent in Bangladesh). The majority of the respondents reported that they accessed their accounts more frequently for personal use (receiving or sending money) than for business purposes. Only 5.5 percent of Bangladeshi adults report business use of their accounts compared to 24 percent in advanced economies. Other uses of accounts follow similar discrepancies (Demirgüc-Kunt and Klapper 2012).

4.5 Financial exclusion in rural Bangladesh

4.5.1 Financial disadvantages

Financial disadvantages in a society arise from financial exclusion i.e. the market's failure in providing appropriate financial services or client's inability to participate in the financial institutions. Financial exclusion is a subset of 'social exclusion' that may simply be defined as the inability of people to participate fully in the society. However, from people's perspective, it is the inability of the society to incorporate all members into its economic, social and political activities. Social exclusion covers all aspects of exclusion and disadvantages including economic deprivation, socio-cultural discrimination and political exploitation (Chakravarty and D'Ambrosio (2003). Financial disadvantage is the most challenging aspect of social disadvantages, especially in rural areas of Bangladesh.

Income poverty and low wages: Most people in rural areas face financial hardship in daily life due to low income and the seasonal nature of employment opportunities. The rural economy of Bangladesh is agro-based in which income from agriculture is always affected by seasonality and natural calamities. The seasonal nature of agricultural activities and the gestation period between planting and harvesting time create unemployment, which farmers can overcome if alternative nonfarm activities are available. However, non-farm jobs are not easily available in rural areas. As the demand

for non-farm jobs is very low relative to the abundant supply of labours, the wage rate is very low in rural areas.

Price volatility: Rural people face seasonal variation of price i.e. low price at harvesting that is normalizing over time before reaching the peak in pre-planting season as a result of scarcity of food. There is a common perception among the farmers that they get low value for their output and incur high cost for agricultural inputs. This is because of the intermediaries and agents who exploit the intermediate prices. Rural people store food grains as saving in kind to smooth consumption and ensure food security for at least two reasons: 1) to hedge against price volatility, and 2) to avoid the risk of holding cash due to the lack of financial institutions in rural areas. If there are FIs, people may deposit sales proceeds immediately after the harvesting.

Financial access: Rural people face numerous barriers to financial inclusion. These are self-exclusion due to lack money, geographic exclusion because of distant bank branches, condition exclusion for lacking necessary documents, price exclusion in terms of higher interest rate for loans and lower rate for savings, and marketing exclusion when banks do not provide promotional services through training and advertising (e.g. Kempson and Whyley, 1999 and Kempson *et al,* 2000). For rural people, lack of money and geographic distance are *participation exclusion* as they willingly opt out of banking services for these reasons. They often complain that banks located in urban areas impose restrictions such as minimum deposits requirements or collateral for loans. Such restrictions together with price and marketing exclusion create *provision exclusion* that keeps the rural poor out of banking services. Sometimes, people show no trust in interest based banking for religious reasons and thus they opt out.

4.5.2 Rural-urban financial gap

The rural-urban gap in financial inclusion exists in both advanced and developing countries but the gap in the former is negligible. According to the Global Findex data of the World Bank, about 52 percent of the urban and 37 percent of the rural adults in developing countries have bank accounts. The percentage is 89 and 87 respectively for advanced countries. Findex data shows that only 39 percent of the rural and 46 percent of the urban adults (aged 15+) possess an account in a formal financial institution in Bangladesh (World Bank 2012). The gap arises because the banking sector concentrates

mainly in posh urban areas. However, Microfinance Institutions (MFIs) in developing counties including Bangladesh came up with the idea of working mainly in rural areas where banks do not normally go (Islam and Mamun 2011). This contributes to narrowing down the gap, if not the situation would have been worse.

Table 4.12 Urban-rural gap in financial penetration in Bangladesh

Penetration	2005		2010	
	Urban	Rural	Urban	Rural
Deposits account per 1000 persons	586.7	126.5	765.3	189.2
Loan account per 1000 persons	88.0	52.8	100.7	50.8

Source: Islam and Mamun (2011). Figures are in number of accounts.

During the period between 2005 and 2010, the number of deposits account per 1000 persons grew faster (11.91 per cent) in rural areas than urban (7.82 per cent). However, in terms of the number of loan account per 1000 persons rural areas were behind the urban (0.54 per cent and 4.41 per cent respectively) (Islam and Mamun, 2011). Microfinance Institutes (MFIs) were remarkable in providing financial services in rural areas of Bangladesh. Data released by the Microfinance Regulatory Authority (MRA) in June 2011 shows that 550 MFIs operated 17,863 branches providing financial services to more than 25 million clients of whom 95 per cent are women. They were operating in rural areas where banking services were less available (Islam and Mamun 2011).

To sum up, this chapter portrayed an overview of livelihoods dynamics in Bangladesh including vulnerability context, household strategies and external interventions. Using secondary data, the chapter reflected on poverty and vulnerability profiles of the country and highlights coping strategies and GO-NGO interventions. In the end, it reviewed the status of financial inclusion in Bangladesh. It is obvious from the data that there are gaps in urban and rural financial interventions in the country. Despite various steps to include rural people in financial activities, inclusion gaps are still visible. This study focuses on northeastern part of the country to investigate this issue. Subsequent chapters discuss the livelihood context and financial inclusion interventions in two villages (*Ausha* and *Bhadeshwari*) of the region.

5. Livelihood context in *Ausha* and *Bhadeshwari*

This chapter analyses livelihood contexts of *Ausha* and *Bhadeshwari*, within the sustainable livelihoods framework. The livelihood context includes livelihood assets, vulnerability context and household strategies. The subsequent chapters examine the nature of household strategies and effectiveness of institutions in details.

5.1 Basic characteristics of household heads

The household head is the centre of a family and main income earner. He or she organizes the household, maintains its discipline and plays a key role in household strategies. The strength of a household depends on the capability of the head reflected in demographic attributes such as age, gender, education and employment status. Bangladeshi society is patriarchal. Female-headed households are rare and situational on sudden death of husband or divorce. If there is a son of a female-headed household, when he grows and starts earning, the family responsibility is handed over to him by tradition. Until then, the female-headed household faces hardship and livelihood insecurity unless she obtains social protection.

Table 5.1 Basic characteristics of household heads

Characteristics	***Ausha*** (N = 226)	***Bhadeshwari*** (N = 217)
Age (average)	48.2	44.5
Sex		
Male	96.0	93.5
Female	4.0	6.5
Education		
Illiterate	78.3	93.6
Primary	12.4	6.0
Secondary (SSC and HSC)	5.8	0.0
Higher education	3.5	0.4
Employment		
Agriculture	38.1	24.0
Small trading	6.2	18.4
Services	15.0	7.4
Day labour	8.4	39.2
Migration	19.0	4.6
Unemployed	13.3	6.4

Source: Author's survey, 2013. SSC is Secondary School Certificate exam after tenth grade (equivalent to GCSE). HSC is Higher Secondary Certificate exam after twelfth grade (equivalent to A' level). Higher education includes graduate and postgraduate studies at university level. Literacy rate is the percentage of population who can write a letter. All figures are in percentage except for age, which is in average years.

Most of the household heads in both *Ausha* and *Bhadeshwari* are illiterate (according to BBS (2010), the literate are those who can write a letter). However, they are able to write their names and some are able to read newspaper headlines. They reported that they learned this from community learning programme run by a local NGO named FIVDB. The household heads in *Ausha* were found to be more literate than household heads in *Bhadeshwari* (Table 5.1). In the case of employment, about a third and a quarter of the household heads in *Ausha* and *Bhadeshwari* respectively are employed in agriculture (38.1 and 24.0 percent). Household heads in *Ausha* have more non-farm jobs in the service sector (15.0 percent) and international migration (19.0 percent). In *Bhadeshwari*, they are more engaged in day labour (39.2 percent) and small trading (18.4 percent).

5.2 Household assets

In the sustainable livelihood framework, five major assets including human, physical, natural, financial, and social capitals together make up the assets pentagon for a household's livelihood (DFID 1999).

5.2.1 Human capital

The human capital at a household level refers to the quality of its members in terms of skills, knowledge, experience and health conditions. The effectiveness of household strategies largely depends on the quality of the human capital. Household human capital has both quantitative and qualitative dimensions: the quantitative part is captured by the composition of the household and the qualitative part is measured by educational level and employment status of the household members.

Household size: the average size of the households is almost equal in the sample villages (6.2 for *Ausha* and 6.6 for *Bhadeshwari*) which is a slightly larger than the national average (4.5 for rural and 4.4 for urban (HIES 2010 p. 9)). However, nearly sixty percent of the households in *Ausha* and *Bhadeshwari* have more than six family members. Larger households contain more than one generation under the same roof and follow the orthodox system of family formation in which a daughter joins her husbands' family and a son brings his wife to his parent's residence after the wedding. In both cases, the bridegroom remains in the parents' home with his bride until the decision for splitting household is taken either by the couple or by parents on mutual agreements.

Table 5.2 Household size by residence in *Ausha* and *Bhadeshwari*

Household size	*Ausha*	*Bhadeshwari*
Average HH size	6.2	6.6
Percentage of HH by size		
1-2	7.1	8.7
3-5	35.8	32.2
6+	57.1	59.1

Source: Author's survey, 2013

The main reason for a large household in rural areas is labour intensive agricultural farming. Household members contribute to common crop production, share single food storage and use a common kitchen. They take care of each other and provide food and shelter for children, the old, disabled and unemployed members. In joint families, the father remains the household head as long he is the main earner and decision-making authority. The household splits when children start earning substantially to run a family independently or the household becomes too large to accommodate all under a single roof. Sometimes, after separating cooking and dwelling arrangements, they continue to share common farmland until the household head willingly distributes the land among the members or land is distributed under inheritance law following the death of household head. However, the process of splitting a household remains slow and the number of nuclear families is small in both villages - less than ten percent of the households.

Literacy rate: The literacy rate is defined as the head count of 'population 7 years and above' who can write a letter, and is expressed as a percentage of the population. It indicates people's ability to read or write. The level of education, on the other hand, measures the depth of education in a specific area. Both indicators measure the status of human capital in the sample villages. The literacy rate in *Ausha* (46.5 percent) is similar to the national rural average of 53.4 percent (HIES 2010) but the rate in *Bhadeshwari* is significantly low (22.3 percent). In both areas, the gender gap in literacy rate is obvious. Ninety percent of the population in *Bhadeshwari* who are above 5 years of age either never attended school or did not complete primary school. This category includes current primary school students. This rate is very high relative to the rural average of 49.6 in Bangladesh (HIES, 2010). The rate is significantly high for *Ausha* as well (69.3 percent). Secondary education is significantly low compared to the national average, and higher education is negligible in both villages.

Table 5.3 Literacy rate and level of education

Literacy rate / education level	Percentage	
	Ausha	***Bhadeshwari***
Literacy rate (7 years and over)		
Both sexes	46.5	22.3
Male	47.3	25.4
Female	45.9	19.1
Level of education (5 years and over, both sexes)		
Never attended or did not complete primary	69.3	90.1
Primary	23.2	8.5
Secondary (SSC and HSC or equivalent)	5.8	0.8
Higher education	1.7	0.6

Source: Author's survey, 2013. SSC is Secondary School Certificate exam after tenth grade (equivalent to GCSE). HSC is Higher Secondary Certificate exam after twelfth grade (equivalent to A' level). Higher education includes graduate and postgraduate studies at university level. Literacy rate is the percentage of population who can write a letter.

Occupation: Household survey data show two major occupation categories in *Ausha* and *Bhadeshwari*: self or wage-employed and unemployed including homemakers. It is interesting to note that less than fifty percent of adults are engaged in employment and thus more than fifty percent is either engaged in household work or do not work at all. Homemakers are mainly adult females in the households. Though they comprise fifty percent of the adult population, around forty percent carry out household work as their main occupation. The rest are either employed in other sectors or do not work. The unemployed community includes elderly and disabled people and those who are reluctant to work.

Table 5.4 Employment status of 15+ years who do not attend school

Main occupation	Percentage of population	
	Ausha	***Bhadeshwari***
Self- or wage employment	**45.2**	**46.3**
Agriculture	15.9	10.0
Small trading	3.1	8.1
Services	10.4	7.3
Day labour	2.8	16.8
Labour migration	13.0	4.1
Non-wage employment or unemployment	**54.8**	**53.7**
Household work	42.9	38.1
Do not work	11.9	15.6

Source: Author's survey, 2013. Agriculture includes crop, fisheries, and livestock; small trading includes grocery shop, mobile trader (*feriwala*) who goes door to door for selling goods; services include carpentry, rickshaw pulling, taxi driving and other services. People migrate to take salaried job in the city or abroad.

People in *Ausha* are more engaged in agriculture and services (15.9 percent and 10.4 percent) compared to *Bhadeshwari* (10.0 percent and 7.3 percent). This is because the agricultural land in *Ausha* is bi-harvest for rice cultivation with vegetable growing in between, whereas farmers in *Bhadeshwari* can only produce a single crop a year. More service jobs are available in *Ausha* as it is closer to Sylhet city, only 12 kilometres away.

The Sylhet-*Sunamganj* highway runs through the village, which is a prosperous for taxi drivers. On the other hand, *Bhadeshwari* is about 40 kilometres away from the city with nearly equal distance from Sunamganj town. A five-kilometre link road from the village to the highway creates job opportunities for rickshaw pullers who help passengers reach the highway. To compensate their lower income from agriculture, *Bhadeshwari* people diversify their income through non-farm activities such as small trading or day labour. They run grocery shops in rural markets nearby. People in *Ausha* are more interested in job searching outside the village and even outside the country (13.0 percent). Households with one or more international migrants often receive remittances regularly or in emergency and tend to live a good standard life.

Demographic Ratios: Demographic ratios indicate the strength of households. Dependency ratio refers to the ratio of the population in non-working age groups (0-14 and 60+) to the population in the working age group (15-59). The sex ratio is the number of men per hundred women. Similarly, child-women ratio refers to the number of children under five (0-4) per thousand women aged 15-49. The dependency ratios in both villages (99.2 for *Ausha* and 104.5 for *Bhadeshwari*) are significantly higher than the national average of 77.7 percent for rural areas (HIES, 2010). This indicates low earning capacity of the households. Lower sex ratio in *Ausha* reflects the high male migration to abroad. The child-women ratio in *Bhadeshwari* (609 children per thousand women) is significantly higher than the nationwide rural average of 411. This indicates a high fertility rate leading to low female participation in economic activities. The situation of *Ausha* is consistent with the rural average of Bangladesh.

Table 5.5 Age composition and demographic ratios

Age group / demographic ratio	Percentage / Ratio	
	Ausha	***Bhadeshwari***
Age group		
0-14	41.6	44.9
15-60	50.2	48.9
60+	8.2	6.2
Dependency ratio	99.2	104.5
Sex ratio	94	103
Child-women ratio	461	609

Source: Author's survey, 2013 and BBS (2012). Age group contains percentage of population in both sexes.

5.2.2 Physical capital

Physical capital refers to infrastructure including housing condition, water and sanitation facilities, and access to technology that creates a physical environment for livelihood activities. It includes productive assets such as livestock, land, machineries, and tools. Physical assets also include non-productive assets such as furniture, jewellery, and electronic equipment.

Housing condition: The housing condition reflects the standard of living. The household survey identified four common types of housing structures in the two villages. 1) *Pucca* or buildings with walls made of bricks and a roof made of cement and steel rods, 2) semi *pucca* or buildings with walls made of bricks and roofs made from corrugated iron (CI) sheets, 3) *katcha* structures with wall made of non-durable materials such as mud/jute stalks/straw/bamboo and roof made of CI sheet. Sometimes it is other way round i.e. walls made of CI sheets or wood/clay bricks, and a roof made of straw and bamboo, and 4) *Jhupri* structure with all non-durable materials such as straw, polythene, sack, wicker, tree leaf and bamboo.

Table 5.6 Type of dwelling in *Ausha* and *Bhadeshwari*

Types of dwelling	Percentage of households	
	Ausha	***Bhadeshwari***
Pucca	35.9	4.6
Semi pucca	24.3	8.2
Katcha	38.2	80.4
Jhupri	1.6	6.8

Source: Author's survey, 2013. '*Pucca'*, '*Katcha'* and '*Jhupri'* are Bangla words often used by rural people to describe their housing condition. '*Pucca'* is something permanent, solid and concrete; '*Katcha'* means non-permanent, made of mud not of brick or stone, and '*Jhupri'* refers to very small and temporary cottage.

In both villages, the existence of '*katcha'* structures dominates other forms of housing as the construction cost of these is within the capacity of the poor. The chronic and transitory poor usually live in these houses. The significantly greater number of '*katcha'* houses in *Bhadeshwari* (80.4 percent) compared to *Ausha* (38.2 percent) indicates that more poor people live in the former area. '*Jhupri'* houses are made of very cheap and readily available materials and often resided by the ultra-poor and destitute. These are also more visible in *Bhadeshwari* (6.8 percent). '*Semi pucca'* and '*pucca'* houses are more visible in *Ausha* (24.3 percent and 35.9 percent) compared to *Bhadeshwari* (8.2 percent and 4.6 percent). The moderately poor and non-poor people live in theses residences. The PRA exercises and discussions with respondents revealed that people graduate from '*katcha'*

to '*semi-pucca'* and '*pucca'* houses following a gradual increase cash flow in their households especially when an immediate family member migrates to a foreign country. Households receiving regular remittances own most of the 'pucca' houses in both villages.

Access to safe drinking water and sanitation: Access to safe drinking water and sanitation is one of the indicators of a household's strength in combating health and hygiene risks. Discussions with villagers revealed that they are well aware of the importance of safe drinking water. Both the villages are on the banks of a river or canal and thus unsafe water is easily available. However, they were found not to use unsafe water for drinking (except for a negligible few). They used river or canal water for bathing and washing. Tube-well water was the most popular source of safe drinking water in both villages. More than 95 percent of the households used this source for drinking. In *Ausha,* a few households had a tap water system (3.9 percent). In this system, water is lifted to reserve tank on the roof by a motor pump that flows down to the bathroom and kitchen through pipe. Only rich people in rural areas can afford this.

Table 5.7 Access to water and sanitation

Drinking water and toilet facilities	Percentage of households	
	Ausha	***Bhadeshwari***
Sources of drinking water		
Tap water	3.9	0.3
Tube-well	95.7	99.5
Other (pond/river/canal)	0.4	0.2
Toilet facilities		
Pucca toilet (water sealed)	41.5	7.5
Pucca latrine (not water sealed)	26.3	3.6
Katcha latrine (temporary)	32.1	69.8
Open space	0.1	21.1

Source: Author's survey, 2013. Pucca toilet has water sealed and unexposed sewage system and ceramic commode or pan. Pucca latrine without water sealed drainage system uses cemented ring and slab to make earth hole permanent. It has cement made commode. Katcha latrine is a temporary toilet using only bamboo stick on earth hole. Open space has no structure at all – indigenous lavatory behind the bush or in the dark.

Four main types of toilet facilities were found in both villages. *Pucca toilet (with water seal)* has hygienic disposal of sewage, washing facilities and lavatory pan. It is the most hygienic and safe among the available facilities. However, its building material is costly and thus only rich people can afford this. More than forty percent of the households in *Ausha* use this type of toilet. *Pucca latrine (without water seal)* is made by digging a trench or a hole in the earth and setting a cement made ring and slab pan to make it

permanent. It is relatively less costly and easy to build but its drainage system is less hygienic. *Bhadeshwari* is far behind *Ausha* in the hygienic use of toilet facilities (7.5 percent and 3.6 percent compared to 41.5 percent and 26.3 percent). Most of the people (69.8 percent) in *Bhadeshwari* use an unhygienic *'katcha'* (temporary) latrine made by an earth hole covered by bamboo sticks and a 'jhupri' type fencing. The most unhygienic, *open space* toileting is also significant in the *Bhadeshwari* village (21.1 percent). *Open* and *katcha* latrines are almost costless but bear severe health risks as they are exposed to contagious diseases like diarrhoea and dysentery. The extreme poor use these unhygienic systems. The unhygienic use of toilet facilities makes the *Bhadeshwari* residents more vulnerable than *Ausha*.

Land ownership: Landownership is an important measure of household status in rural areas. It also indicates the level of endowments and strength of households confronting crises. The majority of the households in *Bhadeshwari* own less than 0.5 acres of land (58.1 percent) and another 15.7 percent are absolute landless. These two groups are generally considered as eligible clients by the MFIs. The percentage of eligible clients in *Ausha* is comparatively low (4.9 percent landless and 29.2 percent with land less than 0.5 acres).

Table 5.8 Percentage of households by size of land in *Ausha* and *Bhadeshwari*

Land size (in acre)	*Ausha*	*Bhadeshwari*
Landless	4.9	15.7
0.01-0.49	29.2	58.0
0.50-2.49	41.6	21.2
2.50-7.49	21.2	4.6
7.50+	3.1	0.5

Source: Author's survey, 2013. Only legal ownership of land is considered here. It includes land under own cultivation and lease-out land but excludes lease-in lands. Number of households, N= 226 in *Ausha* and 217 in *Bhadeshwari*.

The number of households with more than 0.5 acres of land is significantly more in *Ausha* (65.9 percent) than in *Bhadeshwari* (26.3 percent). The reason behind this is simple. The number of international migrants from *Ausha* is higher than *Bhadeshwari*. A common drive among the expatriates is to buy land and build or renovate their accommodation. The motivation starts from the idea of compensating the sale of land for mitigating migration costs. It then gradually becomes a symbol of status and pride.

Access to Technology: Access to technology is another indicator that reflects the standard of the living gap between the two villages. Among the life enhancing technologies, land phones and computers are almost absent in both villages. During the survey, it was observed that people are very enthusiastic about replacing kerosene lamps and lanterns with solar panels. They argued that if someone installs solar panels at home through loan purchase, the repayment amount account for more or less same as fuel cost in conventional methods. MFIs working in these villages provide loans for installing solar panel system. Owning a mobile phone is another device that rural people showed an interest in. Every six out of ten households *Bhadeshwari* have at least one mobile phone. In *Ausha*, the rate is even higher: eight out of ten.

Table 5.9 Access to technology in *Ausha* and *Bhadeshwari*

Home appliances	Percentage of households	
	Ausha	***Bhadeshwari***
Electricity (including solar panel)	65.4	17.0
Land phone	0.0	0.0
Cell phone	82.2	61.8
Computer	0.2	0.0

Source: Author's survey, 2013

The use of electricity and mobile phones is growing in both villages, but it is still less than national average (HIES 2010). However, people in *Ausha* use more electricity and mobile phones than the national rural average of 42.5 percent and 56.8 percent respectively, while *Bhadeshwari* residents remain behind the countrywide rural average in electricity consumption (17.0 percent) but slightly ahead in mobile phone use (61.8 percent). The higher use of mobile phones indicates a potential mobile banking opportunity in these areas.

5.2.3 Natural capital

Natural capital or assets include environmental and natural resources in which a household gains access to explore resources that enhance livelihood. Marshlands, lakes, forests, grazing land, and wildlife are examples of natural assets. The residents of *Ausha* and *Bhadeshwari* illustrated their access to natural resources through PRA exercises such as village transect and mobility map.

Access to water resources: *Ausha* is situated on the banks of the river Surma that is one of the two prominent rivers in Sylhet. *Surma* and *Kusiara* flow through the division and finally join to form *Meghna* that falls into the Bay of Bengal. The residents of *Ausha* use river water for irrigation, bathing cattle, washing kitchen utensils, dishes and even for drinking. Very few poor people (0.4 percent) reported that as they did not have access to pure drinking water or as pure water source is too far, they used river water. "It is abundant in the nature; you do not bother to ask water from the rich." They know that it is unhygienic to drink from open water but they said, "We do not have enough money to invest in a tube well. Those who live near a tube well of a rich are lucky." However, they often boiled water before drinking. There is no fishing community in *Ausha*. Professional anglers living in neighbouring villages catch fish in the river to sell them in the market. *Ausha* inhabitants occasionally catch fish. *Bhadeshwari* village is situated on the bank of a canal that connects two rivers *Surma* and *Dahuk*. A small *haor* named *Kuri Beel*, situated near *Bhadeshwari*, is a source of fishing and water resources for the adjacent villages. During the monsoon, when agricultural lands go under water for several months and no farm activities are available, anglers from the village catch fish in groups and sell them in markets nearby. They also catch fish in the canal. Canal water is used for irrigation in winter.

Cooking fuel: Poor villagers collect dead leaves, stems from trees and process cow dung for firing household cooking. The alternative would be to buy firewood from the market, which only the middle classes and the rich can afford. Some rich inhabitants in *Ausha* buy gas cylinders for cooking and hope that they will get pipeline gas from the city in near future. In *Bhadeshwari,* an interesting thing was observed during the data collection. About 1.5 kilometres away from the village there is a place where coal mud is available just 1 meter underground. Poor people collected the coal mud, dried it in the sun, used it for fuelling their cooking and sold the surplus to other villagers. Though this can be seen as an extra income source for the poor, it is a hazardous scheme. Those who are involved in the job complained that they suffered from respiratory problems. Uncontrollable heat from the fuel causes gradual decay of the cooking utensils. The users also felt that fumes from the fuel might have health risks but they use it because it is relatively cheaper than other fuel.

5.2.4 Social capital

Social capital in the form of social networking, community participation, adherence to social rules and cultural norms, mutual trust and reciprocity is important for sharing risks and exchanging views and ideas. In the livelihood context, social resources are useful external supports to household strategies to reduce vulnerabilities and enhance human securities. From a household perspective, social capital implies relationships with family, friends, neighbours, and membership with informal and formal organizations. Social relationship reinforces stronger social ties than the institutional membership as the former is less costly (sometimes zero) and the latter is rule based. The survey results showed that because of strong network, households in *Ausha* depended more on social relationships than on memberships with formal or informal organizations. For example, for any credit need, they first approached to friends for *hawlat* (zero interest loans). Then they sought help from the rich who also offer zero interest loans. In focus group discussions, respondents pointed out that creditors usually never charge interest on borrowing. By contrast, residents in *Bhadeshwari* were found to depend more on organizational networks (formal or informal) as the social network was weak. The reason behind the difference between the two villages is twofold: 1) land is mono-harvest in *Bhadeshwari* but bi-harvest in *Ausha* and therefore agricultural output is less in the former village, 2) *Ausha* has more labour migrants than *Bhadeshwari* and thus *Ausha* gets more remittances. Thus, residents of *Bhadeshwari* are low-income and credit constrained compared to those of *Ausha*. A weak social network compelled the *Bhadeshwari* people to go for more costly informal borrowing as access to formal sources is inadequate.

People in *Ausha* have strong inclinations to sociocultural norms. They trust *shalish* (rural informal court) for mitigating social conflicts. *Shalish* comprises senior citizens who are capable of resolving social problems and maintaining unity. Focus group discussants argued that because of strong social ties, antisocial incidents were low - almost nil in *Ausha*. The situation is slightly different in *Bhadeshwari*. In focus group, discussants recalled how a collective resistance to a gang of thieves reduced burglary in their village. However, because of weak social ties, some conflicts among the villagers went beyond the control of *shalish*. One of the respondents in the household survey described how her family became homeless because of her son was sent to jail by the district judge for a murder case.

5.2.5 Financial capital

Households have two main sources of financial capital: 1) *stocks* in liquid (such as demand deposits), semi-liquid (such as time deposits, livestock, jewellery), and illiquid assets (such as land) and 2) *flows* such as cash inflows from income, remittances, pensions or government transfers. People need financial capital to smooth household spending and run business activities. The strength of household strategies largely depends on the value of financial instruments such as loans, savings, insurance and remittances. Risk exposure and lack of financial access may reinforce each other leading to financial crisis in the households. Table 5.10 shows that the average amount of informal savings (*matir* bank, *musti chal*) was higher in *Bhadeshwari* than *Ausha*. The reason explained by the respondents was simple. People save money when they are credit constraint resulting from narrow income sources and high interest rate for informal credit.

Table 5.10 Financial assets reported by residents of *Ausha* and *Bhadeshwari*

Financial assets	Household average (monthly)		
	Extreme poor	Poor	Non-poor
Ausha			
Informal savings (under the mattress, *matir bank*)	87	127	142
Savings in kind (*musti chal*, livestock, tree, jewellery)	4393	6239	12675
Grain storage (month equivalent)	1-5	5-8	12-15
Institutional savings (MFIs, Banks)	4578	6542	16765
Informal loan (friends and family, moneylender)	6873	5632	955
Institutional loan (MFIs, Banks)	5643	6750	12098
Remittances	1265	1765	15437
Others	845	1065	1436
Bhadeshwari			
Informal savings (under the mattress, *matir bank*)	168	194	267
Savings in kind (*musti chal*, livestock, tree, jewellery)	4679	6653	10563
Grain storage (month equivalent)	0-3	3-6	8-12
Institutional savings (MFIs, Banks)	3862	5414	12623
Informal loan (friends and family, moneylender)	4852	5823	1355
Institutional loan (MFIs, Banks)	4389	5439	19087
Remittances	1354	1509	9384
Others	785	946	1290

Source: Author's survey, 2013. All figures are in Bangladeshi Taka (BDT) except for the food storage. Food storage is in month equivalent i.e. for how many months they do not have to buy food grain from the market. *Musti chal* is converted into cash at market price. Institutional savings, savings in kind and formal and informal loan amounts are in outstanding balance.

Residents of *Ausha* are not liquidity constraint, as they have *karde hasanah* type of low or zero cost loan facilities from informal sources (friends and family) and cash flow from foreign remittances. The average amount of institutional or informal loan was higher in *Ausha* than in *Bhadeshwari*. The main source of financial assets in *Ausha* was remittances from abroad. When rural people talk about crop production, they usually mean how many

month-equivalents of grains they have store in their household silo i.e. for how many months they do not have to buy food grain (mainly rice) from the market. Month-equivalent of grain store is an indicator of food security and household poverty.

5.3 Vulnerability context

Vulnerability context in the sustainable livelihood framework describes an environment where lives are surrounded by risks and uncertain events. The context is more prominent in rural areas as people face higher incidence of health and environmental hazards. Infectious diseases such as pneumonia, tuberculosis and malaria are still prevalent. Pests and weeds affect agricultural productions every year. Birds and rats damage crops and food storage. Using pesticides is even more hazardous to health and the environment. Floods, droughts, and lack of agricultural inputs often cause crop failure. Most rural enterprises are undercapitalized due to a lack of support from financial institutes. As rural wage employment is seasonal and temporary, and the unemployment risk is quite high, which brings about income instability. Macroeconomic shocks like inflation affect rural people through rise in input price and cost of living (Fafchamps 1999). The vulnerability to repeated shocks causes poor people to remain below the poverty line chronically. Large shocks such as floods and droughts have damaging effects on rural income and assets what Sen (1981) called entitlement failure. In short, rural people live in a risky environment in which they continuously struggle for survival. Following sections illustrate vulnerability profiles of the two villages – *Ausha* and *Bhadeshwari*.

5.3.1 Risks, shocks and stresses

Life is subject to a wide variety of risks. A risk may be defined as the probability of the occurrence of shocks and stresses which are either natural (flood, illness, and death) or manmade (inflation, violence, and unemployment). A risk can be idiosyncratic i.e. not correlated among individuals (illness, accident, theft), covariant or collective (correlated such as droughts, epidemics). When correlated they can be repeated (correlated over time) or bunched (correlated with other risks). Risks can also be classified according to their frequency and severity: catastrophic risks are low frequency risks with severe welfare effects (cyclone) and non-catastrophic risks are frequent but less severe (e.g. minor illness). The household surveys, PRA exercises and group discussions elucidated a snapshot of the risks in rural livelihoods, which summarised in the following table.

Table 5.11 Risks and shocks reported by the residents of *Ausha* and *Bhadeshwari*

Risks and shocks	Percentage of households		
	Extreme poor	Poor	Non-poor
Ausha			
Minor illness (flu, headache, fever, cough, diarrhoea)	86.3	79.5	48.6
Major illness (asthma, blood pressure, diabetes)	29.7	24.1	38.3
Death, disability or accidents of income earner	12.6	6.8	2.6
Crop loss, livestock diseases, pests, rats	37.1	56.9	65.4
Loan default	64.2	46.7	5.6
Price hike	78.9	72.4	32.7
Natural disaster (flood, drought, cyclone)	7.8	5.3	1.9
Conflict and violence	13.4	2.1	0.8
Others	43.9	38.6	21.7
Bhadeshwari			
Minor illness (flu, headache, fever, cough, diarrhoea)	93.2	87.3	65.8
Major illness (asthma, blood pressure, diabetes)	28.1	22.5	33.3
Death, disability or accidents of income earner	31.4	16.2	9.8
Crop loss, livestock diseases, pests, rats	27.6	61.8	46.6
Loan default	83.6	74.3	3.8
Price hike	87.9	65.4	22.7
Natural disaster (flood, drought, cyclone)	17.7	13.4	11.4
Conflict and violence	41.5	34.9	10.5
Others	45.7	26.4	24.5

Source: Author's survey, 2013. Percentage does not add to hundred for multiple report of risk by the households.

Reclassification of risks: During household surveys and FGD discussions, villagers illustrated various types of crises they face (reported in Table 5.11). They classified these crises simply in three broad categories in their own language *chhoto* (small), *majhari* (medium) and *borho* (large).

1) *Chhoto* (small or micro) crises: that can be mitigated by self-compensation such as microsavings. Minor health problems such as flu, colds, fever, minor injury by accident, children's demand for pocket money in school, and temporary food shortage at home are examples of micro crisis.
2) *Majhari* (medium or meso) crises: that can be minimised through network compensation such as loans from friends, moneylenders or MFIs. Examples are death of main income earners, land disputes, and crop failure.
3) *Borho* (large or macro) crises: that can be moderated or alleviated by institutional compensation such as GO/NGO relief, aid and grants. Big crises are community crises like flood, cyclone, and epidemic disease.

People classified crises into micro, meso and macro based on the magnitude of risks and mode of resilience. However, they also classified crises based on uncertainty of occurrence: 1) *Anticipated* such as children's education and marriage, chronic disease and 2) *Unanticipated* such as crop failure, sudden death of the main income earner, cyclones. They considered the first category as crisis because it required planned action (e.g. mobilization of savings) without which they might face crisis such as a high interest loan from a moneylender. In FGDs, respondents discussed how they could manage these crises. In their opinion, they had the potential capacity to build strong resilience against small and medium (micro and meso) crises at a personal, household and community level. They used various coping strategies including formal and informal financial instruments such as microloans and microsavings. However, they argued that they had weak adaptation abilities for large (macro) crises as microfinance was insufficient and GO/NGO intervention was inadequate.

5.3.2 Trends and seasonality

In the seasonal calendar, villagers identified seasonal characteristics in their income and employment. In focus group discussions, they recalled major crises events in their lives. The most recent event was the political turmoil that started at the end of 2012 and continued throughout 2013. Data collection of this study was held during February to April 2013 in between the *hartal* days. *Hartal* is the most used political demonstration against the government in Bangladesh. Economic, business and social activities of the whole country stand still as people are forced to remain at home in order to protect themselves from the threat of any violence. No transport facilities are available, no production lines are open, and people carry out official jobs at their own risk. The prices of essential goods are exceptionally high due to the supply disorder. Although the political demonstrations concentrate in the city areas, they have serious consequences on rural lives. No sales of agricultural products and no purchases of daily necessities in *hartal* make life very challenging. An anxious respondent said, "In yesterday's *hartal* my husband could not go out for earning. Therefore, my loan instalment at Grameen is in default. I don't know if I can compensate it next week". The political unrest continued until the end of January 2014.

Respondents recalled recent uneven rainfall in 2012 that caused crop failure in both *Ausha* and *Bhadeshwari*. Some of the respondents argued that this type of *khora* (minor drought due to uneven rainfall) comes every 2-3 years. In these circumstances, agricultural

production comes down to low level and food stocks sometimes fall below the survival level. This situation occurs more prominently in *Bhadeshwari*, as it is a mono harvest low land area. Agricultural land in this village normally remains under water for about 3-5 months during the monsoon season. The remaining 7-9 months are risky for the farmers in two ways: extended floods due to heavy rainfall from the monsoon season, and shortened water body for irregular or no rainfall. The former incident may cause late plantation, the latter case may result in dry land, and both events cause low crop production. Respondents in both the villages recalled the two great floods of 1998 and 2004, and a relatively less severe one of 2007. Most of them could also recall the 1988 flood, but only elderly respondents could remember the great famine of 1974 that hit the entire Bangladesh.

5.3.3 Vulnerability to poverty

Measurement of poverty: The study used a qualitative method for poverty measurement in the two villages. At first, PRA respondents identified wealth-ranking criteria for the households using their own poverty scale. They used three local terms to label household's wealth status such as *Khub gorib* (extreme poor), *Gorib* (poor) and *Dhoni* (rich or non-poor). Finally, the respondents sorted all households into the village in three poverty groups (see Appendix A1.3 for wealth ranking procedure). Poverty rates are the percentage of households in each group. Table 5.12 shows the poverty comparison in *Ausha* and *Bhadeshwari*. The incidence of poverty is almost identical for the poor group in both villages but different in the other two groups. The head counts of the extreme poor and non-poor are considerably higher and lower respectively in *Bhadeshwari* than that of *Ausha*.

Table 5.12 Poverty head counts in PRA wealth ranking estimates (in %)

Poverty group	***Ausha***	***Bhadeshwari***
Extreme Poor	12.4	32.7
Poor	26.5	25.8
Non-poor	61.1	41.5

Sources: PRA wealth ranking exercises. The number of households, n = 226 and 217 for *Ausha* and *Bhadeshwari* respectively

Measurement of vulnerability: The study used a quantitative method for measuring vulnerability in the two villages. It employed a very simple, 10-question poverty scorecard (PS) to collect highly sensitive poverty correlates data from sample households.

The household score was then converted into poverty likelihood through the poverty index developed by Schreiner (2013). Poverty likelihood is simply the probability of the poor household to remain under the poverty line or of the non-poor to fall below the line. It is used as a proxy estimator of vulnerability for a given group (see Appendix A for estimation procedure). Table 5.13 reports the percentage of people who are vulnerable in each poverty group. As expected, it evident from the table that the poor are more vulnerable than the non-poor in both villages. Within the poor category, the extreme poor are most likely to remain below the line in both areas. However, it is obvious that people in *Bhadeshwari* are more vulnerable to poverty compared with those in *Ausha* in all poverty groups.

Table 5.13 Vulnerability profiles of *Ausha* and *Bhadeshwari*

Poverty group	***Ausha***	***Bhadeshwari***
Extreme Poor	82.9	91.4
Poor	45.7	62.9
Non-poor	5.7	51.4

Villagers used wealth-ranking exercise to identify poverty group. Vulnerability is calculated using poverty scorecard (PS) estimates and poverty index developed by Schreiner (2013).

The degree of vulnerability can be estimated by using certain thresholds (Rajadel 2002; Chaudhuri, Jalan and Suryahadi 2002). I used two thresholds in this estimation: relative and stringent. In the former case, I considered the poverty headcount below the upper poverty line for rural Sylhet (i.e. 0.31) as the threshold for low vulnerability. I used conventional 0.50 as the stringent threshold for high vulnerability (Chapter 2, section 2.2 discussed on probability threshold). Poverty likelihood below 0.31 indicates non-vulnerability, between 0.31 and 0.50 specifies low vulnerability and above 0.50 shows high vulnerability. The poverty-vulnerability matrix (Table 5.14) indicates that the extreme poor are most vulnerable in both villages and the condition of the *Bhadeshwari* residents is worse relative to *Ausha*. Considering the overall degree of vulnerability at a village level, it is evident that percentage of households with high and non-vulnerability is relatively higher than that with low-vulnerability in both villages.

Table 5.14 Poverty - Vulnerability matrix for *Ausha* and *Bhadeshwari*

	High vulnerable (HV)	Low vulnerable (LV)	Non-vulnerable
Ausha			
Extreme Poor	74.3	8.6	17.1
Poor	28.6	17.1	54.3
Non-poor	0.0	5.7	94.3
Overall	**34.3**	**10.5**	**55.2**
Bhadeshwari			
Extreme Poor	80.0	11.4	8.6
Poor	45.7	17.2	37.1
Non-poor	40.0	11.4	48.6
Overall	**55.2**	**13.4**	**31.4**

Vulnerability is calculated by taking poverty likelihood (%) as proxy. Thresholds for high and low vulnerability are 0.50 and 0.31 respectively. Chapter 2 discusses choice of threshold.

The chapter analysed the livelihood context of *Ausha* and *Bhadeshwari* focusing on household assets and vulnerability situation. The condition of *Ausha* is better because of its relatively affluent livelihood opportunities. Residents of *Bhadeshwari* are more vulnerable due to lower assets ownership and limited income opportunities. Their limited capacities make them strategically weaker in confronting crises and utilising external support. Comparative analysis of two villages suggests that there might be a close link between the capacity to combat crises and access to external support such as financial instruments. To examine this issue, next chapter focuses on livelihood strategies including a household's coping capacity and effectiveness of the external interventions. Chapter 7 concentrate on the core theme of the research – financial inclusion intervention.

6. Livelihood strategies: coping capacity and resilience building

This chapter investigates the livelihood strategies of the residents of two villages under study. The strategies include income generating activities, coping capacity and resilience building in the context of vulnerability to risks. Coping capacity is the strength or ability of a household or community to manage risks using various resources and strategies (Thywissen 2006). Strengthening coping capacities often builds resilience to bear the impacts of shocks and hazards. Adaptive capacity is the ability of the household or community to learn and manage how to live in a risky environment. While coping strategies are short-term responses to adverse shocks, adaptation refers to long-term changes of a household's behaviour in response to repeated shocks (Davies 1996). Higher coping and adaptation capacity is associated with lower vulnerability and thus higher resilience to risks (Oft 2010). There is a close link between external interventions (e.g. financial inclusion) and vulnerability reduction (Chua, et al 1999, Niño-Zarazua and Copestake 2009). Intervention failure such as financial exclusion may cause more vulnerability to poverty. The entire chapter deals with the coping capacity and resilience building in *Ausha* and *Bhadeshwari,* with special focus on the effectiveness of livelihood interventions in household strategies. Next chapter will focus on financial inclusion as a core livelihood intervention in these villages.

6.1 Income generating activities

The pattern of income generating activities in *Ausha* and *Bhadeshwari* differ (Table 6.1). The number of people engaged in agriculture is more in *Ausha* (43.4 percent as primary and 3.1 percent as secondary job) than in *Bhadeshwari* (27.2 percent as primary and 16.1 percent as secondary job). This is because, as previously mentioned, lands in the former village are bi-harvest producing two crops a year, whereas lands in the latter are mono-harvest producing single crop a year. However, recognizing that income from agriculture is not sufficient for livelihoods, the residents of *Ausha* seek various non-farm activities such as migration, taxi driving, salaried job and self-employment. Migration is the most popular income diversification option chosen by the people of *Ausha* after agriculture (23.9 percent as primary and 11.1 percent as secondary job). Residents of *Bhadeshwari* have more diversification prospects in day labour (44.7 percent) followed by agriculture and small trading (17.5 percent as primary and 9.2 as secondary job).

Table 6.1 Income generating activities in *Ausha* and *Bhadeshwari*

Income sources	Percentage of Households		
	Primary	Secondary	Additional
Ausha	**100.0**	**100.0**	**100.0**
Agriculture	43.4	3.1	0.0
Day labour	8.4	6.2	4.0
Small business	7.1	4.4	0.4
Remittance	23.9	11.1	0.4
Fishing	0.0	0.0	0.0
Others	17.2	12.8	4.9
None	0.0	62.4	90.3
Bhadeshwari	**100.0**	**100.0**	**100.0**
Agriculture	27.2	16.1	0.9
Day labour	44.7	7.4	2.7
Small business	17.5	9.2	0.5
Remittance	5.5	1.9	1.4
Fishing	1.8	8.3	1.4
Others	3.2	1.8	0.5
None	0.0	55.3	92.6

Source: Author's survey, 2013. Others include salaried job and self-employment including taxy driving, carpentry.

6.2 Risk management strategies

In FGDs, rural people described risk management strategies in the following simple pattern. *Chhoto* (micro) risks such as minor illnesses are manageable through individual compensation including cash at hand or savings in *matir* bank (piggy bank made of clay). *Majhari* (meso) risks such as death of income earner can be compensated by the community or market arrangements including borrowing from moneylenders or MFIs. In case of *Borho* (macro) risks e.g. floods and cyclones, government intervention is more desirable. However, the three poverty groups differ in coping strategy opinions. While the non-poor focus mainly on individual and market-based risk coping strategies, the moderate poor draw on a combination of all strategies. The extreme poor people largely favour government interventions. Risk management are associated with three strategies: 1) *risk protection* techniques that help households in accumulating assets as buffer stock, 2) *risk coping* strategies that reduce the magnitude and impact of shocks, and 3) *risk sharing* arrangements help households to share risk with others. These strategies may be *ex ante* i.e. implemented before the occurrences of risks as a precaution, or they may be *ex post* to cope with the risks occurred. *Ex-ante* measures prevent an individual or households from the occurrence or impact of future of risks. *Ex-post* measures release or minimize the impact of risks the household has already experienced.

Table 6.2: Risk management strategies in *Ausha* and *Bhadeshwari*

Strategies	Informal	Formal	
		Market-led	State-run
Risk protection	Savings in cash Savings in kind Income diversification	Savings in MFIs Savings in banks	School stipend Pension and grants Agriculture extension
Risk coping	Reduce consumption Borrow informally Sell assets Migrate	Borrow from banks or MFIs Buy medicine from dispensary Private clinic services	Go to hospital or clinic Workfare
Risk sharing	Sharecropping Patronage Social insurance	Insurance with MFIs Financial and market literacy Adult literacy	Infrastructure School/college/ university Hospitals

Source: Focus Group Discussion and Author's survey, 2013

6.2.1 Risk protection strategies

Risk protection strategies are *ex ante* i.e. before the shocks or hazards appear. Households try to build up assets to cushion against any anticipated and unanticipated risks. Risk protection strategies are built on previous knowledge and experiences in risks and thus they are part of the adaptation and resilience of the households. These strategies are mainly in accumulating assets and diversification of income sources.

Precautionary savings: Anticipating future shocks, households build up savings in liquid (cash), semi-liquid (bank deposits) or nearly illiquid (in kind) assets in order to avoid the damaging consequences of selling productive assets or reducing consumption in time of distress. This precautionary savings takes the form of informal savings (in piggy bank or stashed under a mattress), formal savings in bank and financial institutions, and savings in kind such as food stocks, gold and jewellery. Deaton argued that poor households save even when the return on assets is negative (Deaton, 1991; 1992). This is because their motive is not to convert savings into investment but rather to use as buffer stock to smooth consumption and deal with emergencies. Households save grain stocks and cash to avoid seasonal variations in food prices even though they know that food stock may depreciate due to insects or rat infestations, and cash deposits may have low or even negative returns due to inflation. Households also have other savings motives such as life cycle (mainly for weddings) and bequests (mainly land purchase) (Horioka and Watanabe 1997).

Savings in cash: People save cash or liquid for instant use in emergencies. Cash savings may be informal or institutional. Informal savings are held at home, inside *matir bank* or

stashed under a mattress. These tiny amounts are normally used for coping with small risks, which villagers call *chhoto bipod* such as minor illness, pocket money for school going children, or even weekly instalment for MFI loans. Respondents in the group discussions argued that informal savings are gradually eliminating from rural households mainly for three reasons: 1) Impatience – informal savings instruments are not strong enough to resist the demand for temptation spending by the family members, especially children. 2) Security – money kept under the mattress or inside the *matir bank* is always vulnerable to theft. 3) MFI instalment – MFIs members argue that when they are under weekly loan repayment cycle there is no money left for their *matir bank*. "We are happy because we save in MFIs along with loan instalment. Savings is now out of the reach of family members".

MFI members in both villages report that they save money in MFI accounts on a weekly basis along with the loan instalment. Among the savings motives, most of the savers prefer precautionary to investment motives. They also prefer flexible savings that allow free withdrawals particularly in an emergency. Inflexibility undermines the risk coping capacity of the members, as alternative sources of emergency finance are costly. A few members argued that they are saving money to invest in future so they do not want to withdraw money now. "We have other place to save for emergency use so we want the money in the *samity* (MFI group) intact for the future". Savings and loans together may constitute a substantial amount for an investment in the future.

As the non-poor are not eligible for MFI membership, they are inevitably excluded from the rural savings mobilization. The majority of them do not have a bank account as banks are far away from their residences. Around 23 percent of the households in *Ausha* and 6 percent of the households in *Bhadeshwari* have savings accounts in banks. The main reasons for opening a bank account is to receive remittance or deposit sales proceeds from small trading. The number of accounts is declining as banks relax the requirement of having an account in receiving remittances. Customers now receive remittance using a pin number and ID over the counter. Non-poor respondents, who prefer to continue using bank accounts, claim that they use part of the remittance for family expenditure keeping the rest as savings for unanticipated emergencies.

Savings in kind: Apart from cash in piggy banks and deposits in MFIs and banks, rural people also use physical assets as savings including livestock, jewellery, and trees. These assets have store value that can be converted into cash more quickly than other perfectly illiquid assets like real estate and land. Savings in kind may include productive assets such as trees, livestock, poultry, and unproductive assets such as jewellery and household durables. Group discussants reported that savings in kind comes into consideration when cash is insufficient for insulating the impact of future shocks. They access these savings for mitigating *majhari* (meso) types of risks including children's education, marriage, and serious illness.

There is a special kind of traditional savings practice in rural areas of Bangladesh to note. Women usually save a fistful of rice grain in a jar from the amount decided for cooking. This type of microsavings in kind is called *musti chal* (fistful of grain). In a month, they save a substantial amount of rice that may be converted into cash for various uses including medicine for minor illness, children's exam fees or pocket money, and purchasing goods from mobile traders. A woman in the group discussion argues, "Recently, *musti chal* deposit is not frequent as in the past. We are now using the deposit to compensate for weekly instalment deficit. We also donate our grain deposit to the mosque as a religious obligation (for weekly prayer)". Both *Ausha* and *Bhadeshwari* residents have similar opinions about the *musti chal*.

Food security: Rural people often face the risk of food insecurity due to sudden crop failure and seasonal variation in food prices. Rural households store food in the granary and consume this throughout the year to combat price volatility. A month equivalent of food storage is a food security indicator in mental accounting of the rural people i.e. they calculate how many months they are able to feed themselves with their own food production. In *Ausha*, the average food storage is an 8-10 month equivalent while it is a 5-7 month equivalent in *Bhadeshwari* (Table-5.10 Ch. 5). Thus, residents in *Ausha* are more food secure than in *Bhadeshwari*. The calculation of month equivalent contains food consumption plus cash conversion by selling portions of the grain in the market. The cash is used to buy other food and non-food items. Self-sufficiency (at least 12-month equivalent of food storage) is always a serious concern for rural households. They continuously try to increase food production using specialisation and diversification techniques or accumulating productive assets such as land. For many rural households in

Bhadeshwari food self-sufficiency is nearly unattainable because of unsuitable agricultural land (mono-harvest low land) and lack of sufficient assets (especially financial assets) to produce more food. They attempt to ensure food security through alternative strategies such as engaging in non-farm income generating activities including day labouring, small trading, and fishing. *Ausha* residents combat food deficiency through self-employment (e.g. taxi driving) and external migration.

Income diversification: The reduction of risk may be achieved via portfolio diversification of income generating activities. About 37.6 percent of the households in *Ausha* and 44.7 percent of the households in *Bhadeshwari* have a second source of income. In addition, about 9.7 percent of the households in *Ausha* and 7.4 percent of the households in *Bhadeshwari* have more than two sources of income (Table 6.1). As land in *Ausha* is bi-harvest i.e. producing two crops a year, farmers practice 'crop diversification' by planting different crops in the same plot at different times and 'plot diversification' by planting different varieties of crop in different plots at the same time to obtain more output. Some farmers grow vegetables between two cropping. Land in *Bhadeshwari* is mono-harvest i.e. producing single crop a year, thus farmers can only practice 'plot diversification'. The reason for single harvesting is that the lands are floodplain and remains under water for about a quarter of the year. Intercropping diversification i.e. combining farm and non-farm activities is also possible as farmers have plenty of time between two crops or between sowing and harvesting in single cropping. People in *Ausha* opt for self-employment activities such as taxi driving, and carpentry during off peak time. Residents in *Bhadeshwari*, on the other hand, engage in day labour, small trading and fishing in lean times. Some people temporarily migrate to nearby villages where there is a labour shortage during harvesting time (migration from single harvest region to bi-harvest region).

Specialization: While income diversification reduces the variations in income (variance), specialization increases the expected income (mean value). Residents of *Ausha* and *Bhadeshwari* are aware of the state funded agricultural extension office which help farmers with training and consultation related to HYV seeds, fertilizers and irrigation. As lands in *Bhadeshwari* are low floodplain and mono-harvest, they have been advised to grow deep-water HYV rice varieties and flood tolerant vegetables. *Ausha* farmers have been advised to grow more vegetables in between two crops. To protect from low-income

risks, the residents of *Bhadeshwari* specialize in small trading activities in four bazaars within their range: *Kopla, Bhadeshwari, Borokapon* and *Zawa*. There is a wetland situated in the northeast of the village called '*Kuri beel*'. This water body gives villagers an opportunity to take fishing as a secondary source of income (8.4 percent). *Ausha* residents are interested in specializing in self-employment activities (taxi driving, carpentry) in which 17.2 percent of the households have primary choice and 12.8 percent have secondary choice (Table 6.1).

School stipend: There is a close association between coping capacity and the ability to send children to school and thus vulnerability is an important determinant of school dropout (Jacoby and Skoufias 1995 and Sawada 1997). Poor people work hard to manage school fees, books, and uniforms for their children. However, when they face serious shocks to their earning capacity they see no alternative but to withdraw their children from school and engage them in income generating activities (Grootaert and Kanbur 1995; Fafchamps and Quisumbing 1998). To prevent children from dropping out of school, the Bangladesh government has implemented primary and secondary school stipend programmes. Students of distressed female-headed households, or poor households with less than 0.5 acres of land or households with day labour as their main income sources are eligible for the stipend of Tk.100 per household per month (Rahman and Choudhury 2012). Respondents in *Ausha* and *Bhadeshwari* reported that they regularly collected these stipends to keep their children in school and therefore they did not have to worry about buying education materials. "Our children are very demanding on pocket money for school. Sometimes they insist on not going to school without it. We have to manage them. We know that stipend is conditional on attendance and good performance in school". Apart from the government primary school, there are informal schools in two villages run by the FIVDB and BRAC. These schools are for those who are either pre-school age or do not go to school because the nearest school has no capacity for them. Both BRAC and FIVDB schools are tuition free but parents have to buy study materials.

Pension and grants: Among the six major pension programmes for rural people in Bangladesh, only two operate in *Ausha* and *Bhadeshwari*. These are old age allowance and allowance for widowed, destitute and disabled women. Each beneficiary receives Tk. 300 per month. There is also a food grant for vulnerable people through Vulnerable Group

Development (VGD) programme. In this programme, each recipient gets 30 kg of grain (wheat/rice) per month for a cycle of 24 months. Both allowances are paid through the union council. There were mixed impressions of these pensions and grants among the group discussants. Recipients of these benefits expressed an appreciation for the increased income, food security, dignity in family and health care. Eligible non-recipients expressed complete dissatisfaction in the distribution of the allowances. "We are not listed for allowances or grant. The council members are biased towards kin, relatives and political alliances. We elected them but they never listen to us after the election was over". In *Bhadeshwari*, a large number of potential non-recipients eagerly wanted to join the public safety net programme. However, the number of people in the waiting list was less in *Ausha*. The reason is that the gap between the number of potential beneficiaries and the number of allocations is narrow or the councillor representing the village is neutral regarding distribution of public funds. A discussion with a union council member in *Bhadeshwari*, who is incidentally a respondent from the non-poor group, revealed that government allocation is significantly less than the number of people who want to be included. "However, we are hopeful, more packages are in the pipeline", she added. Her claim of inadequacy of public allocation is reflected in the recent household survey data which shows that safety net in Bangladesh covers only 25-30 percent of the poor (HIES 2010). The actual coverage would be lower if leakage and inclusion errors were taken into account (Rahman and Choudhury 2012).

6.2.2 Coping with risks

While risk protection strategies are *ex ante* measures in advance of the occurrences of risks, coping strategies are *ex post* actions after the risk events have taken place. The fundamental difference between the two lies in *ex ante* and *ex post* implementation of strategies i.e. timing of implementation. Same strategies can be identified as risk protection as well as risk coping. For example, migration for income diversification is risk protection but when an individual migrates after flooding, it is a coping strategy. Similarly, saving mobilization is a protective strategy but one may use savings for coping with immediate crisis.

Reducing consumption: In order to avoid liquidation of assets in times of distress poor households prefer to reduce consumption, as they know that liquidation is welfare depleting and earn lower sales value in bad times. Non-poor households adjust family

budgets to modify consumption. They may avoid high nutrient items such as cheese and butter but they prefer not to curtail the number of meals in a day (compromise quality for quantity). The poor's menu never contains high quality food to curb but they will reduce the number of meals during emergency periods. "We usually have three meals a day but when there is a *bipod-apod* (crisis) we eat less - may be two times a day or even once", said a poor respondent in *Bhadeshwari*. Similar expressions came from group discussions with the poor in *Ausha*. The extreme poor eat less in both quality (low price, low nutrient) and quantity (2 meals a day) throughout the year. When asked about chicken curry they replied, "Hardly once in a month or when a guest comes to visit and have food with us". In fact, their food security is low. They have surplus food in store for 2-3 post-harvest months on average. During lean time or crisis period, their food consumption drastically falls in both quality (sometimes, wild food) and quantity (once a day). In short, the non-poor reduce only quality (standard), the poor reduce quantity (number of meals) and the extreme poor reduce both quality (in terms of price and standard) and quantity (in terms of the amount of food and number of meals) of food consumption facing shocks and emergency.

Use of savings: Use of savings is the next option for households in coping with risks. When people face a crisis, they instantly need cash to combat it. Cash at hand, household savings in clay bank, and bank deposits are the main sources of crises time cash for non-poor residents in both *Ausha* and *Bhadeshwari* villages. Sometimes they ask for payback of outstanding soft loan provided to the poor, friends, and family members. As they have bank deposits they do not have to use savings in kind for risk coping. The poor and extreme poor people depend more on household savings and savings in kind. MFI members maintain savings with the MFIs but the use of these savings in crises depends on flexibility of the account that varies by institutions. Semi liquidity or inflexibility of savings is a barrier to the use of savings in coping with crisis. In crisis, instant cash is desirable but except for household savings, neither MFIs savings nor savings in kind can guarantee the flexibility and timeliness of withdrawal or encashment. MFI members can therefore be seen to be in a challenging situation. They accumulate or gather household savings to pay loans and savings instalments, but for an emergency, they have to wait for the next weekly meeting or office approval for withdrawal of their own savings. Therefore, they use their savings as a guarantee to borrow money from instant sources, which makes their crisis finance costlier.

Borrowing: When a household faces overwhelming shocks, savings are not enough to smooth consumption and absorb shocks. The household's current income falls short of expenditure to cover the crisis spending, thus deficit financing in the form of borrowing is obvious. The magnitude of deficit finance depends on the level of current income. Non-poor households have very little or no deficit in the event of risks and thus they do not need to apply for a formal borrowing arrangement. They argue that non-interest bearing soft loans (*hawlat* or *karde-hasanah*) from friends and family is sufficient for funding deficit during bad times. In combating severe risks, they may pawn assets (jewellery, land etc.) in exchange for lump sum money. This system is called *bondhok* in local dialect in which assets are exchanged for money for an indefinite period on condition that when the asset owner is ready to payback the *bondhok* receiver shall return the asset instantly. In case of productive assets, the *bondhok* receiver enjoys the income from the assets. The *bondhok* giver thus loses future earnings. Non-poor households normally exchange non-productive assets like jewellery.

Poor households have a very low level of assets and thus their income flow is too low to compensate emergency needs. They are compelled to borrow even in a credit-constraint situation where a loan is inadequate or costly and creditors insist on repayment under any circumstances (e.g. Deaton, 1990; Carroll, 1992). Poor people in *Bhadeshwari* are credit constrained as formal microfinance services are inadequate and moneylenders take this opportunity to charge high rates (10-15 percent per month). MFI members are fortunate to get microloan at 20-25 percent per annum. Very poor and non-member households have no alternative to borrowing from moneylenders. Zero interest *hawlat* or soft loan is a rare opportunity for them. Respondents in *Ausha* reported that they did not face such situation as the inadequacy of MFI loan was complemented by benevolent non-poor people who always maintained social connections with poor relatives and friends.

There is an interesting credit arrangement between households and grocery shops in both villages. People buy daily necessities from the grocery shop on credit, conditional on repayment being as soon as they have cash at hand. Normally, rural people have very little or no cash at hand. What they do generally is to liquidate grains from their food stores when they need cash to buy necessities. They carry out food encashment in intervals, as they know that there is no right place for depositing the cash if they do it at one time. Moreover, households hedge against food price variations that are at low in the

harvesting time and gradually go up before the next harvest. The grocery owners thus inadvertently minimize the risk of food price fluctuations of the households.

Selling assets: When households face a series of shocks, liquidating assets is a common way to handle the situation. At first, households attempt to sell non-productive and store value assets including trees, jewellery, and household durables. Non-poor households prefer pawning these assets instead of selling as they have strong assets base to redeem them in the immediate future. If the poor do the same, they may have little chance to reimburse unless they have substantial financial gains in the future. Moreover, in exchange of pawning tiny assets they may not get enough money to compensate the crisis. Therefore, some of the poor and most of the extreme poor households prefer selling of non-productive assets. Respondents in both *Ausha* and *Bhadeshwari* reported that the most useful assets to sell were trees especially bamboo. The bamboo tree grows abundantly in every homestead and there is a high demand for its use as a raw material for walls, roofs, fences, mats, paddy or rice containers etc.

Selling productive assets has a negative impact on the future earning capacity of the households. Initial candidates for liquidation include livestock, poultry, and farm equipment. Selling bigger assets such as land in times of distress has a devastating impact on household welfare for at least two reasons: Firstly, the seller can receive a very low price as the buyer may take advantage of the seller's desperate need for instant money rather than showing sympathy. In the case of collective risk like droughts and floods, lower price is usual because sellers have few, even almost no buyers (Dercon, 2006). Secondly, they are more likely to face difficulties in the future as they now have less productive assets and thus are more likely to sell from remaining assets again (e.g. Zimmerman, 1993). Most of the time, extreme poor households sell land when they have no other way to survive. These households have only homesteads and live by labouring. Many of such households are found in *Bhadeshwari*. The number is relatively less in *Ausha*. Paying the cost of migration is another reason for selling land. People have the expectation that they will be able to repurchase the land when remittance starts flowing in. Sometimes, these dreams break down when fraudulence occurs in the migration process.

Migration: As a part of diversifying income, family members migrate to other villages, towns, cities and even abroad to earn livelihood. They send money to support their

relatives who remain in the village. Migration can take the form of temporary and permanent movement from poor rural areas to rich rural or urban areas nationally and internationally. In *Ausha*, remittances from migrant workers constitute a large part of household incomes. Around 24 percent of the households in *Ausha* report that remittance is their primary source of income and 11 percent said it is their secondary source. In *Bhadeshwari*, the percentage remains low at 5.5 percent and 1.9 percent respectively (Table 6.1). *Bhadeshwari* people have a high tendency to migrate but they reported that they were unable to bear the initial cost of migration and sometimes they became victim to fraud migration agents. "My son went to Dubai last year through a middleman. We sold 0.25 acres of land to bear the cost. In Dubai, he found that the work permit was a fake. He came back and we lost all. Not a single penny left with us, let alone repurchase the land" - screamed a vulnerable woman. Another man reported that his son had been living in Saudi Arabia for three years but he could not send money regularly because he is not a legal worker. "On one occasion, he sent money through improper channel but it never reached the time we needed money desperately". Such remittance problems also occur in *Ausha* but less frequently. However, most of the legal workers abroad send money to help their family to fight poverty and vulnerability. The recipient families reported that they spent a major portion of the money in family expenditures and the rest remained in their bank accounts as precautionary savings. They build or repair their houses, buy household durable goods, invest in productive assets and even start buying luxurious goods to show pride and to earn a good position in the society. They gradually build *pucca* (brick and cement) buildings with hygienic bathroom facilities. On top of this, they attempt to repurchase the pieces of land they sold for migration costs and then buy additional land to increase the assets base.

Health seeking: For minor illnesses, rural people often go to a dispensary run by a paramedic locally known as *dakter* (doctor) who takes a short course in medical school to practice in rural areas. Village doctors can see patients with minor conditions such as flu, colds, headaches, malaria, pneumonia, and rheumatism and can sell a limited category of medicines. For critical cases, they refer patients to a health complex or hospital for better treatment. In *Bhadeshwari* bazaar, two such dispensaries provide health services to the villagers. The villagers complain that these services are not adequate. There are also two alternative forms of medicines available for villagers to complement their health needs: homeopathic and herbal. In addition, a few indigenous practitioners or quacks take

advantage of the illiterate poor to provide low cost but illegal health services. For critical health problems, villagers always prefer hospital services. The nearest hospital for the *Bhadeshwari* villagers is *Koitak Health Complex* – a 50-bed hospital near *Zawa Bazaar* that is about twelve kilometres away from the village. However, insufficient facilities in this hospital compel the serious patients to travel to hospitals in Sylhet city. Public hospitals are not that very costly but villagers are concerned with the distance (about 35 kilometres from *Bhadeshwari*). "My daughter died on the way to hospital last year. She had a sudden food block in the throat while eating. Local *dakter* could do nothing", an MFI member disclosed in the group discussion. Poor people never consider private hospitals or clinics as these are too costly for them. "Only rich can afford to go there for treatment", said one respondent in interview. Health seeking behaviour in *Ausha* is different. The residents of *Ausha* are less worried about the health services as the distance from Sylhet city is only ten kilometres. For critical health cases, people can reach hospitals within 15-20 minutes. Taxi drivers in the village offer transport services for life-threatening patients free of charge. "We care for sick people in our village. We are like family members".

Workfare: Apart from *ex ante* social protection from the public fund such as pensions and grant, there are *ex post* actions by the government to reduce poverty and vulnerability. One of those programmes is Employment Generation Programme for the Poor (EGPP). It is a conditional cash transfer (CCT) to generate 100 days employment per year for very poor people. The condition is construction work in exchange of Tk. 150 per day per person. The work includes road repair and maintenance, excavation of water bodies, repair or excavation of irrigation channels, and river embankment repair in rural areas. During the fieldwork, such programmes had been ongoing in both *Ausha* and *Bhadeshwari*. Those employed in the programme expressed satisfaction in their wage as it was above the average rate of Tk. 120-130 in the village. However, they were disappointed as the employment was only temporary i.e. once completed, the work would not resume until the next repair. Those not included in the programme said, "We wanted to join the programme but the supervisor did not take us". According to the supervisor, the worker list was given by the union council office.

6.2.3 Sharing risks with others

Households implicitly share risk by trading accumulated assets with others. They may exchange physical (productive or non-productive) assets such as jewellery and livestock for food during bad times. This type of risk sharing requires markets so that people can sell physical assets to buy foods. In case of covariant shocks, when many people want to sell livestock for grain, the price of the former drastically falls relative to that of the latter undermining people's ability to share risk and smooth consumption (Dercon, 2006). This market failure may push households towards a greater likelihood of entitlement failure leading to famine (Sen, 1981). However, if the market is smooth, livestock and food grains may serve as protection against shocks. With inadequate assets accumulation, individual or households may fail to achieve perfect consumption smoothing. In such cases, they depend on explicit risk sharing arrangements with the community such as sharecropping, patronage, and social network.

Family formation: A household is a unique place for pooling resources and sharing risks in many ways: *Firstly*, large households often share consumption risk among members providing low-cost food processing in common kitchen. *Secondly***,** household members take care of children, old and sick, provide food and shelter for unemployed and the disabled (Dercon and Krishnan 1997). *Thirdly***,** households pool labour resources to contribute in commonly shared fields to reduce production risks (Fafchamps, 1999). In both villages under study, there are a substantial number of large households indicating the implication of risk sharing arrangements (Table 5.2 Ch. 5). Nearly sixty percent of the households have more than six members (57.1 percent in *Ausha* and 59.1 percent in *Bhadeshwari*). The number of nuclear families is low in both villages (7.1 percent in *Ausha* and 8.7 percent in *Bhadeshwari*). High dependency and child-women ratios in both villages (99 and 461 in *Ausha* and 104 and 609 in *Bhadeshwari*) indicate the role of family in risk sharing (Table 5.5, Ch. 5).

Marriage is a commitment through which a husband and wife share risks through common resources and household activities. Parenthood is another mutual obligation through which children receive support from parents and in exchange, parents receive old age care and respect. Commitment failures in family relationship are rare in both villages. Parents save portion of their income for their children's future (education, and marriage). Bequest motives are always active in their mental calculation of land and other properties. No

evidence of elderly parents being neglected or left alone by their children was found during the survey. In marital status, only 0.2 percent among males and 1.1 percent among females were either divorced or separated in *Bhadeshwari*. These percentages were even lower in *Ausha*: 0.0 percent and 0.1 percent respectively (BBS 2012, village level census data from BBS website). The household survey found that female-headed households, either widowed or divorced, were less able to deal with shocks and tended to be poorer than households that were not divided. Moreover, those who took shelter in parents' homes became financially dependent and frustrated.

Sharecropping arrangements: Sharecropping is one of the major ways through which rural farmers share agricultural risks and smooth output. In the cropping season, farmers need credit and other inputs such as seeds, fertilizer and irrigation (credit and input risks). Two types of sharecropping contracts are found in *Ausha* and *Bhadeshwari*. 1) In *bagi* or *borga* arrangement, landowners provide land and share other inputs with the tenants at the beginning of the planting season. Following the harvest, both parties share fifty percent of the crop. For example, if a farmer grows 50 kg of rice in a piece of *Bagi* land, 25 kg goes to the landowner. 2) In *logni* arrangement, moneylenders provide cash to farmers at the beginning of the cropping season and take a portion of the output as interest after harvest. The farmers repay the principal amount by selling crops either to moneylender or in the market. In the former case, farmers lose some value as the farm gate price is always lower than the market price, but then they could avoid transportation risk. Sometimes, the landowner and the moneylender is the same person who provides land as well as credit. Both *bagi* and *logni* arrangements are available in *Bhadeshwari*. However, *borga* or *bagi* system is predominant in the in *Ausha* because of the nonexistence of moneylenders and the availability of soft loans (interest free and flexible repayment) from friends, family and even from benevolent landowners. *Bagi* or *Borga* system is also applicable to livestock and poultry where the owner temporarily transfers the possession of these assets to a farmer in exchange of half the amount of any output during the contract period. For example, if a cow owner gives *bagi* to a farmer, the farmer owns the first calf from the *Bagi* cow but the next one goes to the original owner. This process repeats until the contract ends. Similarly, fifty percent of milk from the cow goes to the original owner. In *Bagi*, *Borga* or *logni* process both owner and receiver of agricultural inputs share production and output risks.

Patronage: Apart from agricultural risk sharing practice there is another risk sharing relationship between the rich and poor. In this patron-client relationship, wealthier people provide financial and non-financial support to the very poor in exchange for regular labour and other services (Platteau 1995). Access to credit and transfer of physical assets guarantees the continuation of the relationship as well as risk sharing. Whether such patron-client relationship is redistributive or exploitative depends on the attitude of the patron as the poor clients have very little things to compensate for large contribution of the rich. In addition to labour services, clients may provide other services such as small gifts, transfer of information, and political support. A patron may act benign and paternalistic or very stringent in dealing with the poor. In *Ausha*, the patron-client relationship is gentle where patrons are generous in financial and non-financial dealings and the poor are sincere in exchange. Group discussants argued that rich people are always supportive, they never charge interest on financial transactions and sometimes they do not ask for repayment when borrowers are extremely needy. In *Bhadeshwari*, patrons are more professional and they charge interest in financial dealings with the poor. An extreme version of the patron-client relationship is 'bonded labour' in which clients enter a long-term labour contract with the master. The common scenario in Bangladesh is as follows. Rich people in rural areas, mostly landowners or moneylenders, provide loans to individuals in difficulty. If the debt is repaid on time, the debtor is free. However, sometimes debt cannot be repaid because of high interest rates (10-15 percent per month) that keep accruing in principal at a compounding rate. At times, the amount of debt exceeds what the debtor can ever hope to repay. As a result, the debtor is forced to sell his land and other productive assets to repay the loan and thus falls into extreme poverty. There is no alternative to selling labour to avoid starvation. In an extreme case, the creditor will seize the debtor's land and buy his future labour at a very cheap rate until the debt is finished in exchange (Fafchamps 1999). Such an extreme case is non-existent in the villages under study. According to the respondents, "We do not face such crisis. We do not take what we cannot repay."

Formal insurance: Some insurance companies provide microinsurance for the low-income people in rural areas of Bangladesh. Respondents in both villages reported that no such companies were operating in their villages. However, all three MFIs working in these villages have microinsurance programmes. Two types of microinsurance exist. In loan insurance, borrowers have to pay a premium each time a loan is taken. In case a

client dies, the outstanding loan is paid off and family of the deceased get the premium back. For life insurance, clients need to pay a premium per year. After a certain number of years, he or she gets the benefits normally a lump sum. In the case of death before the maturity of the loan, family members of the deceased can use this money in funeral or other necessities.

Social insurance: Rural people share risks through social insurance arrangement such as social network and charity. Apart from patronage-client networks within the village, there are other networks with people outside the village. People keep close contact with influential persons outside the village such as politicians, local government representatives, merchants, doctors and migrants for financial and non-financial support in case of emergency. These influential persons may have family connections in the village. A respondent in *Ausha* said, "My uncle's close friend is a doctor in Sylhet. For any health emergency in our village, we seek his advice about what to do and where to go". A family in this village migrated to UK permanently but they keep close contact with the relatives back home. In *Bhadeshwari*, some residents take fishing as secondary job. They keep close contact with the fishing community of surrounding villages for fishing collectively in two *haors* nearby.

The extreme poor sometimes depend on charity-based social insurance provided by the rich in the community. There is a humanitarian and altruistic feeling behind the charity. The feeling is generally based on religious obligations. There are two major types of religious charitable acts. The first one is *sadaqah*, which is voluntary donation to the destitute, people with disability and to religious institutions. The second one is *zakah* where compulsory donations are distributed to the poor and needy by the rich who possess wealth beyond a certain threshold of basic needs. There are other types of charitable donations made during the two major *Eid* festivals. One is *fitra* in *Eid-al-Fitre* – a donation from rich people to poor so that they can celebrate the festival. The other is meat distribution in *Eid-al-Adjha* – donation of a portion of meat from a sacrificed animal in the festival. Through these two festival donations, rich people attempt to reduce festival risk or *ritual* risk of the poor. Moreover, alms giving to destitute and disabled persons are a common practice in both villages. Whenever a beggar comes to a doorstep, a fistful of grains or some coins are given. In FGDs and interview, respondents in both villages argued that these insurance arrangements are well practiced in their communities.

6.3 Coping capacity

Household's coping capacity depends on the appropriateness of the risk management tools and the strength of the household. Appropriateness is a mixture of the service provider's ability (coverage and accessibility) to deliver and service user's capability (timeliness and affordability) to use a particular risk management tool. The strength of a household depends on its actions to recover from loss in the event of shocks and stresses using one of the three strategies: non-erosive, erosive and damaging (Donahue 2000). Non-erosive strategy includes liquidation of protective assets (i.e. savings) that does not affect the productive capacity of the household. Erosive strategy uses productive assets (i.e. livestock) or liability (i.e. borrowing) that hampers the productive capacity of the household. Finally, damaging strategy leaves only few coping mechanisms at hand such as selling cheap labour. Cohen and Sebstad (2003) reclassified these strategies based on degree of stress associated: least stressful, medium stressful and highly stressful strategies. The analysis of focus group and interviews indicates that there is a close association between these strategies and the vulnerability status of the households. Damaging and highly stressful strategies are usually associated with highly vulnerable households. Moderately vulnerable households normally implement erosive and medium stressful strategies. Non-erosive households use least stressful tools and consequently they are the least vulnerable if not non-vulnerable.

Table 6.3 Hierarchy of risk management strategies in *Ausha* and *Bhadeshwari*

Non-erosive and least stressful	Erosive and medium stressful	Damaging and highly stressful
Modify consumption Use informal and formal savings Borrow from friends and family at zero interest Work more hours Exchange or pawn assets	Reduce consumption Use savings in kind Borrow from formal sources Sell non-productive assists Sell or exchange of productive assets Migrate to abroad	Drastically reduce consumption Borrow at usurious rate Sell large productive assets such as land

% of Households by coping capacity

	Resilient	Weak	Fragile
Ausha (n = 105)	55.2	10.5	34.3
Bhadeshwari (n = 105)	31.4	13.4	55.2

Resilient, weak and fragile households are equivalent to non-vulnerable, low vulnerable and highly vulnerable households in the villages. At the same time, they are also equivalent to non-erosive, erosive and damaging households respectively.

Based on the above classification of risk management strategies and degree of stress absorbed, households in *Ausha* and *Bhadeshwari* may be reclassified into three types. 1) *Resilient* households apply least stressful and non-erosive strategies and most of them are non-poor and non-vulnerable in the poverty group; 2) *Weak* households use medium

stressful and erosive strategies and most of them are poor and vulnerable; and 3) *Fragile* are those extremely poor households that have very limited risk management tools in their portfolio. They use severe strategies such as selling land and thus become highly vulnerable to risks. Resilient households have the capacity to utilize the household resources without undermining the productive capacity and without seeking much help from the outside. Households become weak when they start selling protective and productive assets and borrow from formal and informal sources. They also start depleting formal savings and thus affect future investment and earning capacities. Fragile households have very limited number of strategies left in the portfolio and eventually they have a tendency to sell productive assets as a last resort i.e. land. To survive, they sell land part by part to pay for family necessities and gradually become destitute, even selling the shelter accommodation they have to become homeless. One of respondents in *Bhadeshwari* experienced this ultimate fate due to a legal dispute over a murder.

Risk management in Ausha and Bhadeshwari: The household surveys and group discussions with residents of *Ausha* and *Bhadeshwari* revealed that non-poor residents are more resilient than the other two groups in both villages. They used non-erosive strategies to combat risks and shocks without depleting the assets base of the households. Poor households used asset depleting or erosive strategies but they depended more on non-productive assets such as jewellery or households items. They sometimes pawned these assets to obtain lump sum money to fight risks and shocks. The extreme poor people were more likely to use damaging strategies that involved liquidation of productive assets such as land. Consumption smoothing is a common technique for all types of strategic categories. Consumption modification i.e. reduction of consumption by quality of food in terms of price is commonly experienced by the non-poor group in both villages during bad times. Most poor people apply reduction in quantity of food such as less number of meals a day. However, a drastic reduction i.e. combination of reduction of both quality (in terms of nutrient such as raw food) and quantity (meals per day) is the last resort for the survival of the poorest.

Table 6.4 Major risk management strategies by poverty groups in *Ausha*

Strategies	Percentage of Households		
	Extreme poor	Poor	Non-poor
Resilient strategies			
Modify consumption	10.8	8.8	35.9
Use informal and formal saving	7.1	14.1	31.3
Taking help from friends and family	12.7	26.3	32.5
Exchange or pawn assets	5.4	12.9	27.1
Work more hours	8.6	6.7	2.2
Weak strategies			
Reduce consumption	10.5	8.3	3.4
Use saving in kind	9.5	13.1	20.8
Borrowing from formal in informal sources	11.6	14.6	7.7
Sell non-productive assets	15.6	24.1	5.0
Sell or exchange productive assets	18.4	15.8	8.3
Fragile strategies			
Drastically reduce consumption	8.1	3.5	1.3
Borrow at usurious rate	0.4	0.3	0.2
Sell large productive assets	4.6	2.7	0.1

Source: Author's survey, 2013. Percentage does not add to hundred as households report multiple risk management strategies. Some respondents, who did not face any crisis during the reference period, remained non-responsive. Reference period is one year.

Residents of *Ausha* are more inclined to the strategy of taking help from friends and family among the resilience strategies while *Bhadeshwari* people increase the hours of work. This is because the social network in *Ausha* is very strong and job opportunities for day labourers are greater in *Bhadeshwari*. In the case of weak strategies, households in *Ausha* were found to use less asset depleting strategies than those in *Bhadeshwari*, where selling non-productive assets is a dominant strategy. For fragile strategies, it was obvious that *Bhadeshwari* people were more inclined to moneylenders who charge high rates of interest for financing the risk coping arrangements of the poor.

Table 6.5 Major risk management strategies by poverty groups in *Bhadeshwari*

Strategies	Percentage of Households		
	Extreme poor	Poor	Non-poor
Resilient strategies			
Modify consumption	5.7	12.2	27.6
Use informal and formal saving	8.2	15.9	25.2
Taking help from friends and family	2.5	6.7	12.5
Exchange or pawn assets	1.5	7.8	14.7
Work more hours	21.5	22.1	10.8
Weak strategies			
Reduce consumption	21.6	17.8	5.9
Use saving in kind	11.9	14.4	12.6
Borrowing from formal in informal sources	23.7	17.9	8.1
Sell non-productive assets	25.5	28.5	11.9
Sell or exchange productive assets	14.3	17.3	6.9
Fragile strategies			
Drastically reduce consumption	13.4	6.1	2.8
Borrow at usurious rate	9.8	5.8	1.9
Sell large productive assets	8.3	4.8	1.5

Source: Author's survey, 2013. Percentage does not add to hundred as households report multiple risk management strategies. Some respondents, who did not face any crisis during the reference period, remained non-responsive. Reference period is one year.

Impact of risk management strategies: The immediate impacts of risk events on households are loss in income (flow) and depletion of assets (stock) and the need for cash to combat those risks. The long-term repercussion of this is the redistribution of household assets needed to smooth income and build an assets base. Risk management strategies of the household may have impacts on its coping capacities, e.g. more assets depleting strategies weaken the coping capacities of the household. Thus, there is a positive, if not direct, relationship between a household's assets base and ability to deal with risks. The greater the level of assets, the stronger the coping capacity and lower the level of vulnerability (Cohen and Sebstad, 2003).

Table 6.6 Impact of risk management strategies on household's capacity

Risk management strategies	Impact on household's capacity
Consumption reduction Moderate Drastic	- Tight family budget - Nutrition and health problem, long term impact on human capital
Use of financial assets Formal and informal savings Formal and informal loan	- Limited capacity to protect against future risks - Consumption reduction and assets sales to repay loan - Multiple borrowing, over indebtedness
Use of physical assets Selling productive and non-productive assets Exchange or pawn assets	- Reduction of income capacity - Loss of future income
Use of human capitals Work longer Migrate	- Physical pressure, stain, and anxiety - More family responsibility on women - More household income
Use of Social capitals Borrow from friends and family Social network	- Pressure on friends and family - Reciprocal obligations

Adapted from Cohen and Sebstad (2003)

6.4 Adaptation and resilience building

Adaptive capacity is a long-term account of the coping capacity that includes the ability of a household, community or society to learn and manage how to live and adapt in a risky environment. Adaptive capacity refers to the changes in a household's behaviour in response to repeated shocks and to the institutional setup, which influences the risk coping behaviour (Davies 1996). Adaptive capacity is thus based on knowledge and experience of long-term actions for combating risks. This has behavioural impact on current risk coping strategies. For example, experiencing routine occurrences of floods and droughts that affect agricultural production, the people of *Bhadeshwari* have now developed a

tendency to take multiple job opportunities to smooth income fluctuations. In lean time, they take apprenticeship in non-farm jobs such as carpentry, house construction, collective fishing and small trading. After a certain period, when adequate skills and experience is acquired, they either opt for full time employment in those activities, or have a part time arrangement in crisis periods or in leisure time between sowing and harvesting. Poor and unskilled people choose day labour as an extra earning source in bad times. The people in *Ausha* also apply income diversification techniques to adjust long-term fluctuations in income. They attempt to earn from taxi driving, house construction and carpentry. As Sylhet city is close to *Ausha*, some people commute there for a salaried job. Moreover, people have a general tendency to migrate as they have observed that people working abroad have changed the lifestyle of their family back home through remittances.

6.5 External interventions

Mobility map and Venn diagram exercises of the villagers focus on the organizations that directly affect the livelihoods of the two villages. There are six main categories of institutions identified by the rural people as key to their lives. These are health, education, financial services, administration, legal, and support services.

*Health***:** Villagers often use health services from a general physician or a paramedic who practices in a drug shop in nearby bazaar. There are two such shops in the *Bhadeshwari* bazaar and two in the *Toker Bazaar* near *Ausha*. Very poor people go to herbal practitioners, homeopaths and even to quack for cheap services. These practices are less frequent in *Ausha*. For serious health problems, patients of both villages attend to the nearest hospital. For *Bhadeshwari*, the nearest one is the *Upazila* Health Complex in *Koitak* close to *Zawa Bazaar*. As *Ausha* is close to Sylhet city, people hasten to be admitted into one of the five medical college hospitals there. *Bhadeshwari* people also do the same when they get referrals from *Koitak* in the case of life threatening illness.

Education: There is a government primary school inside *Ausha*. FIVDB also run a primary school. Besides this, FIVDB has a Community Learning Centre (CLC) that offers adult literacy, numeracy and life skills e.g. how to use a mobile phone (see Chapter 4 for more information on CLC). There is a high school and college (combined) within three kilometres. The residents of *Ausha* have an advantage in higher education as Sylhet city

is only twelve kilometres away. Two female students reported that they attended the university classes from home. For *Bhadeshwari*, the government primary school is two km, high school is six km and college is ten km away from the village. FIVDB has two primary schools and a CLC programme. Although BRAC ended its financial programme in this village, its primary school continues. Sylhet city is more than 35 km away so *Bhadeshwari* students have to bear travel costs for higher education. One of the respondents in the interview reported that her son took university accommodation to avoid the daily long journey.

Table 6.7 Livelihood interventions in risk management

Institutions	Informal	Formal	
		Market-based	State-run
Health	• Rural doctors • Quacks • TBAs/*Shabikas*	• Dispensary • Homeopath/ Herbal • Private clinics	• Hospitals • Clinics • Health complex
Education	• Informal primary • CLC • Private tuition	• Private school/college • Madrasa	• Primary school • High school/college • University
Financial	• Moneylender • Informal groups	• NGOs • MFIs/Private Banks	• Banks • Post office
Administration	• Informal village administration	-	• Union council • Upazila (sub-district)
Law and enforcement	• *Shalish*	-	• Court • Police station
Agriculture	• Farmers associations	-	• Agriculture extension

Source: Mobility map and Venn diagram exercises of the villagers.

*Financial institutions***:** Both informal and formal financial services are available for the villagers. In *Ausha* financial support from friends and families are prominent in informal services, through *karde-hasanah* or interest free loans to relatives and kinsfolk. There is no repayment obligation in *karde-hasanah*, one can repay anytime and sometimes no repayment is required if the borrower is in severe crisis. For this, fund crisis is not a serious concern in *Ausha*. There is a small cooperative among the farmers, which mobilizes savings to invest in agriculture. In *Bhadeshwari*, moneylenders take opportunity of the credit constraint environment resulting from the low agricultural output. They charge high interest for lending money to the poor and needy. Finance from friends and family is less visible in this village.

Three MFIs operate in the villages: Grameen and ASA are national level MFIs and FIVDB is a local MFI working mainly in the Sylhet region. While Grameen and ASA provide financial services in both the villages, FIVDB has finance and education programmes in *Ausha* and only education programme in *Bhadeshwari*. All these MFIs have microfinancial services including microcredit, microsavings and microinsurance for the poor. There are two commercial banks and one specialised banks functioning in the commercial areas or bazaars near the villages. Specialised bank has agricultural credit services while commercial banks mainly provide remittance services to the rural people. Their main financial services are with small traders and grocers in the *bazaar*. Villagers rarely open an account with these banks. Distance, travel time, documentation and certain minimum requirements are the main reasons mentioned by the respondents. Detailed discussion on financial institutions are available in Chapter 7.

*Administrative***:** There are an informal administrative set up led by the respected elderly in the villages. It is a cultural norm to respect and obey senior citizens. This norm is found stronger in *Ausha* than in *Bhadeshwari*. Formal administration starts from union council that is the smallest unit of local government elected by the people of the villages under a Union (a Union consists of several villages). The council is a body of councillors led by a chairperson. One third of the elected councillors are female by constitution. The union council is responsible for the allocation and distribution of the government fund for development of the villages under a union. Government social safety net programmes, and repair and maintenance of rural infrastructure are supervised and maintained by the union council. Then next tier of the local government is *Upazila Parishad* (Sub-district council) which is also an administrative body elected by the people. *Upazila Parishad* consists of a body councillor led by a chairperson who oversees the activities of the union council. Other local governments such as municipalities and city corporations have very negligible functions and contact with rural people. *Ausha* and *Bhadeshwari* villages are under *Mogolgaon Union* in Sylhet *Sadar Upazila* and *Zawa Bazaar Union* in *Chhatak Upazila* respectively.

Legal interventions: *Shalish* is an informal court in which village leaders mitigate minor social problems such as a quarrel with neighbours, theft, land disputes, dowry and other community crises. This rural system is important for maintaining community discipline and socio-cultural norms. However, its effectiveness depends on the seriousness of the

issue and the capacity of the leaders. Sometimes union council leaders intervene and try to solve critical issues - particularly in political and development issues. During the data collection, I observed such a case in *Bhadeshwari*. The union council chairperson came to mitigate a family dispute over a murder. *Shalish* is stronger in *Ausha*. Apart from the dispute-based meeting, people sit together to discuss various socio-cultural issues once a month. They also try to solve financial problems such as wedding expenditure of a poor family by collecting donations from the rich. In both villages, when resolving a problem goes beyond the capacity of the *shalish*, people go to a formal system that starts from the district court and ends in the Supreme Court.

Support services: Besides the administrative and legal unit, there are support services such as the agricultural extension, police protection, and land registry. The agricultural extension office provides advice, training and sometimes supply of inputs such as seeds, fertilizer or pesticides when farmers face shortages or need high yielding variety (HYV) seeds. There is a village police (*Gram Police*) service under the administration of the Union Council and Upazila Parishad. They maintain security of the villages from theft, burglary, and prevent anti-social crimes. Respondents from both villages reported that police protection was inadequate and symbolic. They mainly guard public premises, public gathering and political meetings. Land registry is another important service that rural people need for registering the sale and purchase of land, and keeping land documents updated. Land dispute is common in rural areas so proper documentation is needed.

6.6 Effectiveness of institutions in resilience building

Institutional interventions aim to strengthen household's resilience to risks. However, a common question is “are these interventions effective?” The effectiveness matrix constructed from the Venn diagram and mobility map exercises gives a snapshot answer to this question associated with the institutions affecting the livelihoods in *Ausha* and *Bhadeshwari* (see Appendix for details). The effectiveness is based on accessibility and affordability criteria reflecting the service provider’s ability to meet the needs of the clients and client’s preference to participation in the programme.

Table 6.8 Effectiveness of institutions

Village	Institutional effectiveness		
	Most effective	**Less effective**	**Least effective**
Ausha	Friends and family Bazaar School	Informal health care Hospital MFIs	Union council Banks Moneylender
Bhadeshwari	Moneylender Bazaar School	Informal health care Friends and family Hospital MFIs	Union council Banks

Source: Venn diagram and mobility mapping exercises of the villagers

From Table 6.8, it is obvious that union council and banks are the least effective institutions for the villagers. They argued that distance was the main barrier to bank accessibility and requirements for minimum balance and other documents were prime obstacles for affordability. Banks require collateral for loans that poor normally do not have, and only the rich can afford. The union council is an institution through the government allocates social safety net allowances. Existing beneficiaries were happy with the allocations but potential candidates complained about the selection procedures and inadequacy of funds. They also expressed no trust in the chairperson and council members due to their nepotism and political biasedness. Leakages in distribution of benefits in the form of unauthorized entry fee, and unidentified deductions are common corrupt practices in remote areas (Rahman and Choudhury 2012). Residents of *Ausha* considered moneylenders as ineffective institutions not because of low accessibility or affordability, but because of low demand for their services. The reason behind the low demand was the availability of funds from friends and family because of strong social networks. Friends and family were the most effective agents in people's livelihoods in *Ausha* followed by bazaar and schools. *Bhadeshwari* considered moneylenders as effective agents as they are available to all groups of people with flexible credit delivery. The only complaint against them is their high interest for loans. Friends and family is less important for *Bhadeshwari* as the social network is relatively weak.

Some institutions are very important for the people but their services become less effective due to low accessibility for distance. Hospital is a prime example of an institution. People want to use the health service frequently but they sometimes try to substitute it for low cost and locally available alternative services such as *herbal* or *homeopaths*. They also opt for rural doctors or paramedics who are easily available at low

cost. Although informal healthcare (services other than a hospital or clinic) has accessibility and affordability criteria, people in both villages consider the informal health services less effective because of low quality services and limited capacity (mainly fast aid medical care).

Focus group discussants in *Ausha* and *Bhadeshwari* expressed identical opinions about Microfinance Institutions (MFIs). Although MFI services are affordable, the accessibility is restricted to some groups and thus less effective. Clients from poor and ultra-poor groups in both villages expressed satisfaction with the microfinance but non-clients (poor as well as non-poor) felt excluded. Non-poor residents know that MFIs credit services are meant for the poor but they claim that it would be better if they could deposit money in MFIs as a safe saving opportunity. In counter argument, Grameen staff said they accept non-member savings. However, ASA had this service before the restriction imposed by Microcredit Regulatory Authority (MRA) on non-member deposits.

To sum up, it is evident that there are intervention failures in market and state-owned institutions in the northeast rural areas of Bangladesh. State failure arises due to that which Scoones (2009) identified as a lack of decentralized politics in development activities (e.g. misallocation of government grants for low political participation of the recipients resulting from corruption and nepotism). Market failure arises due to the lack of people-centric policies and procedures. In the case of financial institutions, for example, people-centric measures might be the mobilisation of non-poor resources to finance the need of the poor, or strengthening cognitive resources of the financial service clients. Institution-centric provisions such as excluding non-poor and extreme poor from certain services might yield financial inclusion gaps in rural livelihoods. These gaps together with vulnerability to risks might push rural people to the den of financial crisis. The next chapter highlights the role of financial institutions and the extent of financial inclusion in northeastern rural Bangladesh.

7. Financial inclusion in *Ausha* and *Bhadeshwari*

This chapter deals with the extent of financial inclusion in northeastern rural Bangladesh. Using participatory evidences, it highlights financial provision (supply side) and financial participation (demand side) aspects of financial inclusion in two villages: *Ausha* and *Bhadeshwari*. The analysis is based on four assumptions. 1) There are urban-rural gaps in all financial indicators. 2) Banks usually exclude the poor people from financial services as they target only the non-poor. 3) Microfinance Institutions (MFIs) include poor in their financial activities where non-poor do not qualify and 4) Focusing poverty reduction through empowerment of women, MFIs target female members leaving their male counterparts excluded from microfinance services. These issues may cause financial inclusion gaps emerging from the inconsistencies in supply-side provision of and demand side participation in financial services. Financial inclusion gap is the focus of this chapter.

7.1 Financial provision in *Ausha* and *Bhadeshwari*

Both informal and formal financial instruments are available to the residents of *Ausha* and *Bhadeshwari*. Informal savings are mainly household-based. Informal loans are either soft interest loans from 'friends and family' or high interest loans from moneylenders. Formal savings and loans are provided and maintained by MFIs and banks.

7.1.1 Financial service providers

Informal service providers: Two major informal service providers are available in *Ausha* and *Bhadeshwari*. 1) 'Friends and family' who provide *karde-hasanah* or *hawlat* - a benevolent patron-client relationship. 2) Moneylenders operate in an exploitative patron-client relationship in which the lender provides loan to clients at a high rate (10-15 percent per month i.e. 120-180 percent per annum). Moneylenders offer flexible loan repayment schedules in contrast with the strictly enforced MFIs' weekly instalment. However, their loans are costly and sometimes unbearable for the poor. Among the informal services, 'friends and family' services are predominant in *Ausha* and moneylenders are more active in *Bhadeshwari*.

Commercial banks: Mobility map and Venn diagram exercises indicate two commercial banks operating within the mobility of the villagers: *Janata* and *Pubali*. Branches of these banks are located in local *bazaars* (commercial places) where villagers gather to buy and sell commodities. Clients include merchants, small traders, grocers and

microentrepreneurs. Some non-poor open accounts in these banks only for remittance transactions. However, many remittance receivers do not have bank accounts, as it is not mandatory for payments. "We just give a pin number and ID and the bank gives us money. We have some apprehensions with banks - distance, minimum deposit requirements and paperwork for example," said a client. Lack of financial literacy is another reason mentioned by PRA participants.

Specialised banks: Farmers in *Ausha* and *Bhadeshwari* can apply for loans from Bangladesh *Krishi* (agricultural) Bank (BKB) located in *Toker Bazaar* and *Zawa Bazaar*. Again, rural people face barriers like collateral and distance and thus service take up is very low. Branch office data shows that only ten farmers from *Ausha* and another seven from *Bhadeshwari* took loans from BKB for cow rearing, planting and harvesting. The default rate is very high (56 percent) and alarmingly some classified loans have disbursements dated back to the 1990s. BKB managers defended their inefficient banking with the poor simply saying, "They are very eager to borrow but insincere to repay".

Microfinance Institutions (MFIs): There are two national level MFIs operating in *Ausha* and *Bhadeshwari* namely, Grameen Bank and ASA. The Sylhet based MFI called FIVDB operates a community learning program in *Bhadeshwari* and both education and financial programmes in *Ausha*. FGD discussants argued that MFI services were affordable to the capacity and accessible to the doorstep of the poor. However, non-poor respondents complained that they have no access to MFI services. They agreed that the poor needed microcredit but the non-poor might get the opportunity to save money in MFIs at least.

7.1.2 Effectiveness of the FIs: financial provision aspect

Two indicators of financial service provision can assess effectiveness of the financial institutions (FIs): coverage and convenience. While coverage measures the percentage of households using a particular financial service, convenience refers to the availability of a service in terms of distance and time (travelling). Informal service providers like moneylenders and 'friends and family' mostly operate within the boundary of the village and thus incur low transaction cost regarding the distance and time. MFI offices are located outside the villages but they provide doorstep services. Banks are total outsiders i.e. all transactions are held in the branch located in urban or suburban areas that are inconvenient for the villagers. Table 7.1 shows the effectiveness of various financial institutions in *Ausha* and *Bhadeshwari* in financial provision aspect.

Table 7.1 Effectiveness of the FIs in terms of coverage and convenience

Financial institutions	Effectiveness	
	Coverage (%)	Convenience
Ausha		
Friends and family	High (85.3)	**More convenient:** Anytime for small amount and banking time for medium and large. Zero transaction cost.
Moneylender	Low (1.8)	**Less convenient**: Not available in the village. Transaction cost involved.
MFIs	Low (28.5)	**Convenient**: Repayment and deposits are at the doorstep. Withdrawals held at branch office. Low or zero transaction cost.
Banks	Low (16.7)	**Less convenient**: No less than 10 km. Time and travelling cost involved.
Bhadeshwari		
Friends and family	Low (21.9)	**Convenient:** Small amounts only. Not always readily available. Low cost.
Moneylender	High (72.4)	**More convenient:** Anytime for small and medium amount; banking time for larger.
MFIs	Medium (54.8)	**Convenient**: Repayment and deposits are at the doorstep. Withdrawal held at branch office. Low or zero transaction cost.
Banks	Low (5.6)	**Less convenient**: No less than 12 km. Time and travelling cost involved.

Source: Author's survey, 2013 and participatory exercises. Effectiveness here means service provider's capacity to meet the client's demand. It does not necessarily mean efficiency that involves cost of fund. The lower the cost, higher is the efficiency and vice versa. For example, moneylending is effective in *Bhadeshwari* but not efficient as it is very costly. Coverage is measured by the percentage of household receiving the services. Convenience refers to service availability in terms of distance, time and transaction cost.

Effectiveness matrix in terms of coverage and convenience (Table 7.2) shows that banks are the least effective for the rural people because of distance and non-inclusive services. Poor people are kept out because of lack of eligibility criteria while non-poor opt out for long distance. MFIs are less effective in both the villages because they work only with targeted people (poor and extreme poor) and thus have low coverage. However, MFI services are convenient due to their doorstep services and cost-effective delivery. Moneylending is effective in *Bhadeshwari* because demand for credit is so high relative to the supply that people even want to use costly services like this. However, moneylending is extremely ineffective in *Ausha* as other low-cost services such as financial services from friends and family are easily available. Financial help from friends and family is insufficient and thus less effective in *Bhadeshwari* but it is the most effective in *Ausha* because of convenience and availability.

Table 7.2 Effectiveness matrix for *Ausha* and *Bhadeshwari*

Effectiveness indicators		Convenience	
		More convenient	**Less convenient**
Coverage	**High**	**Most effective:** FFs for *Ausha* Moneylender for *Bhadeshwari*	**Less effective:** None for both villages
	Low	**Less effective:** FFs for *Bhadeshwari*, MFIs for both villages	**Least effective:** Banks for both villages, Moneylender for *Ausha*

7.1.3 Informal financial instruments

Informal savings: Informal savings are held in both cash and kind. Cash savings are small in amount and are mainly coins dropped inside a *matir* bank (piggy bank) or cash stashed under the mattress. *Matir* bank is made of clay so that a saver can break when it is full or in case of emergency. Cash under the mattress is not frequent as there is a chance of theft or possibility of it being taken by family members, especially children. Non-MFI members use these savings instruments for precautionary measure against small risks. Savings in kind takes different forms. The smallest one is *musti chal* that is a fistful of grain savings in each cooking time. When it becomes a substantial amount, the saver converts it into cash when emergency arises or donates to religious centre e.g. mosque. Savings in kind is held in materials that have store value such as jewellery, livestock, tree, land, food stock etc. Rural people use grain stock as food security against risks and food price volatility. Food store is also used as security for purchasing daily necessities from grocery on credit called *dokan baki*. When the credit reaches a certain level or grocer insists on repayment the client sell a portion of grains from store to clear the balance.

Informal loans: informal loans are provided mainly by two agents: one is friends and family and the other is moneylender. As discussed earlier, loans from friends and family are available at low cost or even zero interest rate. The main source of this type of loan is surplus remittances from abroad and higher agricultural production. As the number of migrants is higher in *Ausha* the flow of fund is eventually higher than *Bhadeshwari*. In *Bhadeshwari*, moneylenders take the advantage of the low level of income and credit constrained economy to deliver money to those who need credit. They charge very high rate either in money or a portion of agricultural output.

Table 7.3 Financial assets reported by residents of *Ausha* and *Bhadeshwari*

Financial Instruments	Household average	
	Ausha	***Bhadeshwari***
Informal savings (under the mattress, *matir bank*)	118	185
Savings in kind (*musti chal*, livestock, tree, jewellery)	7769	7298
Food storage (month equivalent)	8-10	5-7
Institutional savings (MFIs, Banks)	9295	7676
Informal loan (friends and family, moneylender)	4487	4010
Institutional loan (MFIs, Banks)	8163	9638
Remittances	6155	4750
Others (e.g. insurance)	1115	996

Source: Author's survey, 2013. All figures are in Bangladeshi Taka (BDT) except for the food storage. Food storage is in month equivalent i.e. for how many months they do not have to buy food grain from the market. *Musti chal* is converted into cash at market price. *Matir bank* amount is converted into monthly average from daily approximate amount put in it. Institutional savings, savings in kind and formal and informal loan amounts are in outstanding balance on average. Rest of the figures are in monthly average.

7.1.4 Formal financial instruments

The major financial instruments available for residents of *Ausha* and *Bhadeshwari* are payments, current accounts, savings accounts, fixed deposits, microenterprise loans, microcredit, microsavings and agricultural loans. These are provided by banks and microfinance institutions (MFIs). Although many insurance companies deliver microinsurance in rural areas of Bangladesh, none of them operates in *Ausha* and *Bhadeshwari*. However, existing MFIs have built-in microinsurance in their financial programs.

Payments: Residents of *Ausha* and *Bhadeshwari* receive payment services from banks located in *bazaars* no less than 10 kilometres away from their home. The main service they use is remittance payments. Banks provide this service over the counter (OTC) by simply verifying a PIN number and national ID (or any photo ID) of the customers: no account holding is obligatory. ASA started this service in collaboration with National Bank Limited and Western Union in 2010. Recently bKash, Dutch-Bangla bank and MobiCash have set up their agents in *Toker Bazaar* near *Ausha* and *Zawa Bazaars* near *Bhadeshwari*. They provide mobile financial services including domestic and international remittance services. However, no respondents of this study have reported to use the services yet.

Savings and loans: Banks have savings instruments but these services are meant for the non-poor, as they require minimum savings that poor people cannot afford. About 16.7 percent in *Ausha* and 5.6 percent in *Bhadeshwari* have accounts in banks (Table 7.1). However, very few people use bank accounts regularly and among them, only a negligible

number have taken loan from the bank. Bank loans are beyond the reach of the poor as they lack collateral. Savings and loan accounts with MFIs are significantly higher among the poor who are eligible. There is no room for the rich in MFIs except for Grameen bank, which accepts non-member deposits.

Insurance: Some insurance companies offer microinsurance services to the rural poor in Bangladesh. They have low coverage at present but they are growing. No insurance companies were found to operate in the villages under study. However, MFIs provide insurance package embedded in their loans and savings services. The package contains two types of insurance: loan insurance and life insurance. Clients have to pay certain micro premiums. In the case of death, the family receive payback and the loan is paid off.

7.2 Financial participation in *Ausha* and *Bhadeshwari*

While financial provision means the market's capacity or willingness to include people in the financial services, financial participation refers to the client's ability or willingness to participate in the financial process. In this section, I used qualitative data from PRA and FGD exercises to discuss the effectiveness of financial instruments in rural livelihoods. Four PRA instruments were used in this analysis such as a) direct observations, b) mobility map, c) Venn diagram and d) pairwise ranking. Focus Group Discussions (FGDs) were used to draw perceptions and preferences about the financial services. Participants discussed the role of financial institutions in livelihood security and identified shortcomings in the financial services. Male and female participants debated gender issues in financial services and coping capacities.

7.2.1 Effectiveness of the FIs: financial participation aspect

Effectiveness of financial institutions can be measured from the client's perspective similar to that in service provision aspect discussed in section 7.1.2. Determining factors are now affordability and accessibility measured from the mobility map and Venn diagram exercises by the rural people (for details, Appendix A1.5 and A1.6). Interestingly, the effectiveness outcomes (Table 7.2 and 7.4) resulting from both the provision data (mostly quantitative) and participation data (qualitative data). This ensures the quant-qual triangulation and validity of the financial inclusion data.

Table 7.4 Effectiveness of the FIs in terms of affordability and accessibility

Financial institutions	Effectiveness		
	Affordability	Accessibility	Decision
Ausha			
Friends and family	High	High	Most effective
Moneylender	Low	Low	Least effective
MFIs	High	Low	Less effective
Banks	Low	Low	Least effective
Bhadeshwari			
Friends and family	Low	High	Less effective
Moneylender	High	High	Most effective
MFIs	High	Low	Less effective
Banks	Low	Low	Least effective

Effectiveness here means client's capacity to use the services. Again, it does not mean efficiency. For example, finance from friends and family is less effective in *Bhadeshwari* but it is efficient because of low or zero cost. Affordability is determined by the actual use of the services reported by the respondent through 'frequency' in mobility map and 'importance' in Venn diagram. Similarly, accessibility is determined by 'distance' from mobility map and 'access' from Venn diagram. Decision is obtained using effectiveness matrix (see Appendix A1)

'Friends and family' is highly effective in *Ausha* but less effective in *Bhadeshwari*. This is because, as argued by the discussants in FGDs, the social network is very strong in *Ausha* but relatively weak in *Bhadeshwari*. According to them, remittance is the main factor behind the social bond: "Strong feeling for the family members grows while living abroad". Moneylenders take the full advantage of credit-constrained *Bhadeshwari*. They are still active in this village although MFIs are in operation. However, moneylending is almost absent in *Ausha*. Residents of *Ausha* have low access to moneylenders as no one in this village runs this profession. If anybody desperately needs the services of moneylender, he or she has to go outside the village. Although MFIs members emphasized that their involvement in microfinance is useful and effective, the overall performance is downgraded as the non-members are excluded from the services. Banks are least effective in terms of affordability and accessibility as in case of coverage and convenience criteria illustrated in previous section.

7.2.2 Financial needs and preferences

Pairwise ranking exercises (Appendix A1 for details) are used to understand the pattern of financial needs and preferences of the villagers. The outcomes of the exercises also provide background information for FGDs with poverty groups and financial services providers.

Table 7.5 Preference ranking for financial institutions

Financial institutions	Ranking	
	Ausha	***Bhadeshwari***
Commercial bank	IV	IV
Microfinance Institutions	II	I
Friends and family	I	III
Moneylenders	III	II

Adapted from the pairwise ranking exercises of the villagers.

As in case of financial service effectiveness, banks are the least preferred institutions in both villages. Distance, minimum deposits, collateral for loans and documents required for opening accounts are the core reasons mentioned by the PRA participants. Considering deficit or crisis finance, assistance from 'friends and family' is the first choice in *Ausha* due to the strong social network. Next in the list is MFIs followed by moneylenders. MFI is the first preference in *Bhadeshwari* followed by moneylenders and 'friends and family'. High demand for credit even at usurious rate from moneylenders shows that residents of *Bhadeshwari* are more credit risk than *Ausha*. Unlike *Ausha,* non-poor in *Bhadeshwari* offered loans to the poor at a moneylender's rate instead of soft loan. Friends and relatives in *Bhadeshwari* are not as those compassionate as in *Ausha* indicating weak social ties in the village.

Respondents considered five types of financial instruments in preference ranking exercises in both villages (Table 7.6). Residents of *Ausha* expressed top preference for informal loan mainly from 'friends and family' and very rarely from moneylenders. Remittance payment was the second desirable service to the villagers. Remittance was a major source of income for non-poor and a source of soft loan (interest free) for the poor in *Ausha*. This was a medium of strong poor – non-poor social bond. Due to these two informal financial instruments, people never felt that they were in credit constraint. Consequently, they have less preference for formal microloans and less desire for saving money through formal and informal means. Among the savings instruments, *Ausha* residents preferred mandatory savings to voluntary and home-based informal savings. This indicates that they do not depend on savings for emergency finance. They manage it from 'friends and family'. They usually prefer savings for future investment purposes.

Table 7.6 Preference ranking for financial instruments

Financial institutions	Ranking	
	Ausha	***Bhadeshwari***
Formal microloan	III	I
Informal loan	I	II
Mandatory savings	IV	IV
Voluntary savings	V	III
Informal savings	VI	V
Remittance payments	II	VI

Adapted from the pairwise ranking exercises of the villagers. Mandatory and voluntary savings together constitute microsavings. Informal loan are borrowing from friends and family or moneylender. Remittance payments are formal or informal services people use to receive remittances sent by relatives abroad

Most of the residents of *Bhadeshwari* preferred microloans from formal sources for household and investment finance. The next preference was informal loan mostly from moneylenders similar to the case of the institutional preference matrix (Table 7.5). *Bhadeshwari* people have weak social link and thus have low opportunities to receive interest free loans from 'friends and family'. Overall, people are credit constrained and hence they try to overcome the problem by saving more. According to PRA participants, voluntary and mandatory savings in microfinancial institutions crowded out the traditional savings. Remittance payment is the least required services among the financial instruments for *Bhadeshwari* people. The number of immigrants is not as large as in *Ausha*.

7.2.3 Precautionary savings and credit constraints

Savings largely depends in cash on hand and flow of income. When actual cash in hand is below the expected level, the individual tries to build assets to compensate the shortfall. As a precaution, they build an emergency reserve against uncertainty or a rainy day (Deaton, 1991, 1992, Carroll, 2001). In consumer behaviour two types of agents are generally observed: *Impatient* consumers prefer current consumption (and investment) to future consumption (i.e. savings), whereas *patient* consumers prefer to curtail current consumption to build assets to insure future income shortfall. When the credit market is smooth, individuals and households borrow and lend. However, facing liquidity constraints or a market with limited credit facilities, households develop precautionary savings motive. Inability to borrow in bad times compels prudent and patient households to accumulate assets in good time. "Liquidity constraints reinforce the precautionary demand for assets" that is likely even for impatient households (Deaton, 1992, p. 255).

PRA and FGD exercises in two villages (*Ausha* and *Bhadeshwari*) reveal two scenarios of savings behaviour:

Observation 1*: In the absence of liquidity or credit shortage, poor people's willingness to save is less when there is a strong social network. People with surplus income provide interest free loans to those with an income deficit*

Observation 2*: In credit-constraint environment or in a market with limited credit facilities, poor people's willingness to save is more when there is a weak social network. People with surplus income lend and charge high interest to those with income deficit.*

The first observation is relevant for *Ausha* where household earnings are higher (as result of agricultural output and remittance) and credit constraints are offset by charity, grants, gifts and zero interest loans through the social connections. Moreover, there are three MFIs delivering microfinancial services to the poor. Because of the easy availability of funds, poor people do not worry about precautionary savings or savings for a rainy day. The second observation fits with *Bhadeshwari* where a mono-harvest flood plain causes income and credit constraint situation and moneylenders take the opportunity to charge high interest for loans to poor. The credit market is inadequate even though two MFIs provide microfinance in this village. People want to save money to manage unanticipated crises and minimise the cost of borrowing for future investment. Relatively higher informal savings per household in *Bhadeshwari* (Tk. 118 in *Ausha* and Tk. 185 in *Bhadeshwari*, Table 7.3) confirms Deaton's view that credit constraints motivate precautionary savings (Deaton 1991; 1992).

7.3 Financial inclusion gap

As discussed earlier, financial inclusion is vital for household investment and coping strategies to enhance income security and reduce vulnerability. Financial exclusion, on the other hand, pushes the household to the ditch of financial crisis. Financial crisis and financial exclusion may reinforce each other to breed acute disaster social exclusion. Despite various efforts to scale up the extent of financial services in Bangladesh, inclusion gaps still exist in rural areas undermining the coping capacity of the poor. As discussed earlier, financial inclusion not only depends on better access and effective use of financial services but also on the development of cognitive resources among the clients i.e. better understanding of financial services (Niño-Zarazua 2006; Niño-Zarazua and Copestake 2009) and social intermediation process (Chua, et al 1999). Residents of *Ausha* and

Bhadeshwari identified five types of financial inclusion gaps in their livelihood analysis: payments, savings, borrowing, cognitive resources and gender gaps.

7.3.1 Payments gap

Two types of payments exist in an economy: 1) transaction payment and 2) transfer payment. The former comprises payments from person to business (P2B) such as utility bills or merchant payments, business to person (B2P) such as payrolls or dividend payments, person-to-person (P2P) transfer of money such as domestic and international remittances and person to government (P2G) such as tax, levy. The latter contains payments from government to person (G2P) transfer such as grants, and pension (Nabi, et al 2012). In participatory exercises, residents of *Ausha* and *Bhadeshwari* recognised transection payments in the form of domestic and international remittances (P2P) and utility bill (electricity and mobile bill) payments (P2B). They also mentioned transfer payments (G2P) in the form of cash and food allowance to the elderly and other vulnerable groups. The respondents reported the existence of payment gaps in both villages.

In case of transactions, immediate access to cash is necessary for prompt payment of services and efficient management of crises. However, most of the people did not have access to a bank account and those who had access could not use it properly because of travel cost and time, as bank branches are located in mostly towns or cities. The problem is more serious in *Bhadeshwari* than *Ausha* as the latter is closer to Sylhet city (12 km and 40 km). Most of the non-poor respondents in the FGDs said that they have bank accounts that are normally used for receiving remittances from abroad. The number of people with remittance account is higher in *Ausha* than *Bhadeshwari* as the number of immigrants is higher in the former area. A rich man in *Ausha* said, “My son lives in the UK. He sends money to my account. I go to bank at least once a month”. In a similar situation, a non-poor respondent in *Bhadeshwari* said, “My son sends money from Dubai. I just go to bank, show my ID, and tell a pin number to the officer that my son sends over the phone. I get the money, that’s it. I don’t have any account”. He said that he does not like bank accounts. “Withdrawing money from account is troublesome”. Other non-poor respondents in both villages reported that they have bank accounts but did not use them frequently - only for remittance and deposits. They mentioned that the reason behind the low use frequency is distance.

Discussants in the poor and the extreme poor groups reported that in addition to distance, they faced a lack of enough money and proper documents to open a bank account. Some of the respondents reported feeling shy about going to a bank as they were illiterate and did not understand what is going on inside. "Only traders and rich people go there. We day labourers have no much money", told a respondent who earns his livelihood working for others. Respondents know that having a place to deposit and withdraw money when necessary is something like a 'ditch in the desert' of crises. However, they also know that MFIs working in their area do not have instant withdrawal facility. Withdrawal is restricted by amount (some percentage of total deposit) and time (at least one working day after the proposal is made). These restrictions compel them to go for other sources of money for crisis finance that is presumably costly or damaging e.g. borrowing from moneylender or selling assets.

In transfer payments, allocation and distribution gaps are obvious. The government distributes aid and grants in rural areas through a local administrative body – the union council. Recipients of the benefits in *Ausha* and *Bhadeshwari* were happy with the receipts but potential beneficiaries argued that the council members were biased towards relatives and political alliances. Discussions with union council members revealed different picture. In *Bhadeshwari,* government allocation is significantly less than the expected amount of grants. The number of potential non-recipients is very high in the village. However, the gap between the number of potential beneficiaries and the number of recipients is narrow in *Ausha*. "Government allocates a certain amount for each village without considering the number of potential recipients", said a councillor. Her claim matches with the Household Income and Expenditure Survey (HIES) data that shows the overall safety net outreach covers only 25-30 percent of the poor in Bangladesh (HIES 2010).

7.3.2 Savings gap

As with payment gap, there are savings gaps too. The reasons are similar. Non-poor respondents argue that they maintain savings account in the bank to deposit remittance from abroad or to deposit money borrowed from the bank for agriculture or business. However, the frequency of using of these accounts is low because of distance and purpose of the savings. They said that they use the savings for both precautionary (protective) and investment (promotional) purpose. As 'distance' matters, they want MFI membership that

can allow them to receive doorstep financial services as the poor community is getting. ASA had associate membership for the non-poor community up until 2012. In this programme, they were allowed to save but not borrow from the ASA. They were happy in this process as it allowed the non-poor to contribute to financing the crisis management and household investment of the poor through MFIs. According to ASA field staff, the programme was terminated as per the instruction of the Microcredit Regulatory Authority (MRA). No MFIs are allowed to accept deposits from non-members. The only exception is Grameen bank that functions under the Grameen Bank Act, 1983 instead of the MRA.

Respondents in the poor and the extreme poor group have mixed opinions about savings instruments in the MFIs. One member from FIVDB in *Ausha* said "I wanted only to save in FIVDB but 'Sir' (the loan officer) said that membership means loan and savings together not savings or loan alone. Therefore, I opted out. I do not want loan anymore". When asked why savings only, she replied that her husband was a shoemaker. "We took loan for a shoe shop. He is now earning enough. We renovated our house. We now want to save for the future of our children". Other respondents who also wanted to be a save only members reported that to continue the membership they take loan and give it to others. This practice remains unreported to the MFIs, as it is not permitted by any institution. However, there is a possibility that members would become small moneylenders if this practice continues. When asked about the uses of their savings most of the respondents said in their own dialect '*Bipod-Apod mokabela*' (combating crises and emergencies) and '*Bhobishot Unnoti*' (future prospects). This statement mirrors the two roles that are available in various articles on savings behaviour: protective or precautionary and promotive or investment (Hulme et al, 2009). Between the two roles, they prefer the precautionary role of savings for crises finance. They argue that savings for future investment may be replaced by borrowing from MFIs but saving for '*Bipod-Apod*' is what they struggle for as MFIs impose withdrawal restrictions. Moreover, there is no provision for emergency loans by any MFIs in *Ausha* and *Bhadeshwari*.

Non-member respondents (FGD participants not inclined with any MFIs) argue that they do not have the 'right place' to save. Low-income people have fluctuating income. They want to save when there is a surplus income to spend in deficit or emergency. When there is no secure place to save, the temptation for spending is high. "Our savings at home is exposed to theft or excessive demand from children or other family members. We do not

have secure place to save. Therefore, we spend anyway. We drink more tea, smoke more cigarettes when we earn more". A woman from *Bhadeshwari* said, "My husband goes to gambling whenever he earns more and always comeback penniless". Unlike MFI members, non-member respondents cannot resist their children, family members or even neighbours by saying, "I cannot give you money. My money is held with *Samity*" or "I can't, I have to repay loan instalment". In the end, "We spend everything we earn. We have no money left for the future". The 'right amount to withdraw' was no longer a problem when the regulatory authority permitted withdrawal of any amount (MRA, 2010). However, in reality FIVDB is following the previous rule and does not allow its members to withdraw savings when a loan instalment is running. Grameen allows withdrawals of any amount from personal savings accounts but restricts withdrawals from special accounts (see chapter 4 for details). Grameen members have to go to the branch office to collect savings when approved (Grameen 2011). However, the ASA now allows its clients to withdraw anytime in any amount (ASA 2012) but it maintains a post-withdrawal minimum balance of Tk. 100 before the MRA rule (ASA 2010). Members of the ASA reported that the field officer allowed an instant Tk. 500 withdrawal, in the group meeting. "For any amount more than TK. 500 you have to go to the branch office", said a respondent. MFI members complained about the 'right time to withdraw' their savings. The MRA rules say that a client has to give written notice of 7 days to withdraw deposits (MRA 2011). As discussed earlier, this withdrawal time compelled the client to search for instant payment in case of emergency that sometimes were costly. These withdrawal restrictions and savings obligations contribute to the inefficient role of savings in protection and promotion of household resources. In order to ensure insurance role of savings against crises, MFIs have to modify the attributes of their savings instruments with three rights: *right* place to save and *right* time to withdraw the savings in the *right* amount.

Regulatory restrictions on savings: MFIs are regulated by the Microcredit Regulatory Authority (MRA). According to MRA regulation, MFIs can offer three types of savings: compulsory, voluntary and time deposits. The total deposit balance of an MFI is not allowed to accede 80 percent of the principal loan outstanding. To mobilize *voluntary savings,* an MFI needs to have five years of microcredit experience with three years of consecutive profitability, 90 percent recovery rate in current loans and 95 percent recovery rate at accumulated loans. For time deposits, microcredit experience and

consecutive profitability period are ten years and five years with recovery rates similar to the voluntary rate. Voluntary and time deposit separately must not exceed 25% of the total capital of the organization, which includes donations and retained earnings (MRA, 2011). These prudential requirements of the MRA would adversely affect MFIs' savings mobilisation (IFC 2011). Restrictions on savings make clients 'net borrowers' which mean that the rate of assets accumulation is slower in terms of net worth than that in 'net savers'. However, as net borrowers are self-regulatory agents (less likely to be bank or MFI run) the security of deposits is a less worrying issue than in the case of net savers.

7.3.3 Borrowing gap

Like payment and savings gaps, there are borrowing gap too. The non-poor do not have any association with MFIs and thus are not eligible to receive loan facilities from these institutions. Many of them have bank accounts but they are either current accounts or savings accounts. Very few of them take loans from banks. Overall, the non-poor have less access to bank credit and zero access to MFI finance. As mentioned earlier, the poor and extreme poor have almost no access to bank credit, as they are considered non-bankable by banks. However, they have access to MFIs. Grameen Bank, ASA and FIVDB have members from 82 households in *Ausha* altogether where there are 88 poor and extreme poor households according to PRA exercises. Almost all eligible households are covered by those MFIs assuming that there are no multiple memberships (which is literally unauthorised) from a household. In *Bhadeshwari*, FIVDB has no financial programme and Grameen and ASA covers 119 households altogether out of 126 eligible households. Again, potential clients are almost under the microcredit services. However, the non-poor in both villages (61.1 percent in *Ausha* and 41.5 percent in *Bhadeshwari*, Table 5.12) remain outside the range of MFIs financial services. Not that all of them require financial services from MFIs but they think they are excluded.

7.3.4 Cognitive resources gap

Financial inclusion is determined by the market's capacity to provide appropriate financial services and the client's capability and willingness to use these services. Financial inclusion practice is sustainable when these determining factors are matched with financial education (Mitton 2008). The market's capacity to deliver appropriate financial services largely depends on its marketing strategies and staff training that in turn raises financial awareness and market literacy among the clients through social

intermediation (Chua et al, 1999). Clients on the other hand gain financial capability through socialised and experimental learning in the group meeting, financial literacy training and learning by using financial services (Zarazua and Copestake 2009). In this interactive process, clients develop behavioural and cognitive resources that contribute to their coping capacity and resilience building against risks.

In *Ausha* and *Bhadeshwari*, I investigated the status of cognitive resources through direct observation of the group meeting using *overt* (evident observation) and *covert* (secret observation) methods. In an ideal group meeting, members discuss social and financial issues and practice some disciplinary norms to keep them updated (e.g. reciting 16 decisions in the Grameen Bank group meeting). They sometimes participate in training programmes such as adult learning and basic numeracy classes. FIVDB provides a functional literacy programme in two villages. Under this programme, each village runs a Community Learning Centre (CLC) and a library with books appropriate for children, adults and adolescents. Members of the CLC participate in training on basic literacy, lifelong learning and social mobilization courses (FIVDB 2011). ASA does not offer such training for its clients. It concentrates mainly in microfinance delivery and recovery. Participation in the group meeting is no longer mandatory and joint liability has been replaced by the individual liability (ASA 2010). "We put weekly instalment cash inside the passbook and send it to the cashier when we find no time to join the group meeting", said one ASA member from *Bhadeshwari*. This flexibility undermines group based learning and makes group meeting a transaction only gathering. In direct observation of MFI group meetings, I found loan officers busy with collecting loan instalments and savings. They had no time for financial consultation. "My only concern is to keep recovery rate hundred percent", said a loan officer in a group meeting in *Ausha*. Financial inclusion is incomplete and unsustainable when service providers only care for access to financial services and pay no attention to financial advice and training to improve the financial capability of clients (Ainscough and Halliwell 2012). Financial learning is important for better access and efficient use of financial services.

7.3.5 Gender gap

Focus group discussions revealed gender dimensions of financial management and coping strategies. During the session, women expressed more concern about coping with crises than their male counterparts. They usually saved money from daily expenditure and *musti*

chal from daily cooking as precautionary devices against micro crises such as illness, injury, and children's pocket money for school. Sometimes, they converted accumulated savings into store value savings such as livestock, plant saplings, or even a piece of land. MFI members accumulate cash for weekly savings in their accounts. These behaviours reflect women's *patience* in their preference of the protective role of savings ahead of current consumption. There is a famous slogan among the women in both villages: "We save in even times to spend in odd". Men, on the other hand, are *impatient* in general who prefer current investment to future savings. Thus, they are more interested in borrowing and in situations of credit constraints, they prefer savings directed to investment. Most of the male discussants argued that they were excluded from the financial services as most of the MFIs gave loans to women only. In separate FGDs, MFIs field staff reported that microfinancial services to households went through the account of women as they proved themselves more efficient in credit management and repayment than their male partners. However, a male member of a household takes the strategic role. He motivates his wife to take a loan from MFIs and hand it over to him. In return, he offers repayment of weekly instalments (of loan and saving) on her behalf. His counterpart sees nothing to lose and only gains in savings ownership. Ultimately, financial behaviour retains. Men are less interested in precautionary savings and consider loan instalments as future savings that help in building assets. They believe in the promotional role of savings i.e. savings turns to investment. Women care about the protective role of savings i.e. precautionary for risk finance.

7.4 Financial inclusion implications

Macroeconomic evidence suggests that a well-developed financial system has a positive impact on economic growth promoting income equality and reduced poverty (Demirgüc-Kunt and Levine 2008). At the micro level, financial inclusion provides relevant tools to stimulate household investment and coping strategies. It is vital for financial stability and livelihood security (Prasad 2010). In micro-macro linage, financial exclusion is rural poor phenomenon as most of the non-poor in urban and rural areas are either included in a financial system or are within its range. The following discussion is based on participatory analysis of the perception of rural people in inclusive rural finance.

7.4.1 Inclusion gap impact

It is evident from FGD discussions that financial inclusion gaps arise due to two types of exclusions: 1) client exclusion such as the segregation of the non-poor and poor males from MFIs, and marginalising the extreme poor from government transfer and 2) service exclusion i.e. lack or shortage of financial services.

1) Client exclusion: The main reasons for client exclusions are distance from service points and reluctance of the service providers or receivers. The non-poor are less interested in financial services of the banks located in distant urban areas. Banks, on the other hand, consider services to low income groups less profitable. MFIs target only female poor people, ignoring their male counterparts. The financial flow of surplus funds of the non-poor to finance the deficit of the poor occurs in informal ways in the villages. In *Ausha,* this is through low cost, benevolent patron-client relationship. However, in *Bhadeshwari*, moneylenders take on an exploitative patron-client role and charge very high interest. The major sources of deficit finance are external services such as loans and savings of microfinance institutions. In order to be self-reliant, a village needs to formalise financial intermediation and rely less on external funds. In this case, MFIs might accept deposits from the non-poor, and disburse loans to those who need investment and emergency funds. In the case of government transfers, the agents responsible for distributing the funds are often charged with fund inadequacy, nepotism and corruption. Respondents reported that many destitute households remained excluded from government grants in *Bhadeshwari* but the number was negligible in *Ausha*. The solution to all client exclusion problems lies in minimising the distance and introducing inclusive financial services.

2) Service exclusion: Exclusions from financial services oblige clients to face difficulties in three cash demands: i) day-to-day transaction, ii) emergency finance and iii) investment. Respondents in both villages reported the following deficiencies:

i) Unmet transaction cash: The livelihoods of the extreme poor, who depend solely on government grants or NGO charity, are the worst affected among the financially excluded people. Without the allowance, they can hardly manage day-to-day transactions let alone other finances. FGD respondents from the poor and non-poor groups argued that funds for business activities were easily available in various formal and informal sources, but cash for daily transactions and emergencies was difficult to manage. Due to the lack of a

proper financial mechanism, rural people usually keep small amounts of cash at hand and maintain store value assets such as food grain, jewellery and livestock. Sometimes they have no cash at hand or find no instant buyers for store value assets and thus face liquidity crisis. They manage daily transactions in an almost noncash way. For example, they buy daily necessities from a grocery shop on a credit agreement (*dokan baki*) that they will repay from crop sales at harvest time or following any other cash inflow. For big purchases, they sell grains from stock or liquidate store value savings and use the cash for transactions. Discussants argued that noncash transactions were inconvenient and thus they desired an alternative system that would allow them to deposit and withdraw money at the right time.

ii) Unfulfilled emergency need: Another unmet demand is cash for emergency finance. Previously people used informal savings in cash (i.e. in *matir bank*) or kind (i.e. livestock, food storage) as precautionary measures for emergency finance. These practices have been drastically reduced by savings and credit practice of MFIs. Now MFI members accumulate money bit by bit for weekly loan and savings instalments. Informal saving habit has thus transformed into formal savings and loan repayment habits. Financial asset holding is now less flexible as savings withdrawal is under the MFIs control. A client's control over savings is limited by time-consuming withdrawal procedures and certain restrictions. In the group discussions, respondents explained how they dealt with emergency demand for cash: they go to friends and family or a moneylender for cash on condition that when savings withdrawal or loan proposal is approved they will pay back the emergency loan immediately. In the case of friends and family, they may get interest free loans but moneylenders always charge very high rates.

iii) Enforcement in credit: FGD participants argued that they benefitted from relatively low interest loans from MFIs compared with the informal sources. However, they claimed that informal sources have some advantages. *Firstly*, there is no procedural delay in loan allocation. "Anytime you approach a moneylender, you will get the money", said one discussant. *Secondly,* repayment is flexible, monthly interest payment and the option of full repayment at any time, rather than weekly instalments spread over a year. "You do not have to worry about repayment every week", said another respondent. *Thirdly*, unlike MFIs there is no repayment enforcement. "If you fail to repay in a particular month the moneylender is not doomed as he or she knows you will repay the whole amount including interest in the end", argued a respondent who is very annoyed with MFIs'

weekly repayment pressure. As a whole, although they preferred the low cost funds from MFIs, they urged for more flexibility in repayment schedules preferably monthly instalments. They also wanted diverse loan portfolios including agricultural, seasonal, housing and emergency. Anxiety arising from repayment enforcement is one of the major crises in rural livelihood. "Loan officer comes for the second time in the evening to collect default loans. They never leave our doorstep until we repay in full or promise to compensate in the next week if it is partial", said one anxious respondent. In extreme cases, they take loans from the informal sources to compensate default instalments which opens the door to a 'vicious circle of borrowing' – taking loan from one source to repay the instalment of the other. Tight repayment schedules and strict enforcement discourages clients' participation in microfinance and worsens their credit worthiness.

7.4.2 Discrete microfinance vs inclusive rural finance

Discrete microfinance focusing only on poor women cannot solve the financial exclusion problem as it deliberately excludes poor male and all non-poor from financial services. It sometimes excludes the extreme poor and vulnerable groups who desperately need asset transfer services rather than microloans. Inclusive financial system, on the other hand, covers clients of all financial services including microfinance and asset transfers (government aid and grants). Service providers in inclusive finance comprise, in addition to conventional MFIs, all agents of rural finance including government, banks, credit union, and savings and credit cooperatives (Choudhury 2010). While distance is the major barrier to financial inclusion in rural areas, discrete microfinance only reaches the doorstep of its own clients ignoring the financial needs of others. Conventional microfinance mobilises clients' savings and relies heavily on external sources for its loan fund. Robust finance might include the non-poor who have surplus funds but show less interest in distant banking. It could mobilise these funds to minimise MFIs' reliance on external funding. While discrete microfinance is aid-dependent, inclusive rural finance tends to be self-reliant on internal resources. This research shows that microfinance practice in rural areas of Bangladesh is still incomplete and disconnected. Existing financial inclusion gaps indicate that there are intervention failures in the development practices. We need to address this failure to minimize the poverty and vulnerabilities in rural areas of Bangladesh. One of the ways is to expand the outreach of the existing model and make room for inclusive finance. Next section provides a brief description of inclusive finance model along with recent innovations in this field.

7.4.3 Inclusive finance model

The basic difference between discrete microfinance and inclusive finance lies in the financial services and delivery points. Microfinance is simple finance (mainly microcredit) to homogenous groups (e.g. poor women). Inclusive finance, on the other hand, is robust finance (including all components of microfinance) in response to diverse demand of people. Inclusive finance follows a need-based approach to financial services delivery: 1) Assets grants and soft loans for the extreme poor. These include cash allowances, food grants, and productive assets such as poultry and livestock with training on loans and savings. 2) Microfinancial services for the moderate poor. 3) Microenterprise loans together with a component of microfinance for the microentrepreneurs. 4) SME loans from mainstream banks for non-poor. Service providers might include domestic payments, international remittances, savings and insurance services at all stages.

A fundamental way to minimize financial inclusion gaps is the expansion of financial outreach in a cost effective way i.e. lowering the transaction cost in terms of distance and time. One way of extending financial inclusion is the *agent-banking* model that brings bank and financial services to the doorstep of the rural people through agents or retailers. A more sophisticated way of deepening financial inclusion is through *Mobile financial services (MFS)* which combines banking and financial services with mobile networks to execute a wide range of financial transactions, from money transfers to loans and savings using a mobile phone. The MFS model uses the vast agent network of mobile phone operators (MNOs) and virtual airtime to minimise the transaction cost of financial services as well as minimising the distance and travel time of the clients. The next chapter concludes the study with a summary of the findings, a snapshot of the two models and a set of policy recommendations.

8. Conclusion and outlook

The study draws on three important aspects of livelihoods: vulnerability context, coping strategies and financial inclusion. It focuses on two villages called *Ausha* and *Bhadeshwari* located in the northeast region of Bangladesh. Using participatory methods and quantitative evidences from primary and secondary sources, the study provides a comprehensive understanding of vulnerability to poverty, coping strategies and potential livelihoods opportunities in rural areas in northeast Bangladesh, in the division of Sylhet. The analysis provides useful information on livelihood interventions in household strategies focusing the role of financial inclusion.

8.1 Vulnerability context

Vulnerability context, including shocks, trends and seasonality, is a subset of livelihood context comprising livelihood strategies and external interventions needed for livelihood securities. Many factors contribute to vulnerability of the rural households. This study focuses on vulnerability to poverty due to risk related shocks and emphasises on strategic uses of household assets to confront such risks.

Life in the rural areas of Bangladesh is subject to a wide variety of risks such as flood, drought, epidemics, illness, death, inflation, and unemployment. Some of these are natural and others are manmade. Risks can be idiosyncratic (illness, accident, theft) or covariant (droughts, earthquake). They are also classified according to the frequency and severity: catastrophic (cyclone) and non-catastrophic (minor illness). Residents in both villages have classified *Bipod-apod* (risks) in their own language as *Chhoto* (micro), *Majhari* (meso) and *Borho* (macro). They argue that they could manage *chhoto* crises such as minor illness by individual efforts and *majhari* crises such as land dispute with the help of community or external interventions. However, they expected government funding to mitigate *borho* crises such as floods, and cyclone. The seasonal nature of income and employment in rural areas largely depends on seasonality of crisis events. There was a crop failure in both *Ausha* and *Bhadeshwari* in 2012 due to *khora* (minor drought caused by uneven rainfall) that comes every 2-3 years, affecting agricultural production and food security. *Khora* affects *Bhadeshwari* rigorously as it is a mono harvest low land area. Floods have a similar impact on agricultural land in the village that normally goes under water for 3-5 months during monsoon season. Extended rainfall

causes damage to crops. As high land, the severity of flood may be low but harshness of drought is considerably high in *Ausha*.

8.2 Livelihood strategies

The livelihood strategies include income generating activities, risk management strategies and the role of institutions in the context of vulnerability to risks. Income generating activities in *Ausha* and *Bhadeshwari* are farm-based which are not sufficient for livelihoods. Particularly for *Bhadeshwari*, agricultural production is low as lands are mono-harvest i.e. producing a single crop a year. To avoid income risk from low production, residents of both villages diversify income in various non-farm activities such as migration, salaried job, small trading, fishing and day labour. Households develop coping and adaptation strategies to manage risks using various resources. Strengthening the capacity often needs resilience building through self-efforts and/or institutional interventions in order to nullify the impacts of shocks and hazards.

8.2.1 Coping capacity

Rural people manage small (micro) risks such as minor illness by self-insurance including cash on hand or household microsavings. They compensate medium (meso) risks such as death of income earner through community or market-based arrangements including borrowing from moneylenders or MFIs. For large (macro) risks i.e. floods and cyclone they urge for government intervention. Two types of risk management arrangements are available to the villagers: informal at individual or community level and formal at market and state level. Under the arrangements, rural people have three types of coping strategies: 1) risk protection, 2) risk coping and 3) risk sharing. Risk protection strategies are *ex ante* measures to build up an assets base as a cushion against risks. These strategies include accumulating assets and diversification of income sources. Risk coping strategies such as reducing consumption, selling assets, and borrowing are *ex post* actions after the occurrence of risks. Finally, people may pool assets and share risks within or outside the households to minimize the impact of risks. Risk sharing includes family formation, sharecropping and patron-client relationship.

Coping capacity depends on the appropriateness of risk management tools and the strength of the households. Considering risk management tools, three types of households exist in *Ausha* and *Bhadeshwari*: non-erosive or least stressful that use protective assets (i.e. savings), erosive or medium stressful that use productive assets (i.e. livestock) and

damaging or highly stressful using last resorts (i.e. selling cheap labour) for survival. In terms of strength, households are reclassified into: 1) resilient, 2) weak and 3) fragile. Resilient households (55.2 percent in *Ausha* and 31.4 percent in *Bhadeshwari*) use resources without undermining their productive capacity and without seeking outside interventions. Households become weak (10.5 percent in *Ausha* and 13.4 percent in *Bhadeshwari*) when they start selling productive assets and borrow from external sources. Fragile households (34.3 in *Ausha* and 55.2 percent in *Bhadeshwari*) sell productive assets as a last resort i.e. land and gradually become destitute. There have no alternative but to seek grants, relief and aid from the government and NGOs.

8.2.2 External interventions

Residents in *Ausha* and *Bhadeshwari* have identified six major types of institutions that have a key role in their lives. These are health, education, financial services, administration, law and enforcement, support services. The key question is 'Are those institutions effective in a household's resilience to risks and shocks?' Effectiveness matrices constructed from Venn diagram and mobility map exercises by residents of *Ausha* and *Bhadeshwari* revealed that the union council and banks are the least effective institutions. Banks have some built-in barriers (distance, collateral, minimum deposits) to rural people especially the poor. Only the rich can afford to deal with banks. The union council has biased selection procedures and inadequate funds from government grants. Hospital services are very important for reducing health risks but they are less effective due to distance. People sometimes opt for low cost and locally available alternatives such as herbal or homeopaths. Although informal health services are easily accessible and affordable, people in both villages consider them less effective because of low quality and limited capacity. According to the respondents, schools are most effective in both villages as the government stipends for the rural students helped parents not to withdraw their children from school during bad times.

Residents of *Ausha* consider moneylenders as ineffective institution as funds are easily available from friends and family due to strong social network. Friends and family is the most effective agent in *Ausha* but less effective in *Bhadeshwari*. *Bhadeshwari* people consider moneylenders as effective agent as they are available to all groups of people with flexible credit delivery. The response from friends and family is low in this village because of weak social networks. Although MFI services are affordable, the accessibility is limited to some respondents and thus less effective in general. Most of the non-poor

and a section of the poor feel that they are excluded from the services. Overall, there are intervention failures of market and state-owned institutions in both villages. Most importantly, formal financial services remain inadequate and consequently financial inclusion is incomplete.

8.3 Financial inclusion

Financial inclusion may enable households to manage money and diversify income and assets. It may also provide access to savings or emergency loans to buffer crises and reduce vulnerability. Vulnerability and financial exclusion may reinforce each other to generate social exclusion as it isolates households from mainstream financial activities and social networks. This study explores following scenario in financial inclusion.

8.3.1 Status of financial inclusion in northeast rural Bangladesh

Despite various remedial measures to raise the market's capacity to provide and a client's ability to afford services, financial inclusion gaps still exist in northeast rural Bangladesh. The study identified financial inclusion gaps in five areas: payment, savings, borrowing, cognitive resources and gender.

Payment gap exists in the form transaction and transfer gaps. For transaction, immediate access to cash is necessary for business payments and for risk management. However, most rural people do not have access to bank account and those who have access, cannot use it properly because of travel cost and time, as bank branches are located mostly in towns or cities. In addition to distance, the poor face lack of enough money and proper documents to open a bank account. These limitations force them to search for alternative sources of money for crisis finance and those sources are presumably costly or damaging such as borrowing from a moneylender or selling productive assets. Government transfer (cash grants and food) allocation is inadequate for the rural poor. This payment gap makes destitute and vulnerable households more fragile.

Like payment gaps, there are savings gaps too. The non-poor maintain savings accounts in banks to deposit remittances from abroad, but the frequency of using these accounts is low because of the distance. They have an urge for MFI membership in order to allow them to deposit their surplus income. Some MFI members argued that they wanted to be save-only members but loan officers do not allow them this. Respondents from the poor group who were not MFI members argued that they did not have a 'right place' to save

in good times to spend in bad times. Savings at home is exposed to theft or excessive demands from children or other family members for temptation spending. MFI members complained about 'right time to withdraw' their savings in the 'right amount'. Although MFIs at present are more flexible with deposit withdrawals than in the past, some restrictions still exist. In order to ensure the insurance role of savings against crises, MFIs need to focus on three rights: *right* place to save and *right* time to withdraw the savings in the *right* amount.

There are borrowing gaps in *Ausha* and *Bhadeshwari*. The non-poor are not eligible to receive loan facilities from MFIs. Many of them have bank accounts but only few take loans from the bank. The poor population have almost no access to bank credit, as they are considered non-bankable by banks. However, they are almost covered by the MFIs (82 out of 88 households in *Ausha* and 119 out of 126 households in *Bhadeshwari*). The non-poor (61.1 percent in *Ausha* and 41.5 percent in *Bhadeshwari*, Table 5.12) remain outside the range of MFIs financial services. It is not that they all require financial services from MFIs, but they think and feel they are excluded.

Financial inclusion is incomplete when cognitive resource gaps exist. Direct observations (covert and overt) of MFI group meetings in *Ausha* and *Bhadeshwari* revealed that the group cohesion and interactive learning arrangements have been interrupted by too much time spent in financial transactions. Loan officers spend more time in collecting loan instalments and savings, ignoring the best practices of discussing social and financial issues in the group meetings. There is a potential demand for adult learning and basic numeracy. Only the FIVDB among the three MFIs is active in training poor people in *Ausha* and *Bhadeshwari*.

A gender gap in financial inclusion is visible in rural areas. Most of the male discussants felt that they were excluded from the financial services, as MFIs were women focused. They believed that this made them credit constraint. MFIs field staff argued that the target was actually household not individual and that MFIs provided loans and other financial products through women, as they proved more efficient in financial management. However, FGD discussions revealed a crucial gender difference in financial behaviour. Men are less interested in precautionary savings and they consider loan instalments as future savings that helps in building assets. They consider promotional role of savings i.e.

savings for future investment. Women are more attentive of the protective role of savings i.e. precautionary measures for risk finance.

8.3.2 Financial inclusion outlook

Agent banking model: One way to minimize the financial inclusion gap is the expansion of financial outreach in a cost effective way. People want financial services at the shortest possible distance but building bank branches in remote areas is costly. To minimize the cost, financial institutions may appoint third parties (agents, retailers, MFIs etc.) to carry out financial transactions on their behalf. The main advantage of agent banking is the low transaction cost in terms of distance and time. However, agent banking needs to address two major issues: 1) security of the agent (i.e. free from burglary and theft) and 2) liquidity (i.e. enough money in the vault). The business correspondent (BC) model in India is a prime example of low cost financial services delivery to the poor (RBI 2008).

Mobile financial services (MFS): Another way of deepening financial inclusion is through mobile financial services. MFS combines banking and financial services with mobile networks to execute a wide range of financial transactions, from money transfers to loans and savings using a mobile phone. MFS model uses a vast agent network of mobile phone operators (MNOs) and virtual airtime as e-money to minimise transaction cost of financial services as well as distance and travel time of the clients. Mobile financial services comprise three major services: 1) Mobile banking services – loan disbursement and recovery, deposits and withdrawal, fund transfer from one account to other, and information services (e.g. checking balance). 2) Money transfers – Person-to-Person (P2P) transfer of money such as domestic and international remittances. 3) Mobile payments – Government to Person (G2P) transfer such as grants, pension, Person to Government (P2G) payments such as tax, levy, Person to Business (P2B) such as utility bills or merchant payments, Business to Person (B2P) such as payrolls or dividend payments and other payments such as, overdraft, insurance premium (Nabi, et al 2012). Money transfers (2) and mobile payments (3) together make up 'Mobile Money', which is a major part of the whole 'Mobile Financial Services'. When a microfinance institution (MFI) implements mobile financial services it is called 'Mobile Microfinance'.

Mobile microfinance: Mobile microfinance refers to mobile financial services implemented by MFIs. The microfinance industry faces denunciation for high interest rates and other costs associated with financial service delivery. The main reason for high operational costs is the financial service delivery to the doorstep of clients. To reduce

operational costs, microfinance institutions may consider either branchless operations through nonbank retail agents or mobile financial services. With the advancement in mobile technology and increasing subscription of mobile phones, mobile money is now a potential tool for financial inclusion especially in rural areas where people are more likely to own mobile phones than have bank account.

Benefits of mobile microfinance: Mobile financial services lower the operational costs of MFIs as financial service delivery is now branchless and agent based. MFIs now spend less time in loans and savings collections and more time in organising and training the clients. In traditional MFIs, cash transactions are carried out during the group meeting. Thus, the loan officer and group members do not find sufficient time for issue based discussions, training or financial planning. In MFS, no cash handling occurs during the group meeting, as transactions are normally held outside the meeting i.e. with the agent. In conventional MFIs, loans disbursement and savings withdrawals are approved at the next meeting and payments are made in the branch office. In MFS, loan approvals and payments are carried out immediately or within a few hours. Clients receive virtual money in their mobile phone and thus they do not need to go to the area office. Moreover, MFIs have to maintain intensive back office staff for a volume of accounting and paperwork that can be replaced by automated data processing in MFS. Thus, MFS reduces transaction costs and saves time for both MFIs and the clients. Moreover, MFS gives clients more control over financial assets as they can now convert their virtual savings into cash with an agent anytime they need.

Limitations of mobile microfinance: MFIs may lack funds, technical skills and the infrastructure needed to upgrade their MIS to be compatible with mobile financial services. From the client's perspective there are two major challenges: 1) *Low literacy*: Low literacy is a serious issue for MFI members in rural areas where people can only write down their name let alone read an SMS containing transaction information. Although mobile penetration is high, people mainly use cell phones for voice calls that only needs pressing number buttons. They rarely use SMS communication and in case of complicated operations, they depend on younger family members or trusted individuals. In MFS, they need to rely on a loan officer or an agent for financial transactions. 2) *Security*: Low literacy may result in security risks for not keeping the PIN code private or not changing PIN code before the first use. Untrained clients may rely on friends and family members, loan officers or agents to carry out the transactions for them. Thus, the

PIN can no longer be kept secret in order to protect from fraud. MFIs must offer training on how to use mobile applications in financial transactions along with existing financial literacy and numeracy training.

In short, mobile financial services have a potential role in deepening financial inclusion in developing countries like Bangladesh. The reasons are: 1) growing number of MNOs, banks and third parties interested in mobile financial services, 2) huge number of potential users, and 3) cost-effective services. All these indicate a favourable environment for mobile financial services. However, implementing mobile financial services involves reorganizing the institutional set up i.e. modernizing MIS and human resource management such as training and assessment. The biggest challenge is the potential barriers to technology adoption.

8.4 Policy recommendations

In the participatory survey, respondents in *Ausha* and *Bhadeshwari* discussed household strategies and the role of external interventions particularly financial inclusion. The analysis reveals some critical issues and policy challenges:

1. Inclusive finance is a need-based mechanism. Service providers have to create poverty and vulnerability profiles of the households to meet diverse financial demands. Non-poor households are 'resilient' with strong self-insurance mechanisms. They prefer savings and insurance products. The majority of the poor households are 'weak' as they use erosive coping strategies. They demand for loan-based instruments such as microcredit. The extreme poor households are 'fragile' as they have nothing left in their capacity to survive independently. They require state interventions such as relief, aid, and pension allowance.

2. Transfer payments (grants etc.) to the extreme poor are an essential part of inclusive finance. FGD participants reported that allocation and distribution of government transfer through the union council were politically motivated with corruption and nepotism. To avoid such misappropriation, the government may consider the transfer payments through GO-NGO partnership as rural people have more trust in NGOs or MFIs. Some MFIs have already started similar programmes. For example, BRAC provides 'assets grant' for the chronic poor and 'grant plus loan' for the transitory poor. Both groups receive savings

facilities, training and technical supports that enhance client's systematic graduation to higher income level.

3. Rural people face inclusion gaps in a number of ways: payment, savings, loan, cognitive resources and gender. In payment system, the most frequent service rural people need is remittance payment. Banks arrange easy transaction services over the counter without requiring a bank account. Then, the problem of 'distance' remains crucial. Agent banking and mobile financial services are two recently devised arrangements for providing financial services with low transaction costs. MFIs might upgrade to include sophisticated services to provide low cost services to the poor.

4. To minimise borrowing and savings gaps, it is essential to allow both the non-poor and the poor easy access to MFI and banking services. The non-poor already have access to banking but distance is a problem. They would like to remain save-only members in MFI, as small loans from MFIs might be inadequate for them. This option may bring extra funds to MFIs from the rich to lend the poor in the same village. The poor, on the other hand, receive financial services from MFIs, while banks consider them risky due to lack of collateral. Banks may allow access for the poor with microfinancial services but again distance matters. The solution to this problem is the expansion of the banking network through agent banking or mobile financial services.

5. For cognitive resources gap, MFIs and banks must arrange training for rural people in numeracy and financial literacy. This is necessary for better access and efficient use of financial assets. Financial advice and business planning are an important part of financial inclusion. While proper utilization of financial assets ensures economic empowerment (entrepreneurial ability), efficient mobilization of cognitive resources enhances psychological empowerment (voice and self-esteem), both of which are equally important for overall empowerment. The MFI group meeting is central to socialized and experimental learning in rural finance and entrepreneurship. Thus loan officers must find time for such activities in the group meeting without spending too much time in savings and repayment collection.

6. In the case of gender gap, men believe that they are financially excluded as MFIs focus only on women. In reality, female clients take loans from MFIs, delegate it to their husbands and take the burden of default risk. To minimize the pressure, direct

participation of male members in microfinance is necessary. MFI membership should be dual instead of single per household based on comparative advantage and preference. As men prefer current consumption and investment, they should take the responsibility of loan repayments. Women prefer future consumption (savings) and risk protection and thus they might be save-only members. They prioritise the precautionary role of savings to microenterprise funding.

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Appendix A - Survey instruments: processes and summary outcomes

In this section, four survey instruments are presented as a postscript of data collection methods and procedures. In some cases, summary findings are presented in raw format to supplement the analytical understanding of the thesis. Four instruments used in the study are: 1) Participatory Rural Appraisal (PRA), 2) Poverty Scorecard (PS), 3) Focus Group Discussions (FGDs) and 4) Household Questionnaire (HQ).

A1 Participatory Rural Appraisal (PRA)

In this study, I arranged eight PRA exercises to facilitate rural people to analyse and present data and information of their villages: 1) village transect, 2) Social mapping, 3) Wealth ranking, 4) Seasonal calendar, 5) Mobility map, 6) Vann diagram, 7) Pair-wise ranking, and 8) Direct observation.

A1.2 Village transects

Transects are used to evaluate the rural livelihood opportunities by observing the village topographies and consulting with rural people. This exercise is also used as a rapport-building tool in PRA. At first I walked through the village along with a local person to gather information on history and topography of the village. Finally, a group of knowledgeable people in the village draw a transect matrix as follows:

Table A1.1 Transect matrix: *Ausha*

Resources Systems	Homestead	Farmland	River
Resources	Small piece of land around each house suitable for gardening and animal rearing	Plain land for rice and vegetables	Water resources in the river Surma
Activities	Rearing poultry and livestock, Growing trees and vegetables	Rice and vegetables production	Fishing, bathing and washing in the river.
Problems	Homestead land becomes muddy in rainy season. Rain affects non-durable households.	Sometimes affected by floods and droughts	River overflows during major flooding.
Opportunities	Improved housing and more poultry and livestock rearing	Cultivate high yielding varieties.	Water for irrigation
Perceptions	Housing condition should be improved.	Produce more crops.	Find no interest in professional fishing.

Transect matrix of *Bhadeshwari* differs from that of *Ausha* in that the latter has relatively high land and thus less affected by floods. As lands in *Bhadeshwari* remain under water for few months in the monsoon, rice is the only crop for the village. Because large water bodies are within the reach of *Bhadeshwari*, people are more interested in professional fishing than the people of *Ausha are*.

Table A1.2 Transect matrix: *Bhadeshwari*

Resources Systems	Homestead	Farmland	Wetland
Resources	Small piece of land around each house suitable for gardening and animal rearing	Low land for rice crop	Water resources in the nearby canal and wetland (*Beel*, *Haor*)
Activities	Rearing poultry and livestock, Growing trees and vegetables	Rice cultivation only	Fishing in wetland and bathing and washing in the canal
Problems	Homestead land becomes muddy in rainy season. Rain severely affects non-durable households	Land goes under water every year during the rainy season. Droughts sometimes occur in the dry season	No concrete bridge over the canal, People go outside the village through risky bamboo made narrow bridges
Opportunities	Improved housing and more poultry and livestock rearing	Cultivate flood tolerant rice varieties	More fishing in water body
Perceptions	Housing condition should be improved	Produce more crops	Future sources of professional fishing

A1.2 Social mapping

In this exercise, the respondents in *Ausha* and *Bhadeshwari* prepared social maps that include inventory of the village resources such as households, school, tube wells, community centre, religious centre, and MFI group meeting centre etc. They used locally available materials like stone, pebbles, seeds, twigs, flower and leaves as symbol for marking major landmarks and features in maps on the ground. The data collectors finally transferred the maps in plain paper. Following table is an extract from the two social maps.

Table A1.3 Summary outcomes of social maps for *Ausha* and *Bhadeshwari*

Map contents	*Ausha*	*Bhadeshwari*
Number of households	226	217
Households made of bricks and cement (pucca)	81	10
Households with sanitary latrine (water sealed)	94	16
Primary school (public)	1	0
Primary school (NGO run)	1	3
Playground	2	1
Community centre	1	0
Grocery shop	3	2
Tube well	10	5
Irrigation pump	1	0
Pond	4	3
Mosque	3	1
Madrasa*	0	1
MFI group meeting centre**	5	4

* Madrasa is a religious school in which Islamic religion is taught with greater emphasis in addition to secular studies.
** Three MFIs (Grameen, ASA and FIVDB) are operating in *Ausha* and *Bhadeshwari*. FIVDB operates fully in *Ausha* but does not have any financial activities in *Bhadeshwari*.

Apart from the quantitative information above, social maps of the two villages provides a portrait of infrastructure and village layout including roads and bridges, agricultural lands, irrigation channels, trees and bushes. *Ausha* is on the bank of the river Surma – one of the two major rivers in the northeastern region of Bangladesh. Sylhet-Sunamganj highway passes through *Ausha* and village lanes are connected to it. There is an irrigation channel maintained by the farmers' association of *Ausha*. They lift water from Surma using water pump. The portrait for *Bhadeshwari* is different. There is a connecting road between Sylhet-Sunamganj highway and *Bhadeshwari* Bazaar. A canal flows through the western side of the *Bhadeshwari* that separate the village from the *Bhadeshwari* Bazaar. People use three non-durable bamboo bridges to go for shopping in the Bazaar and communicating with rest of the world. Village roads are connected to these tiny bridges.

A1.3 Wealth ranking

In this research, I used card-sorting methods of wealth ranking exercise in which wealth or assets of the households are recorded on cards and then sorted out according to certain criteria. There are six steps in the exercise to classify rural households into poverty groups based on wealth ranking:

Step 1 Preparation of index cards: Index card for each household was prepared from the list of households from the social mapping exercise. The front page of the card contains the household number (given in social mapping) and name of the household. Back page contains wealth-ranking criteria developed by the respondents in step 2. Back page was filled in step 3 (Figure A1.1).

Step 2 Fixing wealth ranking criteria: In this stage, participants were asked to classify the households based on wealth status using their own language. In both villages, they used three terms to explain the status: *Khub Gorib* (extreme poor), *Gorib* (poor) and *Dhoni* (rich or non-poor). The participants are then requested to make a list of criteria based on which they have classified the households. These were recorded in the following table.

Table A1.4 Criteria for wealth ranking

Wealth status	Criteria
Khub Gorib (extreme poor)	• Landless, homestead only • No food security, no livelihood security in lean months • Eat only one or two times a day • Entitled to government grant but not received yet • Female headed household • Household in which elderly, destitute widow, physically disabled live alone • May own negligible number of poultry and livestock • Household made of non-durable materials (katcha and jhupri)
Gorib (poor)	• May own land (up to 1 acre) but household depends on wage from day labour. • Food security is limited to certain months (5-6 months), low livelihood security in lean months • Eat two to three times a day but low quality food • Recipient of government grants • Possess draft animal and tools for cultivation (own and leased land) • Household possess some poultry and livestock • Household made of semi durable materials (half pucca and katcha)
Dhoni (rich or non-poor)	• Own land (more than 1 acre) • May not always work on the field; employ 1-2 farm labourers permanently. • Lease additional land • Food security is ensured all the year round with surplus in food store, No livelihood insecurity • Eat three times a day with quality food • Possess substantial number of poultry and livestock, and agricultural machinery • This group also comprises moneylender, small traders, salaried jobholders in the city and international immigrants • Household made of durable materials such as bricks and cement (pucca)

Step 3 Collection of information: In this step, participants were provided with index card for each household with number of household and name of the households in the first page. They were asked to supply household information base on the criteria developed in step 2. The data collectors then recorded the information on the backside of the card (Fig. A1.1, P.2) and repeat the process for all households.

Figure A1.1 Sample index card

P.1

Household No. : 1
Household Head : Abdus Salam

P.2

- 0.5 acres of own land
- Katcha house made of straw and bamboo
- Leased another 0.5 acres of land
- Sell labour in off season
- Possess small number of poultry and livestock.
- Food security for 8-10 months

Step 4 Sorting and grouping the cards: In this step, I shuffled the cards, read out the information from page 2 of each card without revealing page 1 and asked the participants to place the card in appropriate column down on the ground (Figure A1.2). Once all cards had been sorted out, I revealed page 1 that contained household number and name of the household heads. Respondents were allowed to make any change and explain why they wanted such change.

Figure A1.2 Household poverty groups

Pile - 1 ☺ Rich	Pile - 2 😐 Poor	Pile - 3 ☹ Extreme Poor

Step 5 Superimpose poverty groups on social map: Households classified into poverty groups were then marked on the social map. Extreme poor, poor and rich households were marked with red, yellow and green marking respectively. Table A1.5 presents the outcome of the wealth ranking exercises.

Step 6 Verify the outcomes: The outcome of the exercise were verified with a wider audience to facilitate the triangulation of the results. This would make the results more authentic and reliable.

Table A1.5 Household poverty group in *Ausha* and *Bhadeshwari*

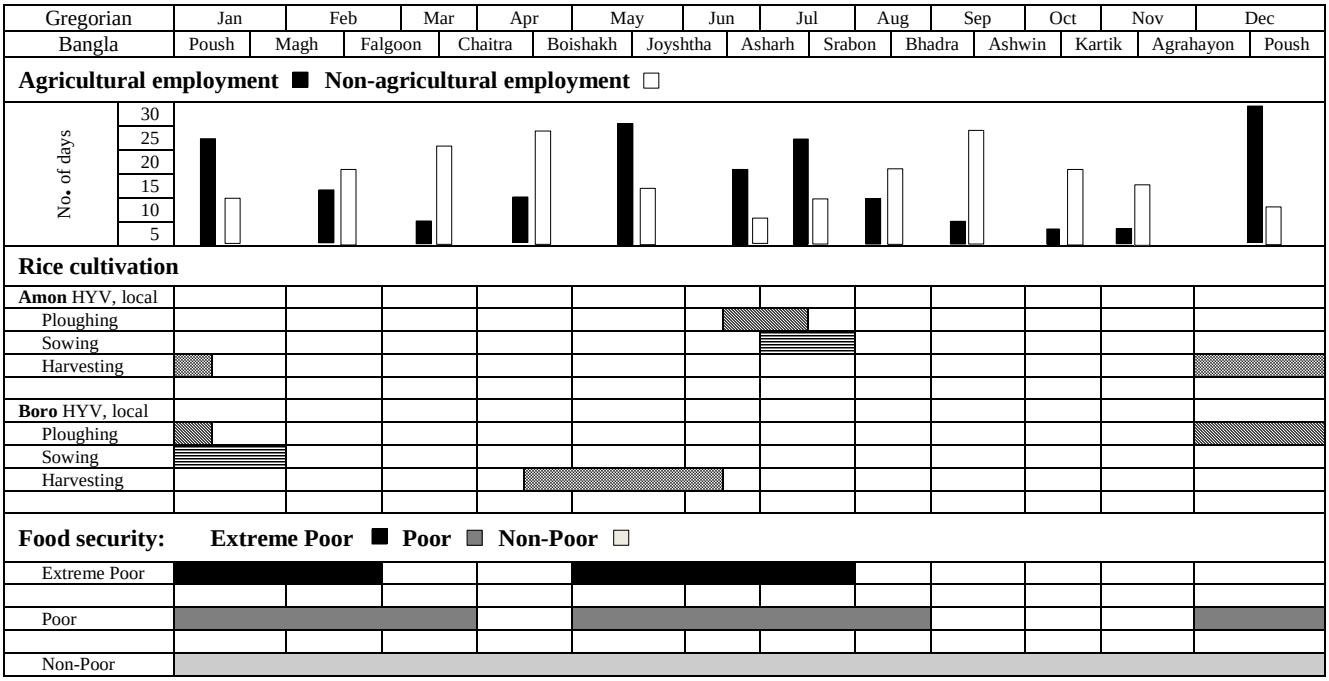
Poverty group	*Ausha* (%)	*Bhadeshwari* (%)
Extreme poor	28 (12.4)	71 (32.7)
Poor	60 (26.5)	56 (25.8)
Non-poor	138 (61.1)	90 (41.5)
Total households	226 (100)	217 (100)

Figures in the parentheses are percentages.

A1.4 Seasonal calendar

There are seasonal variations in the rural economy – certain months in a year are full of works with more income and food security and the rest of the months are opposite. Seasonal calendar is a diagrammatic exercise by the rural people to analyse seasonal variations in their livelihood using short memory (one year). Long memory analysis of trends in shocks and stresses can be done with 'Time line' exercises. In this study, I invited rural people to figure out their livelihood experience in crop production, food security and employment over reference period of 12 months.

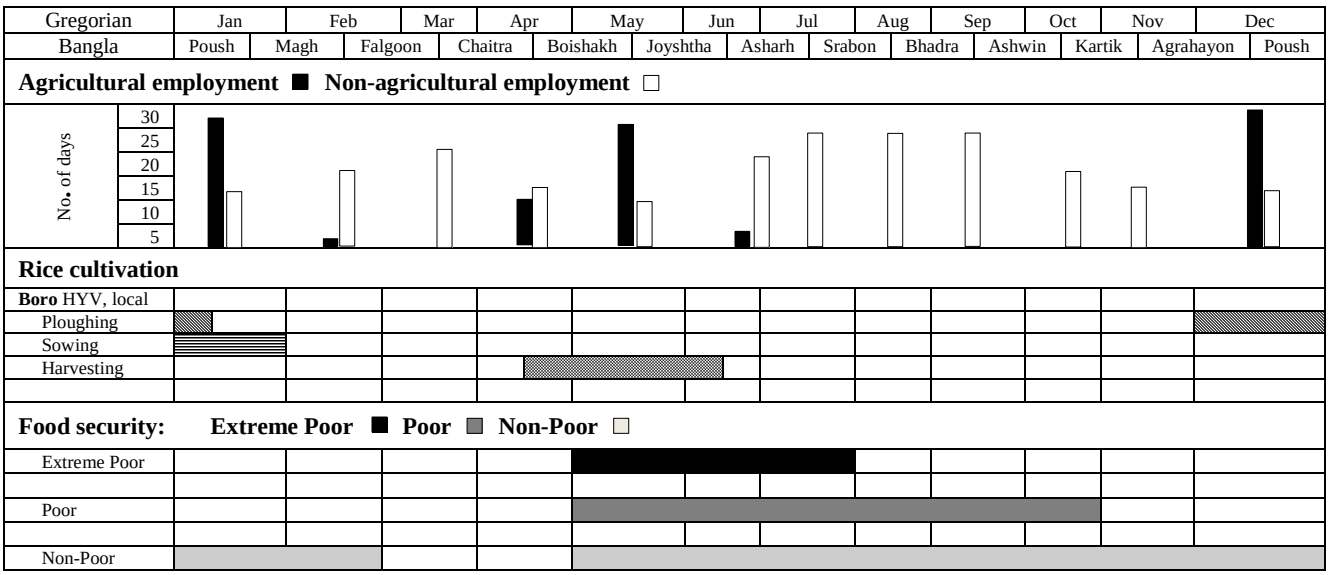
Table A1.6: Seasonal calendar for *Ausha*



The residents of *Ausha* have fluctuating employment opportunities in both agricultural (mainly rice production) and non-agricultural (day labour in various activities) sectors. Employment in agricultural sector are ploughing, sowing and harvesting activities of the farmers themselves or by wage employment. In the gestation period between ploughing and harvesting there are some minor activities like weeding, watering and applying fertilizer. Non-agricultural activities are less during the monsoon, particularly in two rainy months in Bangla calendar - *Asharh* and *Srabon*. The next three months are lean for agriculture, so people search for non-agricultural jobs. Interestingly, during the time of cultivation and harvesting people

withdraw themselves from non-farm jobs as demand for farm jobs are at peak and many of them have to help family farm. Food storage is an indicator for food security. Rural people count food security as how many months they are able to consume from their food store without buying from outside. Respondents in *Ausha* report that extremely poor households normally have food stock up to five months, which is about eight months for moderate poor. Non-poor households have surplus food for more than a year according to their estimates.

Table A1.7: Seasonal calendar for *Bhadeshwari*

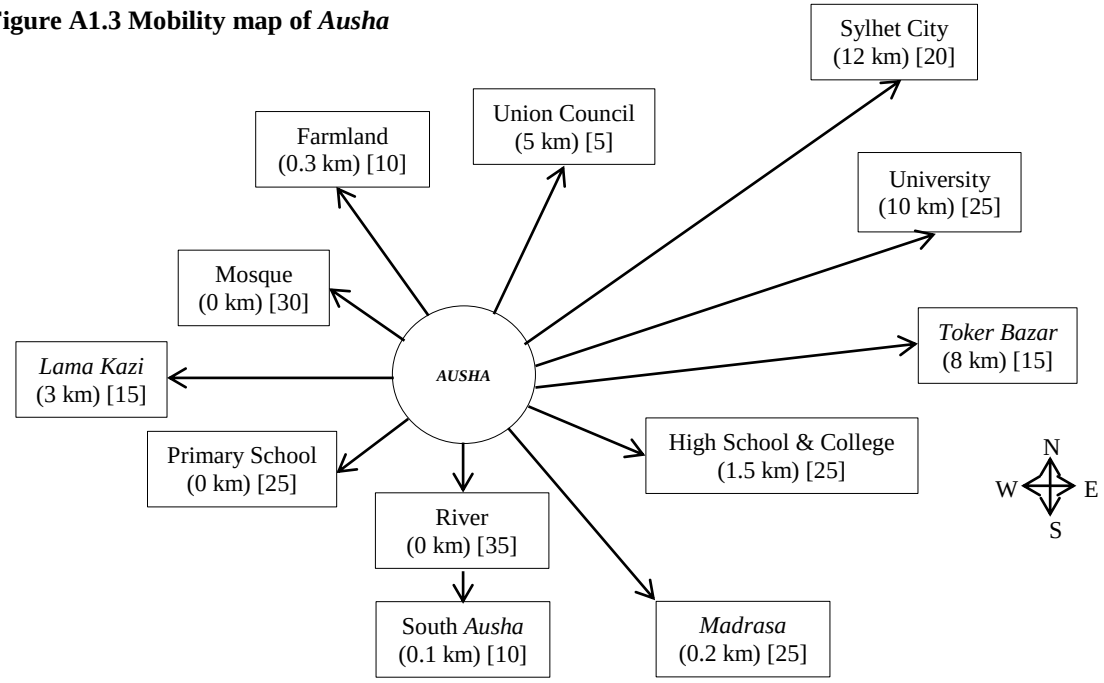


Similar pattern of wage employment are found in *Bhadeshwari* but with lower involvement in farm activities. Unlike *Ausha*, rice growers in *Bhadeshwari* could cultivate only one variety (i.e. *Boro*) in a year. The reason explained by the villagers is simple. As part of low flood plain, their lands remain under water for about 4-6 months during and after the monsoon. Thus, there is no room for *Amon* rice. Instead, they engage in fishing in the nearby wetland. Small trading is another non-farm alternative villagers normally do during this period. Single crop production in *Bhadeshwari* has impact on food security of the village people. Extreme poor households in this village have up to three-month equivalent of food storage. Rest of the time they have to buy food grain from the market. Moderate poor have about six month of food security. Rich people need to buy food grain for couple of months.

A1.5 Mobility map

In mobility map exercises rural people revealed movement pattern in their livelihood activities including search for services, facilities and opportunities. Respondents used various symbols to locate important institutions, identified purpose, distance, importance and frequency of their visits. Information gathered in the mobility map and Venn diagram is used to measure the effectiveness of a particular institution.

Figure A1.3 Mobility map of *Ausha*



Note: Figure inside the parenthesis represents distance and inside the square bracket represents frequency of movement in a month.

Purposes of visits: Residents of *Ausha* go to Sylhet city for various purposes. Major reasons are healthcare, legal advice, shopping, banking, job, and education. Few students of this village attend university and colleges in the city. There are two primary schools inside the village (one government and the other FIVDB). High school, college and madrasa are few kilometres away from the village. There are two Bazaars (*Lama Kazi* and *Toker Bazaar*) where people go to buy and sell household necessities like meat, fish, rice and vegetables. Bank branches and MFI local offices are located in these two commercial places. People visit union council office to collect or enquire about development grants from the government. Women's mobility is mostly inside the village. Outside mobility is accompanied by husband or family members. They also go outside in groups with other women for two major reasons: to receive loan and withdraw savings from the MFI local office and to collect their children's stipend from the school.

Importance of visits: Bazaars are the most important place for the rural people where they could buy and sell their products to run and earn livelihood. These places are also significant for rural banking, MFIs and other commercial services. Sylhet city is vital for standard healthcare, higher education, shops, legal and administrative services that are beyond the local capacity.

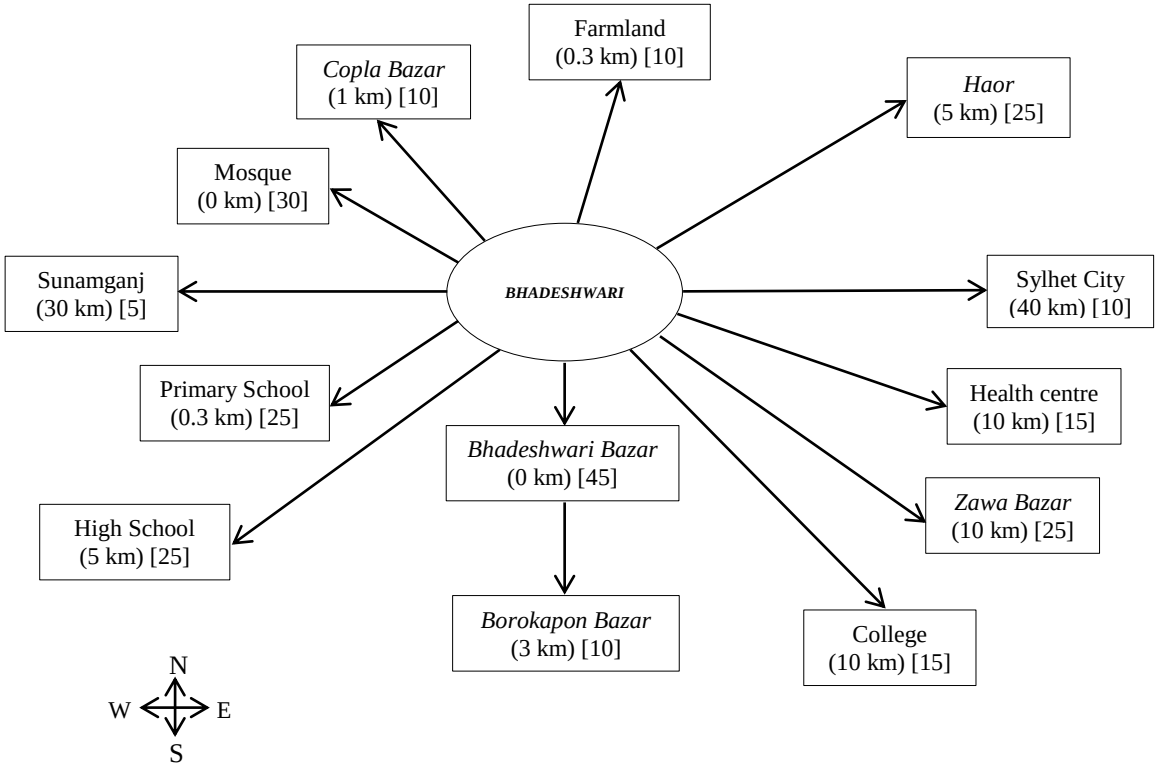
Mode of transport: Sylhet-Sunamganj highway runs through the village that is a communication advantage for the villagers. People take long distance travel by bus or auto-rickshaw, medium distance by auto-rickshaw or rickshaw, and short distance on foot. They take boat to cross the river Surma to visit friends and family in South *Ausha*.

Table A1.8 Mobility in *Ausha*

Mobility inside the village		**Mobility outside the village**		
Place	**Frequency**	**Place**	**Distance**	**Frequency**
Friends and family visit	High	Hospital (Sylhet)	Long	Medium
Community centre	Low	Bank (*Toker Bazaar*/ *Lama Kazi*)	Medium	Low
MFI group meeting	Medium	University/College (Sylhet)	Long	Medium
Grocery shop	High	High school	Short	High
Primary school	High	MFI office (*Lama Kazi*)	Short/medium	Medium
Mosque	High	Bazaar (*Toker Bazaar*/ *Lama Kazi*)	Short	High
Shalish	Low	Union Council (*Mogolgaon*)	Medium	Low

Shalish is a conflict mitigation process headed by a person, normally the village chief, who is respected by all. Frequency is determined by average number of visits in a month by villagers or by a number of visits by an individual.

Figure A1.4 Mobility map of *Bhadeshwari*



Note: Figure inside the parenthesis represents distance and inside the square bracket represents frequency of movement in a month.

Purposes of visits: Residents of *Bhadeshwari* go to either Sylhet city or Sunamganj town for various purposes. Major reasons are healthcare, legal advice, shopping, banking, job, and higher education. Only 3-5 students of this village attend colleges in the city. There are two FIBDB and one Brac school (primary) inside the village. High school, college and madrasa are 5-10 kilometres away from the village. There are four Bazaars (*Bhadeshwari*, *Kopla*, *Borokapon* and *Zawa*) where people go to exchange household necessities like meat, fish, rice and vegetables. Bank branches and MFI local offices are located in *Zawa Bazaar*, which is the commercial centre of adjacent villages. People visit union council office to collect or enquire about development grants or safety net allowance from the government. Like in *Ausha*, women's mobility here is mostly inside the village. Their outside mobility is accompanied by husband or other family members. They also go outside with other women in group for two major purposes: to receive loan and withdraw savings from the MFI local office and to collect their children's stipend from the school.

Importance of visits: *Bhadeshwari* people have four Bazaars in their range. They buy and sell their products in those Bazaars to manage their livelihood. Among these places, *Zawa Bazaar* is significant for banking, MFIs and other commercial services. Some of the residents of *Bhadeshwari* have grocery shops in *Zawa Bazaar*. There is a health centre in *Koitak* near *Zawa Bazaar*. People go there before going to Sylhet or Sunamganj hospital for serious illness. Sylhet city remains vital for standard healthcare, higher education, shops, legal and administrative services which are beyond the local capacity.

Mode of transport: There is a five km connecting road from *Bhadeshwari* to Sylhet-Sunamganj highway. People take rickshaw or walk down the highway and then take a bus or auto-rickshaw for long distance travel. However, before taking the connecting road they have to cross a canal by a tiny bamboo made bridge, which is a symbol of their poor communication with the rest of the world.

Table A1.9 Mobility in *Bhadeshwari*

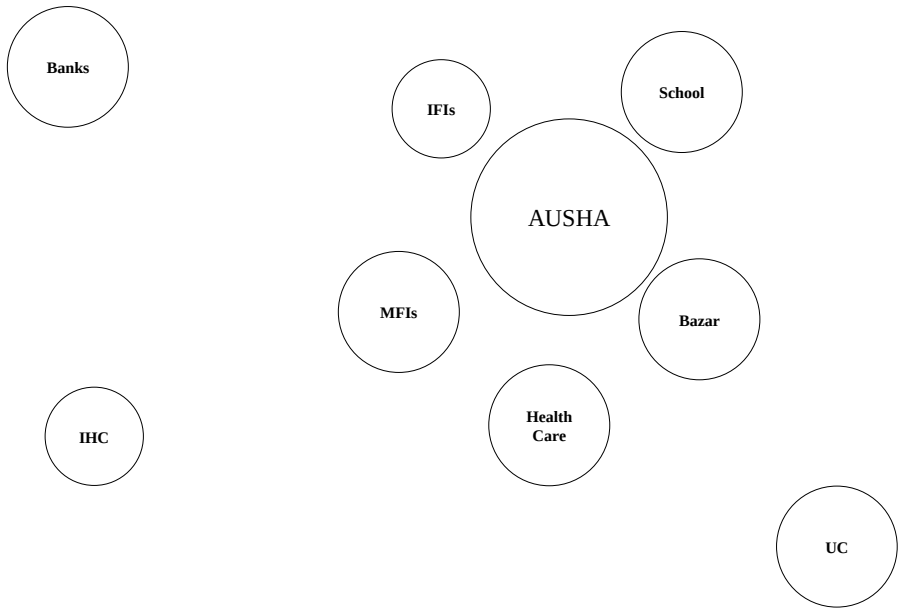
Mobility inside the village		Mobility outside the village		
Place	**Frequency**	**Place**	**Distance**	**Frequency**
Friends and family visit	Medium	Hospital (*Koitak*, Sylhet)	Long	Medium
MFI group meeting	Medium	Bank (*Zawa*)	Long	Low
Grocery shop	High	University/College (Sylhet)	Long	Low
Primary school	High	High school	Medium	High
Mosque	High	MFI office (*Zawa*)	Medium	Medium
Shalish	Low	Bazaar (*Zawa*, *Borokapon* etc.)	Medium/Long	High
Madrasa	High	Union Council	Long	Low

Shalish is a conflict mitigation process headed by a person, normally the village chief, who is respected by all. Frequency is determined by average number of visits in a month by villagers or by number of visits by an individual.

A1.6 Venn diagram

Using Venn diagram, PRA participants analyse the importance of and access to the key institutions influencing their livelihood. In the diagram, they use circle of newsprint with two or three sizes to mark the importance of a particular institution. Bigger circle attached to an institution indicates higher degree of importance and vice versa. After attaching each institution to appropriate circle, participants then place those circles on the ground around a central circle indicating their village. The placement of the circles is done according to their accessibility in the institution. Longer distance from the central circle indicates lower access to the institution and vice versa. Note that, by distance PRA participants does not mean physical distance of an institution from the village rather they graphically represent accessibility: shorter distance from centre circle means higher accessibility.

Figure A1.5 Venn diagram of institutions in *Ausha*



Note: MFIs = microfinance institutions. IFIs = informal financial institutions such as moneylender, and friends and family. IHC = indigenous healthcare such as rural doctors, herbal practitioners, and quack. UC = union council.

Table A1.10: Venn diagram and mobility map outcomes for *Ausha*

Institutions	Venn diagram		Mobility map	
	Importance	Access	Distance	Frequency
Moneylender	Less important	Low	Medium	Low
Friends and family (FFs)	Important	High	Short	High
MFIs	Important	Low	Short/Medium	Medium
Bank	Less important	Low	Long	Low
Hospital	Important	High	Long	High
School	Important	High	Short/medium	High
Informal healthcare (IHC)	Less important	Low	Short	Low
Bazaar	Important	High	Medium	High
Union Council	Important	Low	Medium	Low

MFIs include three microfinance institutions working in *Ausha* including ASA, Grameen bank and FIVDB. IHC includes rural health practitioner who also runs a dispensary, herbal medicine, and quack. Union council is a local government body which is responsible for community development and is in charge of disbursing government grants, relief and safety net support for the extreme poor.

Indicators in Venn diagram and mobility map can be used to construct new indicators for measuring effectiveness of an institution. High accessibility and short distance together can be used to express higher access to institutional services. Similarly, low accessibility and long distance can mean lower access. For anything between these extremes, a qualitative judgement or round off is taken. For example, high accessibility and medium distance is taken as high access for *Bazaar*. High accessibility and long distance for hospital is considered as low access as 'distance' is a crucial barrier to participation. Similarly 'importance' and 'frequency' together form actual use of the institutional services: important and high frequency indicates higher use of financial services. Attributes of 'less important' and 'low frequency' together form people's willingness to lower use of the institutional services. Again, for anything between these extremes, qualitative judgement or round off is considered. Less important and medium frequency is compounded as low use of informal financial institutions.

Table A1.11: Effectiveness indicators of institutions in *Ausha*

Institutions	Effectiveness of institutions	
	Use	Access
Moneylender (ML)	Low	Low
Friends and family (FFs)	High	High
MFIs	High	Low
Bank	Low	Low
Hospital	High	Low
School	High	High
Informal healthcare (IHC)	Low	High
Bazaar	High	High
Union Council	Low	Low

Based on the construction above I develop effectiveness matrix that indicates the degree of effectiveness the rural institutions have on the livelihood of the poor. Institutions, which have higher uses of services by rural people and higher accessibility provided by them, are called most effective institutions. Venn diagram and mobility map drawn by *Ausha* respondents reveal that Bazaars, school and FFs are among the most effective institutions that influence the livelihood of the poor. On the other hand, institutions that provide services which are low accessible and thus they are less used by the people are considered as least effective.

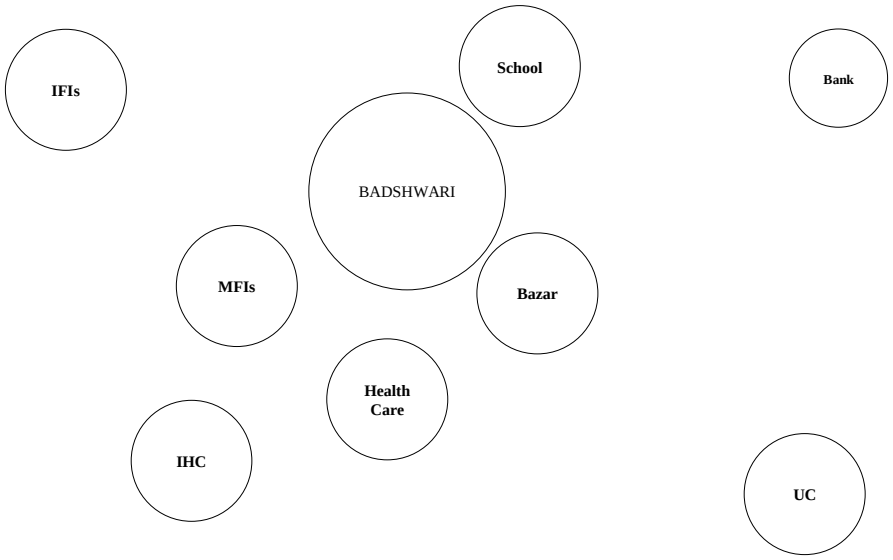
Table A1.12 Effectiveness matrix for *Ausha*

Effectiveness indicators		Accessibility	
		High access	Low access
Affordability	High use	Most effective: FFs, Bazaar, School	Less effective: Hospital, MFIs
	Low use	Less effective: IHC	Least effective: Union Council, Banks, ML

Sometimes institutions are less effective when they deliver services with high accessibility features but able to attract lower customers. In *Ausha*, although people have higher access to indigenous health services or informal financial services they are less practiced services. Institutions are also less effective when high

uses of services are restricted by low access because of some barriers like distance. Hospital is a prime example for the rural people. People use the services of hospital frequently but they sometimes try to substitute the services with low cost alternatives or local health services.

Figure A1.6 Venn diagram of institutions in *Bhadeshwari*



Note: MFIs = microfinance institutions. IFIs = informal financial institutions such as moneylender, and friends and family. IHC = indigenous healthcare such as rural doctors, herbal practitioners, and quack. UC = union council.

Table A1.13 Venn diagram and mobility map outcomes for *Bhadeshwari*

Institutions	Venn diagram		Mobility map	
	Importance	**Access**	**Distance**	**Frequency**
Moneylender	Important	Low	Short	Medium
Friends and family (FFs)	Important	Medium	Short	Low
MFIs	Important	Low	Medium	High
Bank	Less important	Low	Long	Low
Hospital	Important	High	Long	Medium
School	Important	High	Short/medium	High
Informal healthcare (IHC)	Important	Medium	Short	Low
Bazaar	Important	High	Short	High
Union Council	Important	Low	Medium	Low

MFIs include three microfinance institutions working in *Ausha* including ASA, Grameen bank and FIVDB. IHC includes rural health practitioner who also runs a dispensary, herbal medicine, and quack. Union council is a local government body which is responsible for community development and is in charge of disbursing government grants, relief and safety net support for the extreme poor.

Like *Ausha*, *Bhadeshwari* PRA participants draw Venn diagram and mobility map to explain the status of the institutions that are associated in their livelihood strategies. Indicators in Venn diagram and mobility map are then used to construct new indicators for measuring effectiveness of an institution. Effectiveness indicators are similar to those in *Ausha*. Only exception is the use of informal institutions. *Bhadeshwari* people have more contact with moneylenders and fewer networks with FFs than the residents of *Ausha do*.

Table A1.14 Effectiveness indicators of institutions in *Bhadeshwari*

Institutions	Effectiveness of institutions	
	Use	Access
Moneylender	High	High
Friends and family (FFs)	Low	High
MFIs	High	Low
Bank	Low	Low
Hospital	High	Low
School	High	High
Informal healthcare (IHC)	Low	High
Bazaar	High	High
Union Council	Low	Low

Based on the above table combining Venn diagram and mobility map an effectiveness matrix has been developed for *Bhadeshwari*. The matrix indicates that Bazaars, school and moneylenders are most effective among institutions in the villagers. Like in *Ausha*, banks and local government are least effective intervening bodies in *Bhadeshwari*. Microfinancial institutions are less effective because of low access due to membership restrictions. Health services in formal and informal sector are less effective as the use of informal health services is low because of lack of trust and confidence and access to formal health services are restricted by either distance or money.

Table A1.15 Effectiveness matrix for *Bhadeshwari*

Effectiveness indicators		Accessibility	
		High access	Low access
Affordability	High use	Most effective: Bazaar, School, Moneylender	Less effective: Hospital, MFIs
	Low use	Less effective: IHC, FFs	Least effective: Union Council, Banks

A1.7 Pairwise ranking

Pairwise ranking is used to understand the preference of the villagers about financial sources and services. I facilitate the participants to draw two separate matrices: one for the sources of finance and other for services they get. They are asked to draw matrices the ground by entering various types of financial institutions and the services separately in the rows and columns. Then, they are asked to compare first item in the column with various items listed in the row one by one and enter their preference in the respective grids. By repeating the process for all items in the column, they obtain an upper triangular preference matrix. Lower triangular grids are blank because of symmetric nature of the matrix. The participants then count the number of times each item was selected and place it in 'score' column. Finally, they rank the items based on the score and discussed about the reasons for preference among them.

Table A1.16 Financial institutions preference: *Ausha*

Financial Institutions	MFIs	CB	SG	FR	ML	Score	Ranking
Microfinance Institutions (MFIs)	-	MFIs	MFIs	FR	MFIs	3	II
Commercial Bank (CB)	-	-	SG	FR	ML	0	V
Small Groups (SG)*	-	-	-	FR	SG	2	III
Friends and Relatives (FR)	-	-	-	-	FOR	4	I
Moneylenders (ML)	-	-	-	-	-	1	IV

* Village informal group which saves and collectively invest in farm and non-farm activities.

Friends and family comes first when considering borrowing for deficit or crisis financing. This is possible in *Ausha* because of strong social network. Rich people in this village keep close tie with poor section of the community and they share risk by providing interest free loan to them. Sometimes they do not ask for repayment. MFIs come second in the preference list, which is trusted by many poor for their financial and non-financial support. Small groups in the village come next. Those who are not targeted by the MFIs (Non-poor and non-reached poor) sometimes try to do something in a way what MFIs are doing. They organise a group, collect deposits, and invest in the farm and nonfarm activities. Banks are the least preferred financial institution among the villagers. Distance, minimum deposit requirements, collateral for loans and

required papers for opening an account are reasons mentioned by the PRA participants. Poor think "banks always work for the rich" – a kind of psychological barrier.

Table A1.17 Financial instruments preference: *Ausha*

Financial Institutions	FML	IL	MS	VS	IS	RP	Score	Ranking
Formal Microloan (FML)	-	IL	FML	FML	FML	RP	3	III
Informal Loan (IL)	-	-	IL	IL	IL	IL	5	I
Mandatory savings (MS)	-	-	-	VS	MS	RP	1	IV
Voluntary savings (VS)	-	-	-	-	VS	RP	2	V
Informal savings (IS)	-	-	-	-	-	RP	0	VI
Remittance payments (RP)	-	-	-	-	-	-	4	II

Mandatory and voluntary savings together constitute microsavings. Informal loan are borrowing from friends and family or moneylender. Remittance payments are formal or informal services people use to receive remittances sent by relatives abroad

Residents of *Ausha* have expressed top preference for the informal loan. This is due to their reliability on friends and family, which is also revealed in the institutional preference matrix. *Ausha* residents rarely borrow money from moneylender. Remittance payment facility is the second desirable service to the villagers. It is interesting to note that remittance is one of the major sources of income for the non-poor in *Ausha* and a source of soft loan (interest free) for the poor indicating a strong poor – non-poor social bond. For these two financial services, people never feel that they are in credit-constrained environment. Consequently, they express less preference for formal microloan and less urge for saving money in formal and informal sources.

Table A1.18 Financial institutions preference: *Bhadeshwari*

Financial Institutions	MFIs	CB	SG	FR	ML	Score	Ranking
Microfinance Institutions (MFIs)	-	MFIs	MFIs	MFIs	MFIs	4	I
Commercial Bank (CB)	-	-	SG	FR	ML	0	V
Small Group (SG)*	-	-	-	SG	ML	2	III
Friends and Relatives (FR)	-	-	-	-	ML	1	IV
Moneylenders (ML)	-	-	-	-	-	3	II

* Village informal group, which saves and collectively invest in farm and non-farm activities

Unlike the residents of *Ausha*, people in *Bhadeshwari* mostly depend on microfinancial institutions in their financial activities. Moneylender comes next when considering borrowing for deficit or crisis financing. This indicates that *Bhadeshwari* residents are more credit risk than the residents of *Ausha are*. High demand for credit from moneylenders although the rate of interest is extremely high shows that *Bhadeshwari* people are facing severe credit constrains. Unlike the rich people in *Ausha*, non-poor in this village do not keep close tie with poor community. Rather they attempt to offer loan at moneylender's rate if requested. Friends and relatives are not useful institution as in *Ausha* that indicates weak social ties. Like in *Ausha,* banks are the least preferred financial institution among the *Bhadeshwari* residents. These people here also mention that distance, minimum deposit requirements, collateral for loans and required papers for opening an account are main reasons for least preference for bank services.

Table A1.19 Financial instruments preference: *Bhadeshwari*

Financial Institutions	FML	IL	MS	VS	IS	RP	Score	Ranking
Formal Microloan (FML)	-	FML	FML	FML	FML	FML	5	I
Informal Loan (IL)	-	-	IL	IL	IL	IL	4	II
Mandatory savings (MS)	-	-	-	VS	MS	MS	2	IV
Voluntary savings (VS)	-	-	-	-	VS	VS	3	III
Informal savings (IS)	-	-	-	-	-	IS	1	V
Remittance payments (RP)	-	-	-	-	-	-	0	VI

Mandatory and voluntary savings together constitute microsavings. Informal loan are borrowing from friends and family or moneylender. Remittance payments are formal or informal services people use to receive remittances sent by relatives abroad

Most of the residents of *Bhadeshwari* prefer microloans for household and investment finance. Next preference is informal loan, which is mostly from moneylender as revealed in the institutional preference

matrix. *Bhadeshwari* people have weak social link and thus low opportunity for interest free loan from friends and family members as in *Ausha*. Overall, people are credit constrained and they try to overcome this problem by saving more. According to the PRA participants, voluntary and mandatory savings in microfinancial institutions crowd out the traditional savings behaviour. Remittance payment facility is the least desirable among the financial services for the villagers as the number of immigrants is not as significant as in *Ausha*.

A1.8 Direct observation

Direct observation is a classical method of scientific enquiry that allows the observer to focus on specific areas of interests and record events and behaviours as they occur. In this study, focus of the direct observation was group meetings of three MFIs (Grameen, ASA and FIVDB) operating in the sample villages. Main objective of this direct observation was to see the financial behaviour of the MFI clients and find any gap between financial provision and financial participation. Group meeting were observed in overt and covert ways. Covert observation is important to capture the behavioural difference between obviously and secretly observed events. There are also variations in what people do and what people say they do which could be recorded by direct observation.

MFI group meetings are centre for financial provision and financial participation. MFI field staff approves loan proposals and accepts loans and savings instalments in the meeting. In addition, there is a process for default mitigation and issue based discussions for solving problems. Apart from loan repayment and savings accumulation, financial participation of the clients comprises access to financial advices and training for financial literacy. These are needed for financial capacity building that enhances cognitive resources of the clients. Clients should be able to make business plan, express the need for loan, and take control over financial assets. Group meetings could be an ideal place for the rural people to gain financial capabilities. Direct observation of the group meeting reveals real situation of the capacity building and cognitive resource mobilization.

Ideal group procedures: MFI group comprises 30-35 members including executive posts of president, secretary and cashier. The group is divided into subgroup of 5-7 members. Meeting is normally held in the yard of president between 9.00 am to 1.00 pm on a predetermined day in a week. Field officer designated to the meeting attends the meeting to monitor and supervise the meeting procedure. All members attend the meeting with passbook in hand inside which weekly loan instalment and savings are kept. The cashier collects those passbooks and hand them over to the officer. The meeting starts after the recitation of 'development oath' (e.g. 16 points in Grameen meeting). Loan proposal, default mitigation and issue-based discussions including financial planning and advice are held through presidents and secretary. Loan officer then conducts financial adjustments in the client's passbook and return to the office and makes necessary entry in branch accounts. All disbursements are held in the branch office except for small savings withdrawal. Financial literacy training is normally referred to adult learning package of the MFIs to save time of the meeting (in case of FIVDB community learning programme). Serious loan default cases are mitigated by the branch manager in the afternoon of the meeting day.

Real pictures: Loan officers were fund very busy in financial provision activities i.e. collection of loan instalments and savings, entry in passbook, and approving preliminary loan proposal and saving withdrawal. Financial participation remained incomplete as group cohesion and cognitive resources mobilization was less practiced or ignored. Many members just attended the meeting to hand over the passbook with loan and savings instalment to cashier. Some of them could find no time to attend the meeting physically but sent those things through family members or friends. Though recitation of 'development oath' is compulsory in Grameen centre meeting, it was found only in overt observation not when the surveillance was covert. There was no time left for the loan officer for any issue based meeting or financial plan and advice for the members. Group meeting is designed to enhance financial capability through training and financial advice. In reality, members were found ignorant about their passbook entry. They reported that they depend on the school going family members to cross check the balance. Day-to-day money management advice was replaced by pressure on regular instalment payments. Branch manager's afternoon visits were focussed only on recovering default instalments. 'Those visits were aimed at keeping 100 percent recovery rate' – asserted by a manager that means not helping the members to show or advice how to avoid or manage default risk. Members complained about their harsh behaviour in extreme cases e.g. forcing them to sell household durables.

A2 Poverty Scorecard (PS)

Data collection in household income and expenditure survey (HIES) is very difficult and costly. Data collectors have to visit each of the sample households every day for about two weeks to gather information on hundreds of expenditure items including daily food consumption. In the end,I get a huge data set ready for quantitative poverty analysis. To simplify the process for small sample, one can apply bootstrap regression techniques and calibrate on observed characteristics and past income fluctuations in large sample like HIES. This technique can also be used to minimise the number of variables or indictors that are very sensitive poverty. Schreiner (2013) applies this technique on Bangladesh household survey data (HIES, 2010) to construct Poverty Scorecard (PS). In this scorecard data items has been drastically reduced from 400 to ten most vibrant poverty correlates presented in a single page scorecard. Indicators in the poverty scorecard are inexpensive to collect, easy to answer and simple to verify (e.g. it inquires easily verifiable construction materials of the walls of main room rather than non-verifiable value of the house). Using poverty scorecard fieldworkers can easily collect data, tally the score and calculate household poverty index within ten minutes. Unlike household survey and participatory approach, it does not require skilled enumerators. Total score of the scorecard is then converted to likelihood that a household has expenditure below the poverty line. It can also be used to estimate the poverty rates of a community or society at a point in time or over time.

Construction of the Scorecard: Schreiner (2013) developed poverty scorecard for Bangladesh based on the most recent HIES (2010) data from 12,240 households conducted by Bangladesh Bureau of Statistics (BBS). He uses half of the sample for constructing and calibrating the scorecard and the rest for validating its accuracy for estimating poverty likelihood and poverty rates. At first, 120 candidate indicators are selected from a list of over 400 expenditure items in five major areas: family composition, education, housing, assets ownership, and employment. Then 10 poverty sensitive indicators are selected from the candidate indicators using judgement and statistics. Judgement criteria are: user friendly (defined by simplicity and cost-effectiveness), sensitive to changes in poverty and applicable across the region. The scorecard is based on 1.25/day 2005 PPP poverty line and built on logit regression on the calibration subsample. The regression is conducted in cumulative iteration starting from one indicator and adding ne more in each repetition until reaching 10 well-suited variables. Points in the scorecard are non-negative integers calculated from coefficients of the logit regression in such a way that total score ranges from 0 to 100 (from most likely to least likely).

Estimating poverty likelihood: Scores are not directly converted to poverty likelihood using the odd ratio: $e^{socre}/(1+e^{socre})$, rather they are calibrated with poverty likelihood in the calibration subsample defined as the ratio of households who are below the poverty line to those who have the score. For example, in HIES 2010 there are 7,617 households in the subsample with the score 30-34 of which 3112 households are below the upper poverty line. Hence, estimated poverty likelihood associated with the score range is 40.9% (i.e. 3112 / 7617 = 40.9%). If a household has actual score within the range of 30-34, then there is a 40.9% possibility that the household fall below the poverty line. Poverty likelihoods with upper and lower poverty lines for all ranges are reported in poverty likelihood index (Table A2.1).

Accuracy and validation: The calibration process produces unbiased estimates of the poverty likelihood when applied to representative samples assuming that future relationship between indicators and poverty prevails. However, biasedness (i.e. mean difference between true and estimated value) may arise when applied to different or non-representative sample or applied beyond 2010. To check the accuracy and precision of estimates for these sources of biasedness, the new scorecard is applied to validation sample of HIES, 2010 and full sample of HIES, 2000 and 2005 with bootstrap of n=16,384. The average absolute difference is found 0.4 percentage points for 2010 validation sample, 2.8 percentage points for 2005-2010 period and 5.2 percentage points for 2000-2010 period (Schreiner, 2013). This indicates that biasedness is statistically insignificant. Therefore, the scorecard can be used on representative sample and period beyond 2010.

This study uses poverty scorecard and index to measure poverty likelihood for *Ausha* and *Bhadeshwari*. Total 210 randomly selected households are visited (105 from each village) with scorecard to collect quick data for quick poverty analysis. The outcome i.e. likelihood of a household falling below the poverty line is used as proxy for vulnerability of the household to poverty. Example: in the scorecard next page, total score for a hypothetical household is calculated to be 34. From the poverty likelihood index (Table A2.1) we see that the corresponding poverty likelihoods under the upper and lower lines are 40.9 and 19.1 respectively. Hence, the household has 40.9 percent chance that its expenditure falls below the upper poverty line. For lower poverty line the likelihood is 19.1 percent.

Poverty Scorecard for Household

Name of the participant _____Date: _____

Identification No.: _____ No. of household members _____

Village or Community: _____District: _____

Indicators	Response	Points	Score *
1. Number of children aged 12 years and below.	A. Three or more B. Two C. One D. None	0 10 16 29	0
2. Do all children aged 6-12 currently attend school?	A. No B. No one is 6-12 C. Yes	0 3 6	6
3. Does anybody in the household worked for daily wage during the last 12 months?	A. Yes B. No	0 8	8
4. Number of rooms in the household (excluding rooms for business).	A. One B. Two C. Three or more	0 3 5	3
5. Main construction materials of the walls of main room.	A. Mud /hay/bamboo or other B. C I sheet/wood C. Brick/cement	0 2 9	2
6. Any television in the household?	A. No B. Yes	0 7	0
7. Any fan in the household?	A. None B. One C. Two or more	0 4 7	0
8. Any mobile phone in the household?	A. None B. One C. Two or more	0 8 15	8
9. Any bike or motorcycle or scooter in the household?	A. No B. Yes	0 4	0
10. Does the household own or leased (in or out) more than 0.5 acres of land (excluding fellow or homestead land)?	A. No B. Yes	0 7	7
* Score of a hypothetical household		**Total Score**	**34**

Adapted from Schreiner (2013)

Table A2.1 Poverty likelihood index for Bangladesh

Score	Poverty likelihood (%)	
	Poverty line	
	Upper	Lower
0–4	87.3	76.2
5–9	84.6	70.6
10–14	82.1	63.6
15–19	68.0	46.4
20–24	62.7	37.1
25–29	50.4	26.6
30–34	40.9	19.1
35–39	36.0	15.0
40–44	26.7	12.7
45–49	19.6	6.6
50–54	14.7	3.9
55–59	7.1	1.5
60–64	5.3	0.9
65–69	4.4	0.4
70–74	2.3	0.2
75–79	1.2	0.0
80–84	0.5	0.0
85–89	0.0	0.0
90–94	0.0	0.0
95–100	0.0	0.0

Source: Schreiner (2013)

A3 Focus Group Discussions (FGDs)

The main aim of FGDs in this study was gathering qualitative data on vulnerability, coping capacity and financial inclusion from both service receiver groups (common people or agents) and service provider groups (specialized people or principal). The data collection team (the author as moderator and two data collectors) conducted five FGDs in each village: three with poverty groups (extreme poor, poor and non-poor), one with financial service provider group (MFI field staff, moneylender) and another with other services provider group (village doctor, local government members). Each group comprised 6-10 participants who discussed the issues initiated by the moderator. At first, the moderator introduced the data collectors and explained its purposes before the audience. Then the main discussion started. The audience spoke *Bangla* with *Sylheti* dialect that was understood easily as it was incidentally the mother tongue of the data collectors. The research assistants operated digital recorder and took field notes for documenting the discussion. Prior permission was taken from the discussants on condition that participants would remain anonymous and the data would only be used for research. Discussions were held in flexible atmosphere but the moderator was aware of the limit. A set of prompts and probes for each group helped the moderator to limit the discussion within the scope of the study.

A3.1 Poverty groups

Poverty groups were identified by the PRA wealth ranking exercises. I invited 6-10 male and female participants from each group (extreme poor, poor and non-poor). Selection was not at random but on availability and willingness to participate. Focus was coping capacity and financial inclusion.

Prompts and probes

Introductory: Introduce yourself please. If you are an MFI member, how long is your membership.

Opening Questions: How do you manage risks and shocks in your livelihood? How do you solve financial crises?

Transitory Probes: Tell us about existing financial services in your area and your needs and preferences for financial services.

Key Questions: What are the major difficulties in access to financial services in your area? Do you get financial consultation and training from the service providers regularly? What types of difficulties do you face in coping with crisis?

Summary transcript: There are similarities and dissimilarities among poverty groups in risk management capacity and extent of financial inclusion. Participants in all groups report similar pattern of risks and shocks they face in livelihoods. However, coping capacity and resilience building differ between the groups depending on the level of assets. Extreme poor groups in *Bhadeshwari* feel that informal loans are costly and private savings are inadequate and thus they seek government grants and relief. The urgency is lower in *Ausha* as they get zero or low cost fund from rich patrons and the number of government fund recipients matches the funds. The moderately poor participants, most of whom are MFI members, admit that they use MFI loans and savings for combating crises in addition to their loan from informal sources and private savings. They urge for emergency loan and instant withdrawal facility from the MFIs. Non-poor participants are more capable and resilient against the risks shocks as their financial and non-financial assets base are stronger. All participants expressed concern about low or even no access to mainstream banking. These are due to distance and procedural barriers of the banks. However, non-poor participants report that they have banks accounts but distance and other barriers make their use of the services less frequent. They are not eligible for MFI services. They urge for access to MFI services even if it is with savings only membership without loan facility. During the discussion, participants reveal some gender gaps in coping capacity and financial inclusion. Women are more concerned with micro type of crises such as minor illness and child related problems. They are interested in precautionary savings to deal with these crises. Men are responsible for meso crises such as land dispute, accidents, and crop failure. They are interested in investment motive of savings e.g. savings in kind that may release some fund for investment and assets accumulation. Male participants complain about financial exclusion, as they are not eligible for MFI membership. Finally, participants from both area report that they have numeracy training from FIVDB but it was not enough. They seldom get financial advices from the MFIs. Main difficulties they face in crises time is, as they report, lack of cash on hand or emergency fund from either MFIs or government.

A3.2 Financial service provider group

This group contains representatives from formal and informal financial service providers such as MFI field staff and moneylenders who directly work with the residents of *Ausha* and *Bhadeshwari*. I organized group discussion in each village with 6-8 participants from MFIs (Grameen, ASA and FIVDB) operating in that village, patron from *Ausha* and moneylender from *Bhadeshwari*. Patrons are soft loan providers who do not charge interest. There is no professional moneylender in *Ausha*. FIVDB does not offer financial services in *Bhadeshwari*. The main aim of these FGDs is to know about the extent of financial inclusion in the two villages.

Prompts and probes

Introductory: Introduce yourself please. How long are you in this profession?

Opening Questions: Why do people need financial services? How do you help them solve financial crises?

Transitory Probes: Tell us about your financial service provisions in this area and future plan of your institution (or yourself in case of moneylender).

Key Questions: What are the major difficulties in providing to financial services in this area? Do you arrange financial consultation and training for your clients?

Summary transcript: People in *Bhadeshwari* mainly need financial products to invest in small trading and grocery. Some fishermen need working capital for fishing material such as fishing net. Few clients ask for agriculture loan. In *Ausha*, larger loans go to service sector clients such as taxi driver who needs money for new vehicle or for servicing the running one. Some of the clients need money as they get remittance later than the time in need (due to transaction time). Many clients in both areas demand for savings only membership which is, according to the respondents, against the service rule of MFIs and guidelines of regulatory body. In response to the query in crises finance, respondents report that clients can withdraw

their savings any time when they face emergency. However, clients do not get emergency loan from any MFIs. Moneylenders in *Bhadeshwari* report that although most of their clients are non-MFI members and non-poor they sometimes lend money to MFI members when they face crisis especially for repayment of default loan in their organization. Interesting information from the moneylender respondent is that husband of some MFI clients run moneylending business using the loan of their wives. These activities remain secret among the clients as MFI officials strictly discourage them engage in such practices. Patrons in *Ausha* argued that there is no commercial moneylending in the village in the sense that they (Patrons) lend money not for earning interest but for charity. They provide *karde hasanah*, which is a zero-interest loan with no fixed time for repayment and no obligation to pay back on serious ground. In response to probe in training arrangement FIVDB officials report that they are providing adult literacy and numeracy training through its Community Learning Centre (CLC) in both villages. However, financial advice and in-depth training on day-to-day money management are not included in that programme. Grameen Bank members have to recite '16 decisions', which is a kind of motivational reminder to client's financial and economic development. ASA does not have such programme. Field staff from all MFIs argues that advices and training are common practices when they deal with their clients but not in a systematic way. The clients consult with the field staff and branch manager before taking the loan and during the repayment schedule.

A3.3 Other services providers group

This group contains representatives from local government, rural doctor, and village chief who provide administrative and non-financial services to people of *Ausha* and *Bhadeshwari*. I organized an FGD in each village with 5-6 participants from the other services group to discuss about the livelihood intervention with non-financial services.

Prompts and probes

Introductory: Introduce yourself please. How long are you in this profession?

Opening Questions: What is the importance of your services to rural people? How do you help solving their crises?

Transitory Probes: Tell us how do you provide services or accomplish administrative duties in this area.

Key Questions: What are the major difficulties in providing services or implementing governmental programmes in this area? What is your plan?

Summary transcript: local government (Union Council) implements construction, repair of rural infrastructure, and allocate social security allowances from the central government. *Ausha* and *Bhadeshwari* villages are under *Mogolgaon* and *Zawa Bazaar* union council respectively. Representatives from both councils report that infrastructure development works in the villages are ongoing without any problem. However, distribution of government grants and allowances are inadequate for *Bhadeshwari* as the number of allocation is less than the actual number of candidates. This problem does not arise in *Ausha*. People in *Bhadeshwari* are more disadvantaged compared to people in *Ausha* and they seek more government attention. The services of rural doctors (paramedics) are essential for minor illness such as fever, flu, dysentery and diarrhoea. Two paramedics and a homeopath practitioner run drug shops in *Bhadeshwari* Bazaar. Some people prefer herbal medicine prepared by a retired schoolteacher in *Bhadeshwari*. For serious illness, people go to upazila heath complex at *Koitak* or hospitals in Sylhet. The situation is different in *Ausha*. As Sylhet city is only 12 km away, they rush to the hospitals for any health emergency. For minor illness, they depend on an MBBS doctor practicing in *Toker Bazaar* (8 km from *Ausha*). In case of village administration, there is no fixed person who may be village chief. Villagers informally and respectfully nominate some senior residents to run *Shalish* (informal village court). The strength of the *Shalish* depends on social network and system of value judgement. However, the senior people of *Ausha* have more influence on the village compared to *Bhadeshwari*.

A4 Household Questionnaire

Survey on vulnerability, coping capacity and financial inclusion in northeast rural Bangladesh

Hello, my name is _____. I am a member of the team that is conducting a survey on vulnerability to poverty and financial inclusion in rural Bangladesh. A researcher at the University of East London, UK is leading this survey for his doctoral research. We have support of the local institutions providing microfinance to local communities. You are one of approximately 210 randomly selected members of households who are living in rural areas in northeast Bangladesh. Main objective of this research is to determine the degree of risks and vulnerabilities you are facing and assess your coping strategies against those shocks. It also aims to determine the extent of financial inclusion in your efforts. All information you provide will remain confidential and academic use only. Thanks for the time and patience you are providing.

Name of village or community		Survey code	
District		Date and time	

Status of the household head (HHH)

1. Name: _____ 2. Gender: ☐ Male ☐ Female

3. Age or date of birth: _____ 4. Occupation: _____

5. Education: ☐ Primary ☐ Secondary ☐ Higher education ☐ None

6. Marital Status: ☐ Single ☐ Married ☐ Separated/divorced ☐ Widower/widowed

1. Demographic status of the household						
1.1 Members of the households						
Name	Age	Sex	Education level	Occupation	Marital status	Relation with HHH

Notes on codes: Age in years or date of birth, Sex: female = 0, male = 1. Education level: illiterate = 0, only able to read and write = 1, primary = 2, secondary = 3, higher studies = 4, other_____ (specify). Occupation: agriculture = 0, day labourer = 1, small business = 2, carpentry/goldsmith/blacksmith/pottery = 3, unemployed = 4, student = 5, other _____ (specify). Marital status: single = 0, married = 1, separated/divorced = 2, widower/widowed = 3. Relationship with household head: spouse = 0, father/ mother = 1, son/daughter = 2, brother/sister = 3, nephew/niece = 4, grandchild = 5, other _____ (specify).

2. Household income and expenditure		
2.1	Who are responsible for household works?	1 _____ 2 _____ 3 _____
2.2	What major household works they do?	1 _____ 2 _____ 3 _____ 4 _____
2.3	How many people do income generating works?	_____
2.4	What major works they do?	1_____ 2 _____ 3 _____ 4 _____
2.5	What is the average monthly household income?	_____Taka
2.6	What is the average monthly household expenditure?	_____Taka
2.8	Does this HH have enough food for the whole year?	1 Yes 2 No
2.9	If yes, then what is the amount of average monthly food storage?	1 Amount _____Kg. 2 Value _____Taka
2.10	If no, in which months and what amount of shortage are there?	J F M A M J J A S O N D (empty)
2.11	Why are there food shortages in these months?	1 _____ 2 _____ 3 _____
3. Household assets		
3.1	What kind of house do you live?	1 Own 2 Rented 3 Relative's 4 Employer's 5 Other _____(Specify)
3.2	What is the material of the walls of your house? (note the predominant material only)	1 Brick or Concrete 2 C I Sheet 3 Wood or Bamboo 4 Mud Brick 5 Other_____(Specify)
3.3	What is the material of the roof? (note the predominant material only)	1 Concrete or Tile 2 C I Sheet 3 Hemp / Hay / Bamboo 4 Wood 5 Other_____(Specify)
3.4	What is the material of floor? (note the predominant material only)	1 Soil 2 Cement 3 Marble / stone 4 Wood 5 Other_____(Specify)

3.5	Does this house have electricity?	1 Yes 2 No		
3.6	What sources of water does this house use for drinking and cleaning?	1 Pond 2 Shallow tube well 3 Well 4 Deep tube well 5 Other_____(specify)		
3.7	What type of latrine does the household have?	1 Pucca or sanitary 2 Semi pucca 3 Katcha latrine 4 Open field 5 Other_____(specify)		
3.8	Do you know the value of your home?	1 Yes 2 No		
3.9	If yes, what is its value?	_____Taka		
3.10	Which of these consumer goods do you have in your household? (please provide approximate value in Taka)	Goods		Value in Taka
		1 Furniture		
		2 TV, radio or music system		
		3 Bicycle		
		4 Refrigerator or freezer		
		5 Motorcycle		
		6 Wristwatch		
		7		
		8		
		9		
		10		
		Total		
3.11	Which of these tools or equipment do you have in your household? (please provide approximate value in Taka)	Goods		Value in Taka
		1 Plough		
		2 Tractor / power tiller		
		3 Bullock cart		
		4 Fishing net		
		5 Boat		
		6 Tube well		
		7 Water pump		
		8		
		9		
		10		
		Total		
3.12	How many of these animals do you have?	Animal	Number	Value in Taka
		1 Cattle		
		2 Goats		
		3 Sheep		
		4 Chicken		
		5 Ducks/Geese		
		6		
		7		
		8		
		9		
		Total		

4. Land ownership and agricultural output

4.1 Household land ownership (area in decimal and value in market price)

Types of land	Own		Leased in		Leased out	
	Area	Value	Area	Value	Area	Value
Homestead						
Cultivable						
Fellow						
Others						

4.2	Is your land located in an area conducive to flood or draught?	1 Yes 2 No	If yes, when it happens in a year_____
4.3	What is source of water for irrigation?	1 River 2 Channel 3 Deep tube well 4 Shallow tube well 5 Well 6 _____(specify)	

4.4 What are the major crops of the household? (Amount harvested and current market price, reference period: last season).

Crops	Amount (Kg)	Price (Taka)
1		
2		
3		
Total		

5. Risks and vulnerabilities

5.1	What type of crises or risks you face during past 12 months?	1 Natural disaster 2 Illness 3 Lack of food 4 Death 5 Loss in Business 6 Loan default 7 Theft 8 Legal dispute 9 Others, specify_____
5.2	How did you cope with crises?	1 Dissaving from informal sources 2 Selling assets 3 Dissaving from formal sources 4 Daily labour 5 Loan from informal sources 6 Mortgage off land 7 Loan from formal sources 8 Others, specify_____
5.3	Have you had losses to crop production before?	1 Yes 2 No

5.4 If yes, please indicate the causes and values of losses.

Crop	Year	Causes of loss	Value of Loss in Taka

6. Coping and adaptation strategies

6.1 Please indicate, with appropriate reasons, your ability to manage the events listed below

Crisis events	Good	Fair	Poor	Why?
1 Flood				
2 Drought				
3 Cyclone or tornedo				
4 Pests and diseases				
4 Other (specify):				

6.2	How do you prepare for risks and shocks?	1 Accumulate food 3 Save money 4 Diversify crops 5 Sought another job or migrate temporarily. 6 Do nothing 7 Other _____(Specify)
6.3	How do you handle losses associated with risks and shocks?	1 Ask for help from family or friends 2 Sell assets 3 Draw down savings 4 Seek help from government or NGOs 5 Request loan 6 Decrease food consumption 7 Reduce other expenses 8 Do extra work 9 Do nothing 10 Other_____(Specify)
6.4	Did you receive assistance from the Government or NGOs during disasters in the past?	1 Yes 2 No
6.5	If yes, what type of assistance received?	1 Humanitarian Assistance 2 Foods 3 Clothing 4 Medical Assistance 5 Loan 6 Transfer cash (Social Funds) 7 Other _____(Specify)
6.6	What kind of social networks you have?	1 Family 2 Neighbours 3 Friends 4 Rural Community 5 Other _____(Specify)
6.7	How do these networks function in times of crises?	1 Good 2 Fair 3 Poor

7. Financial assets and liabilities

7.1	Do you belong to an organization (NGO or MFI) or cooperative?	1 Yes 2 No	
7.2	If yes, which organizations and how long?	1_____ 2 _____ 3 _____	
7.3	Do you have any formal or informal loan?	1 Yes 2 No	
7.4	If yes, what is the name of the organization?	Formal 1 Grameen Bank 2 Krishi Bank 3 NGOs/MFIs 4 Others, specify_____	Informal 1 Moneylender 2 Friends 3 Neighbours 4 Others, specify_____
7.5	If no, how do you finance your venture (if any)?	1 Dissaving 2 Selling assets (cattle, land, jewellery etc.) 3 Others (specify)_____	
7.6	What is the outstanding amount of loan?	_____Taka	
7.7	What is the interest rate of the loan?	_____%	
7.8	Did you have any default loans?	1 Yes 2 No	

7.9	If yes, how do you manage to repay default loans?	1 Selling assets 2 Selling food stock 3 Withdraw savings 4 Selling labour 5 Other, specify_____	
7.10	Did you have any problem paying the loan?	1 Yes	2 No
7.11	If yes, what kind of problem?	1 _____ 2_____	
7.12	Why did you receive the loan?	1 Buy agricultural inputs (seeds, fertilizer etc.) 2 Working capital for small business 3 Machinery and Tools 4 Construction of house 5 Wedding expenses 6 Expenses of Death / Illness 7 Food purchase 8 To pay default loan 9 Other, specify: _____	
7.13	Worried about debt now?	1 Yes	2 No
7.14	If yes, why are you worried about debt?	_____	
7.15	Are you overburdened with loan?	1 Yes	2 No
7.16	Are you currently saving money with savings organization?	1 Yes	2 No
7.17	If yes, what is the name of the organization?	Formal 1 Grameen Bank 2 Krishi Bank 3 NGOs / MFIs 4 Others, specify_____	Informal 1 Savings group 2 ROSCAs 3 ASCAs 4 Others, specify_____
7.18	If no, how do you save? (Go to Q 7. 20)	1 Cash (deposit box/*matir* bank etc.) 2 Kind (cattle, land, jewellery etc.) 3 Do not save at all	
7.19	How do you save money in these organizations?	Types 1 Compulsory 2 Voluntary 3 Current or savings A/C 4 Time deposits 5 Others, specify_____	Amount per week
7.20	Approximately how much do you have in savings (formal and/or informal)?	_____Taka	
7.21	What are the sources of your saving?	1 Consumption shrinking 2 Income from microenterprise 3 Income from agriculture 4 Wage income 5 Others, specify_____	
7.22	What are the uses of your saving?	1 Repaying default loan 2 Working capital for microenterprise 3 Emergency use, specify_____ 4 Protecting future Wage income 5 Others, specify_____	

Appendix B: Mobile Financial System

Mobile Financial Services (MFS) combine banking and financial services with mobile networks that enable users to execute financial transactions using a mobile phone. Mobile financial services comprise three major services: 1) Mobile banking services – loan disbursement and recovery, deposits and withdrawal, fund transfer from one account to other, and information services (e.g. checking balance). 2) Money transfers such as domestic and international remittances. 3) Mobile payments such as utility bills or merchant payments, payrolls or dividend payments. There are six major players in mobile financial system:

a) **The account provider** manages the client's accounts. It can be a financial institution (BRAC bank in Bangladesh) or a non-bank MFS provider (e.g. Safaricom in Kenya). In case of MFS, provider clients may have an account with the non-bank entity, but funds have to be deposited in a partner financial institution.

b) **MFS provider** hosts mobile money platform in which all transactions are held. The MFS provider may act as an account manager but it needs to be attached with a financial institution if it is a non-bank entity.

c) M**obile network operator (MNO)** carries financial data from one mobile device to another and provides interface for different players to communicate and exchange information on financial transactions.

d) A**gent** is authorised by a bank or financial institution to carry out financial transaction its behalf. It may be a small shop with facilities to register new customers and operate cash service point. As clients need to convert virtual or e-money to physical cash and cash back to e-money, agents must have access to high volumes of cash (liquidity or e-float).

e) **Third-party operators** include all entities providing services related to the delivery of mobile financial services but not directly involved in financial services. These are mobile platform, software companies, and agent network managers – companies that specialise in managing the agents of the service.

f) C**ustomer** is the end-user of the services.

B1 MFS Models

There are four major types of business models in the market:

MNO-led mobile financial services are provided by mobile network operators (MNOs). The advantage of this model is that MNOs can use their existing agent network for financial service delivery in partnership with a bank or MFI. MNO-led services focus mainly on person-to-person (P2P) transactions, merchant and utility payments, payroll, and government transfer (G2P). As MNOs do not have banking license, they need to link their virtual accounts to real accounts in a licensed financial institution if they wish to provide loans, savings and insurance services. Because the cash transactions or deposit must match with virtual circulation of e-money reconciliations are done in real time or at least several times a day. Safaricom is most successful MNO in the world with its mobile financial product called M-PESA.

Bank or financial institution-led MFS is initiated by bank or financial institution to provide mobile banking services to the clients of banks or financial institutions via mobile platform of an MNO. Bank or financial institution uses mobile infrastructure of MNOs to transfer the data on transactions, but uses its own branches or agents for the distribution network. An example of a bank-led model is BRAC Bank in Bangladesh that provides 'b-kash' virtual accounts to the clients for payments and other banking services.

Third party-led models: In this model, mobile financial services are arranged by the institution that has authorisation from the central bank to collaborate with financial service providers. Examples are VISA and MasterCard, MobiCash in Bangladesh and GCash in the Philippines. These institutions provide platform for financial institutions to manage wide range of services including card purchase, remittances, airtime top-up, and bill payments. MobiKash in Kenya gives real time access to accounts at participating banks through any mobile network. It offers an agent network, and middleware for inter-bank transactions.

Hybrid model involves a joint venture between an MNO and a financial institution. Example of such model is a partnership between Tameer Bank in Pakistan and Telenor that offers mobile financial service 'EasyPaisa'. Main advantage of this model is that it can ensure optimum utilization of both financial services of the financial institution and agent network of the MNO. Another example of hybrid model is found in Kenya where there is a partnership between Equity Bank's M-Kesho and Safaricom's M-PESA.

It allows users to transfer money from M-PESA e-wallet to M-Kesho savings account that earn interest. It also provides account holders loans and insurance products from Equity Bank.

B2 Payment Process

1. *Registration*: A client has to open account with mobile financial service provider such as MNO, bank or third party. The registration is carried out either at branch or agent level. Client need to provide valid identification such as national ID before receiving an account number and a PIN (personal information number).

2. *Virtual money*: The client has to convert his or her physical cash to 'virtual' or electronic money (e-money) and deposit into their e-wallet. Depositing funds is free of charge and can be held at branch, ATM or agent level. However, client has to pay a fee for withdrawal or transfer.

3. *Sending money*: Transactions are sent using mobile protocol[3] like SMS, USSD, or WAP. Sender must have the phone and account number of the recipient who is also registered with the services or simply a bank account number for recipient without mobile money account. The transaction is validated by PIN code provided at account opening.

4. *Receiving money*: Recipient receives an SMS informing the amount of e-money received and name or phone number of the sender. Recipient then convert the e-money into physical cash at an agent immediately or keep it in her e-wallet for later withdrawal. The recipient often pays the agent a fee to convert e-money to cash.

5. *Confirmation*: Once the transaction is completed, sender receives an SMS confirming the transaction that contains the amount sent and phone or account number of the recipient. SMS may show reference number of the transaction and balance in e-wallet. Sender can save the SMS or print it for reference.

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[3] Unstructured Supplementary Service Data (USSD) is a protocol used by GSM cellular telephones to communicate with the service provider's computers. Wireless Application Protocol (WAP) is a Web interface that requires an Internet-enabled handset.

Appendix C: *Micro Résumé*

Mohammad Sadiqunnabi Choudhury holds a Master of Science in Economics from Queen Mary University of London, UK. He is now a PhD candidate in the School of Social Sciences at the University of East London. He has several years of teaching and research experience in the field of economics and development studies. He started his research career as a Staff Economist in 1995 at Bangladesh Rural Advancement Committee (BRAC) – a leading MFI in Bangladesh. He then worked for the Research Department of Bangladesh Bank – the central bank of Bangladesh during 1997- 2005. At present, he is an Assistant Professor of Economics at Shahjalal University of Science and Technology, Sylhet, Bangladesh. His research interest ranges from microfinance to poverty alleviation and from financial inclusion to monetary policy focusing economic and financial development of the poor.