

Livelihood and food security in rural Bangladesh

The role of social capital

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The role of social capital

Ahmed Ali

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CONTENTS

Acknowledgements	i
List of Contents	iii
List of Tables	viii
List of Figures	xi
CHAPTER 1 INTRODUCTION	
1.1 RESPONSE project – Working Program 2 (WP2) (collaboration with IFPRI)	1
1.2 Set up of the research	2
1.3 Elaboration of research problem	3
1.4 Structure of the thesis	4
CHAPTER 2 THE COUNTRY AND THE RESEARCH AREA	
2.1 Country profile	7
2.1.1 The physical setting of Bangladesh	7
2.1.2 The ecology of Bangladesh	7
2.1.3 Demographic and health profile	9
2.1.4 Education	12
2.1.5 Political and government (administrative structure)	12
2.1.6 Socio-economic conditions	14
2.1.7 Social organization	20
2.1.8 Food production and famines in Bangladesh	22
2.2 Description of the study area	24
2.2.1 Location and infrastructure	24
2.2.2 Socio-economic conditions	25
2.2.3 Household composition	28
2.2.4 Education	28
2.2.5 Health and family planning	30
2.2.6 Water and sanitation	33
2.2.7 Social structure and community life	34
2.2.8 Social change and development	37

CHAPTER 3	LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK	
3.1	Research problem	41
3.2	Discussions and definitions of key concepts	42
3.2.1	Household	42
3.2.2	Food security	45
3.2.3	Nutrition adequacy	47
3.2.4	Livelihood security	49
3.2.5	Vulnerability	51
3.2.6	Household livelihood strategies	54
3.2.7	Decision-making	57
3.2.8	Risk	58
3.2.9	Social capital	59
3.2.10	Gender perspective	62
3.2.11	Temporal perspective	66
3.3	Conceptual framework	69
CHAPTER 4	DATA COLLECTION AND ANALYSIS	
4.1	Study design	73
4.2	IFPRI panel data	73
4.2.1	Sampling	74
4.2.2	Analysis of IFPRI panel data	74
4.3	Field data collection	75
4.3.1	Observation	76
4.3.2	Case study	76
4.3.3	Life history	77
4.3.4	Focus group discussions (FGDs)	77
4.3.5	In-depth interviews with key informants	78
4.3.6	Qualitative data analysis	78
4.3.7	Additional survey	78
4.4	Linking quantitative and qualitative data	78
4.5	Time schedule of the research	79
CHAPTER 5	LIVELIHOOD SECURITY AND VULNERABILITY	
5.1	Livelihood portfolio	81
5.2	Livelihood strategies	86
5.3	Livelihood security and vulnerability	97

5.3.1	Determinants of total household expenditure	97
5.3.2	Determinants of food vulnerability	98
5.4	Effect of the 1998 floods on the livelihood portfolio	100
5.5	Decision-making	101
5.6	Changes in livelihood strategies in the context of social change	102
5.7	Discussions and conclusion	103
CHAPTER 6	COPING WITH ADVERSITY	
6.1	Women's coping with the death of the husband	106
6.1.1	The case of Bela	106
6.1.2	The case of Rima	108
6.1.3	The case of Nazu	110
6.2	Women's coping with divorce	110
6.2.1	The case of Jolly	110
6.2.2	The case of Juthi	113
6.3	Women's coping with spouses who are ill	114
6.3.1	The case of Munni	114
6.3.2	The case of Mili	116
6.3.3	The case of Zohir	117
6.3.4	The case of Baten	118
6.4	Discussion of the cases	119
CHAPTER 7	LIVELIHOOD SECURITY: TEMPORAL PERSPECTIVE	
7.1	Livelihood and the household life course	123
7.2	Livelihood changes over time	125
7.2.1	Changes in agriculture and food production	125
7.2.2	Changes in livelihood	125
7.2.3	Changes in the socio-political conditions	128
7.3	Social time	128
7.4	Daily time	129
7.5	Life histories and livelihood	130
7.5.1	The life of an orphan	130
7.5.2	The life of a farmer who became well-off	135
7.5.3	The life of a deserted woman	139
7.5.4	The life of an ever-working woman	146

7.5.5	The life of a traditional birth attendant	151
7.6	Discussion of the life histories	157
CHAPTER 8	FOOD AND NUTRITION SECURITY	
8.1	People's perceptions about food security	161
8.2	Food security, economic status, and stage of the household life course	162
8.3	Food production	163
8.4	Social capital and food security	165
8.5	Gender and food security	168
8.6	Seasonality and food security	169
8.7	Strategies adopted to attain food security	170
8.8	Determinants of food security	173
8.8.1	Determinants of household food security	173
8.8.2	Determinants of individual food security	174
8.9	Nutrition adequacy	174
8.9.1	Nutrient adequacy	174
8.9.2	Nutrient intake differences between the pre- and post-flood situation	175
8.10	Nutritional status among pre-school children	179
8.11	Food beliefs and taboos	180
8.12	Gender and nutrient adequacy	182
CHAPTER 9	SOCIAL CAPITAL AND GENDER	
9.1	Social capital	183
9.1.1	Determinants of social capital	183
9.1.2	Forms of social capital	184
9.2	Gender	187
9.2.1	Marriage, dowry and divorce	187
9.2.2	Gender and social capital	190
9.2.3	Gender and livelihood security	190
9.2.4	Gender and decision-making	192
9.2.5	Gender and food security and nutrition	192
9.2.6	Education, family planning, and health	192

CHAPTER 10	CONCLUSIONS AND DISCUSSION	
10.1	Answering the research questions	195
10.2	Discussion	203
10.2.1	Livelihood and food security	203
10.2.2	Social capital	205
10.2.3	Gender and social changes	206
10.2.4	The temporal dimension of livelihood	209
10.3	Policy implications	210
REFERENCES		213
GLOSSARY		233
ACRONYMS		237
ANNEXES		241
ANNEX I	Checklists for focus group discussions (FGDs)	241
ANNEX II	Checklist for in-depth interview	244
ANNEX III	Additional survey in Bangladesh (July 2003)	245
ANNEX IV	Seasonal calendar of major crops	253
SUMMARY		255
SAMENVATTING		259
Curriculum vitae		262
Training and supervision plan (TSP)		263

LIST OF TABLES

Table 2.1	Changes in demographic indicators 1980–2001 and status in 2004	10
Table 2.2	Changes in health indicators 1980–2001 and status in 2004	11
Table 2.3	Changes in sanitation indicators 1980–2001 and status in 2004	12
Table 2.4	Changes in education profile 1980–2001 and status in 2004	12
Table 2.5	Level and representation of administration	13
Table 2.6	Changes in economic indicators, Bangladesh 1980 – 2001	15
Table 2.7	Cropping pattern of agricultural land	16
Table 2.8	Chronology of food assisted programs	23
Table 2.9	Household size, age and sex composition	28
Table 2.10	Age, sex and marital status of household head	29
Table 2.11	Educational background of the household members	29
Table 2.12	Disease patterns during the past one year and four years prior to that	30
Table 2.13	Health-seeking behavior by gender during the past year and the four years prior to that	31
Table 2.14	Under-five child mortality by age in months	31
Table 2.15	Contraceptive prevalence and use, and reasons for non-use	32
Table 2.16	Sources of contraceptives	32
Table 2.17	Arsenic contamination and use of contaminated water	33
Table 2.18	Type of sanitation and hand-washing practices	33
Table 2.19	Fetching water from tuber wells	34
Table 2.20	Cleaning of household premises	34
Table 2.21	Assistance-seeking behavior	36
Table 2.22	Kinship relations between household heads and wife	36

Table 2.23	Place of residence after marriage	37
Table 2.24	Current involvement of households with NGOs	37
Table 2.25	Reasons for non-involvement with NGOs	38
Table 2.26	Reasons for leaving NGOs	38
Table 2.27	NGOs from which loans were taken	39
Table 3.1	Sources of vulnerability	53
Table 3.2	Complementary categories of social capital	61
Table 4.1	IFPRI data collection schedule	74
Table 5.1	Sources of income of the household head	82
Table 5.2	Determinants of total household expenditure	98
Table 5.3	Determinants of food vulnerability	99
Table 5.4	Differences between pre- and post-flood situations	100
Table 7.1	Livelihood portfolios at different stages of the household life course	123
Table 7.2	Economic status at different stages of the life course	124
Table 7.3	Women's livelihood portfolios	126
Table 7.4	Men's livelihood portfolios	127
Table 7.5	Daily time use of women during normal and post-harvest time	129
Table 7.6	Daily time use of men during off-season and harvest time	129
Table 7.7	Daily time use of different groups of women	130
Table 8.1	Women's and men's perceptions of food security past and present	162
Table 8.2	Self-reported economic status and food security status	163
Table 8.3	Stage of the household life course and food security status	163
Table 8.4	Strategies adopted to attain food security	171
Table 8.5	Determinants of household food security	173
Table 8.6	Determinants of individual food security	174

Table 8.7	Percent of individuals < 80 percent of recommended dietary allowance	175
Table 8.8	Food intake differences between pre- and post-flood periods for adults	176
Table 8.9	Food intake differences between pre- and post-flood periods for school children	177
Table 8.10	Food intake differences between pre- and post-flood periods for pre-school children	178
Table 8.11	Food intake differences between pre- and post-flood period according to household headship	179
Table 8.12	Determinants of nutritional status of pre-school children aged 2-5 years	180
Table 9.1	Determinants of social capital	183

LIST OF FIGURES

Figure 2.1	Map of Bangladesh	8
Figure 2.2	Land area classifications	17
Figure 2.3	Map of the study area (Saturia upazila)	25
Figure 3.1	Bangla terminologies and the concept of “household”	44
Figure 3.2	The linkage between individual food and nutrition security	49
Figure 3.3	Conceptual framework for livelihood and food security in rural households	70
Figure 3.4	Time line analysis	71

CHAPTER 1

INTRODUCTION

“The environment in the Third World is largely a livelihood issue”
(Bryant & Baily, 1997: 159)

This research raises and tries to answer questions about household livelihood and food security and vulnerability in a rural area in Bangladesh. In finding the answers to these questions, special attention is given to the role social capital plays in these processes. Furthermore, since strategies and processes develop over time and external circumstances change, there is an explicit temporal dimension to the research.

This research is funded by the RESPONSE project. The fieldwork was funded by the Neys-van Hoogstraten Foundation. The project is introduced at the beginning of the chapter. The setup of the research, elaboration of research problem and structure of the thesis are presented in the following sections.

1.1 RESPONSE project – Working Program 2 (WP2) (collaboration with IFPRI)

Regional Food Security Policies for Natural Resource Management and Sustainable Economies (RESPONSE) is a collaborative program of Wageningen University and Research Centre (WUR) in the Netherlands and the International Food Policy Research Institute (IFPRI) in Washington DC., USA. The program was designed to strengthen the academic co-operation between Wageningen UR and IFPRI at both the professional and institutional level. The main objective of the program is to develop flexible, dynamic, multi-scale bio-economic modeling approaches to support policy makers in developing appropriate policies to reduce poverty, increase food security and improve natural resources management in less-favored areas of developing countries. The program aims to attain the following specific research objectives:

1. Improved integration of socio-economic and agro-ecological approaches and methodologies for research on sustainable land use and food security;
2. Link analytical approaches for the appraisal of production, consumption, market exchange and resource use;
3. Multi-scale analysis of the effect of market and institutional development on farm household resource allocation decisions, land use, and food security;
4. Spatial analysis of the linkages and interactions among resource allocation decisions, exchange transactions, engagement in off/non-farm labor, and migration patterns.

RESPONSE project has five projects; working programs 1 to 5 are:

WP1 - Resource management: productivity and environment;
WP2 - Livelihood strategies: poverty alleviation and food security;
WP3 - Risk management strategies: coping and insurance;
WP4 - Portfolio choice: infrastructure, investment and institutions;
WP5 - Global and regional trade.

This PhD research is part of WP2. The main focus of this program is livelihood strategies and their implications for poverty alleviation and food security. WP2 deals with the analysis of individual and collective (household) livelihood strategies in less favored and ecologically fragile areas with limited infrastructures and accessibility, that are troubled

by population pressure. The household is the unit of analysis, but household-level findings also have to be assessed for their regional and national significance.

As mentioned above, WP2 is part of collaboration between WUR and IFPRI. Wageningen University contributes its expertise in the fields of rural livelihood systems and food and nutrition. IFPRI contributes their data collected over a long period of time and their expertise in the analysis of panel data focused on intra-household bargaining, agriculture-nutrition linkages and poverty assessment.

There are two research projects in WP2, one emphasizing the spatial and the other the temporal perspective. The first project was carried out in the Philippines, the second in Bangladesh. This PhD research is the second research project, focusing on the temporal perspective. The longitudinal aspect of building and securing livelihoods, including the role of social capital, is one of the key issues addressed. The research is intended to contribute to policy debates and policy design to alleviate poverty and food insecurity. The issue of regional variability and cultural specificity versus generally applicable approaches and generalization of findings, using a gender-sensitive approach, represents the common framework of these investigations. The aim of this research is to investigate the pattern of livelihood, food security and vulnerability and the use of social capital in these processes using a temporal perspective.

1.2 Set-up of the research

Bangladesh is a small South Asian country with an area of some 147,570 sq. km, where nearly 127 million people struggle for survival. Bangladesh has the highest population density in the world: 894 persons per square kilometer (BBS, 2004). Bangladesh has to cope with poverty, resource scarcity, population pressure and natural calamities. Political turmoil added a new dimension to these factors. Political conditions have had profound impact on the ecology and people's livelihoods. Despite all these constraints, the people of Bangladesh manage to survive.

This research project is divided into two parts. Part one concerns the analysis of IFPRI panel data, collected over five years in two phases: the period before the 1998 floods and the period after that. IFPRI collected detailed information on socio-economic variables, daily consumption, daily time use, health, water, sanitation, and so on. Data was collected in Saturia *upazila*¹ through four rounds during Phase 1 (pre-flood, 1996-97) and three rounds in Phase 2 (post-flood, 1999-2000) in 313 households. The data collected is quantitative in nature.

The second part of this research project concerns data collection in the field, in the Saturia *upazila*, using methods such as observation, case study, oral history, focus group discussion and in-depth interviews. An additional survey was carried out to fill gaps and supplement the IFPRI data. Except for the additional survey, all collected data was qualitative in nature. The field data was collected during November 2002 through September 2003.

¹ Bangladesh is divided into 64 districts. A district is subdivided into *upazilas* that are divided into unions (lowest administrative unit). Unions are subdivided into wards, and wards into villages which are composed of *para* and, ultimately, of households.

This research tries to link quantitative to qualitative data to get detailed insights into livelihood strategies and social capital as developing over time to attain livelihood and food security among the households in the study area.

1.3 Elaboration of research problem

Bangladesh is located in an ecologically fragile environment. The daily life of the people is greatly influenced by its climate and geography. The country is situated on a deltaic plain and has three mighty rivers, the *Padma*, the *Jamuna*, and the *Meghna*, and their numerous tributaries. Bangladesh has a tropical monsoon climate and many parts of it are normally inundated by water at a level of 3-4 meters, most of it coming down from India. Drought is the other side of the coin, which occurs as an alternate phenomenon. In addition, tropical cyclones, storms, and tidal bores aggravate the situation. The rural people are coping with all these circumstances on their own or with the help of the government and NGO's, together with international donors. As huge numbers of people are affected simultaneously, whatever help the government or donors offer them is negligible in comparison to what is needed in their destitute situation. In a situation like this they use social capital, i.e. seek the assistance of kin, community, or local elite. The local moneylender (*mahajan*) is also a person to turn to in time of need. Poverty has engulfed the rural people who are living in a fragile environment. These people face many challenges to achieve and maintain their livelihood and food security.

Studies conducted elsewhere suggest that livelihood and food security can be vulnerable to households becoming trapped in vicious cycles of poverty. To attain livelihood and food security, people need resources and assets, which poor people lack. Due to resource constraints the poor are most likely to be concentrated on the most degraded and fragile land with a risky environment, making their livelihoods even more vulnerable (Dietz, 2000). It is necessary to have a clear understanding about the livelihood strategies of the rural people as they develop over time, in view of designing appropriate interventions and policies.

Women in a male-dominated society like Bangladesh are likely to lose out in the intra-household distribution of food. In line with cultural norms, women take food after the men in the household. As a result they have to be satisfied with the leftovers, which are usually not enough to satisfy their calorie requirements as well as being nutritionally inadequate. The people are less serious about girls' education and welfare compared to that of boys. Girls are often treated as burdens (liability), while boys are seen as assets to families. Thus, more attention is given to the sons' welfare than that of daughters. This has been reflected in unequal sex ratios in Bangladesh but seems to be changing (primary school enrollment - female 98 and male 97 percent) (UNFPA, 2004). To redress the situation of gender inequality, NGOs tend to direct their activities towards women and make loans available to them. However, credit taken by women tends to be invested and enjoyed by their husbands and sons while repayment of the loan is solely the responsibility of the women. Husbands or in-laws harass women who cannot take loans and, at the same time, NGO workers harass women when they cannot repay the loan on time. This is a double burden for women. Additionally, women are often asked by the husbands and in-laws to contribute money from their parental family in times of crisis. This all shows the need for a gender-sensitive analysis of livelihood research.

To address the research problem we have to look into the matter of how rural people generate and maintain their livelihoods. If we want to understand livelihood from the

people's perspective, then we have to know the dynamics of rural livelihood systems and the strategies people deploy. There will be different types of livelihood strategies in different situations. People develop their livelihood strategies according to the situation they face. They use their assets, such as livestock or savings, and they use social capital to handle or overcome critical situations. Based on the considerations outlined above, the objectives of the research can be formulated as follows:

1. Investigate the livelihood systems of rural households.
2. Provide insight into the patterns of livelihood strategies, food security and vulnerability as developing over time.
3. Investigate the influence of ecological, demographic, and cultural, and socio-political factors on livelihood strategies as they develop over time.
4. Investigate the factors affecting household livelihood generation, budgeting and food consumption decisions.
5. Investigate the use of social capital in livelihood strategies as a risk mitigation device from a temporal perspective.
6. Develop a gender sensitive conceptual framework that links livelihood strategies and the use of social capital to livelihood and food security and vulnerability.

1.4 Structure of the thesis

Chapter 2 presents an overview of Bangladesh, including its geographic attributes, ecology, the history of food production and famines, and a description of the study area. Information on socio-economic development in Bangladesh during the past twenty years is presented using secondary data. Topics like socio-economic change, socio-economic stratification, food security, gender disparities, health and family planning, migration, NGO activities, village life, daily activities, kinship and marriage are discussed as well.

The conceptual framework of the research is presented in Chapter 3. This chapter discusses the definition and operationalization of different key concepts such as household, food security, livelihood security, vulnerability, household livelihood strategy, decision-making, risk, social capital and the temporal and gender perspective. Subsequently, the linkages between these concepts are visualized in a conceptual framework.

The study design and data collection and analysis are presented in Chapter 4. It is explained how the IFPRI panel data were collected. The chapter also explains why and how additional qualitative and quantitative data were collected in the field. A time frame according to which the research was carried out is given at the end.

Chapter 5 discusses the issue of livelihood security and vulnerability in the context of time, gender and social capital. The first part discusses the composition of livelihood portfolios; the second part presents the case studies that illustrate people's livelihood activities and strategies. The third part presents an analysis of IFPRI panel data on livelihood determinants and the effects of 1998 floods on livelihoods in the area. The chapter is concluded with discussion on decision-making and changes in livelihood strategies in the context of social change.

Chapter 6 looks at how rural households in the research area are coping with adversity. The main question in this chapter is how households avert vulnerability and sustain their livelihood with their assets or resources and the use of social capital.

Chapter 7 discusses the temporal dimensions of livelihood security. It starts with a discussion of the relationship between the life course of households, their livelihood portfolios and their economic status. This is set against the background of the changes in agriculture, food production, socio-political conditions and gender relations, and the impact of the 1998 floods on livelihood. The second part looks at how different types of time influence individuals and households. To conclude the chapter five life histories are presented, which illustrate and explain changing gender relations, livelihood strategies and the significance and use of social capital to avert vulnerability and sustain livelihoods.

Chapter 8 discusses food security, nutrient adequacy and nutrition security issues using a gender and a temporal perspective. The first part discusses people's perception about food security and the role of social capital and gender in implementing the strategies to attain food security. The effect of social change on food security is also discussed in this part. This chapter also looks at how livelihood status affects food security at the household level, and how household food security translates into individual food and nutrition adequacy. The chapter continues with an analysis of IFPRI panel data on the determinants of household and individual food security and food vulnerability. The issue of nutrient adequacy and nutrition status at individual levels and the effects of 1998 floods on nutrient adequacy and nutritional status are also analyzed with the application of a gender and a temporal perspective. At the end, the chapter looks into how food beliefs and taboos, and gender affect nutrition adequacy.

Chapter 9 discusses the empirical dimensions of social capital and gender, their relationship, and their significance for livelihood and food security. The first part presents an analysis of IFPRI panel data on determinants of social capital, operationally defined as credit taken without collateral, and forms of social capital in the research area. In the second part of the chapter the role of gender on food security and nutrition, and education, family planning and health issues, is investigated.

Chapter 10 is the concluding chapter where answers to the research questions are presented. This chapter also discusses the linkages between social change, social capital, and livelihood strategies, using a temporal perspective. The linkages between the household level and regional and national levels with regard to these issues are discussed as well to show how national or regional level policies affect household-level livelihood, food security, and nutrition. At the end, policy implications are presented to avert vulnerability, and promote livelihood and food security.

CHAPTER 2

THE COUNTRY AND THE RESEARCH AREA

This chapter presents the country profile and gives a description of the study area. The chapter starts with a brief overview of Bangladesh, including its physical setting, ecology and demography. Attention will be paid to changing patterns of food consumption and famines. The second part of the chapter provides a detailed description of the study area.

2.1 Country profile

2.1.1 The physical setting of Bangladesh

The area of Bangladesh is 144,000 sq. km. and extends 820 kilometers north to south, and 600 kilometers east to west. Bangladesh is situated between latitudes 20°34' and 26°38' N, and longitudes between 88°01' and 92°41' E. Bangladesh is bordered in the west, north and east by a 2,400 km. land frontier with India, and in the southeast, by a short land and water frontier (193 km.) with Myanmar, while in the south there is an irregular deltaic coastline (600 km.) on the Bay of Bengal.

Bangladesh is a deltaic country with a vast floodplain. With the exception of some mountains in the southeast, most of the country is a few feet above sea level. The country is located on one of the world's largest river deltas, created by the Ganges, the Brahmaputra, the Meghna and their tributaries. Three distinctive features characterize the topography of Bangladesh: a broad deltaic flood plain (80%), terrace areas (8%) and a small hilly region (12%). Flood Plains consists of three types: riverine flood plain - mainly along the three big rivers; tidal flood plain - formed under the influence of tidal alluvium and the fine Gangetic sediments; and estuarine flood plain - chars formed in the open estuary and built up by slow tidal sedimentation. The terrace areas of the Barind and the Madhupur tracts comprise 8% of the country. These terrace areas are elevated 10-20 feet above the surrounding flood plain (30-40 mean sea levels - MSL). Hill areas constitute 12% of the country. This includes the Northern and Eastern Hills and the Akhaura terrace. The Hills range from 500 to 3000 feet above MSL, while the Akhaura terrace is 10-20 feet above surrounding piedmont valley (40-50 MSL).

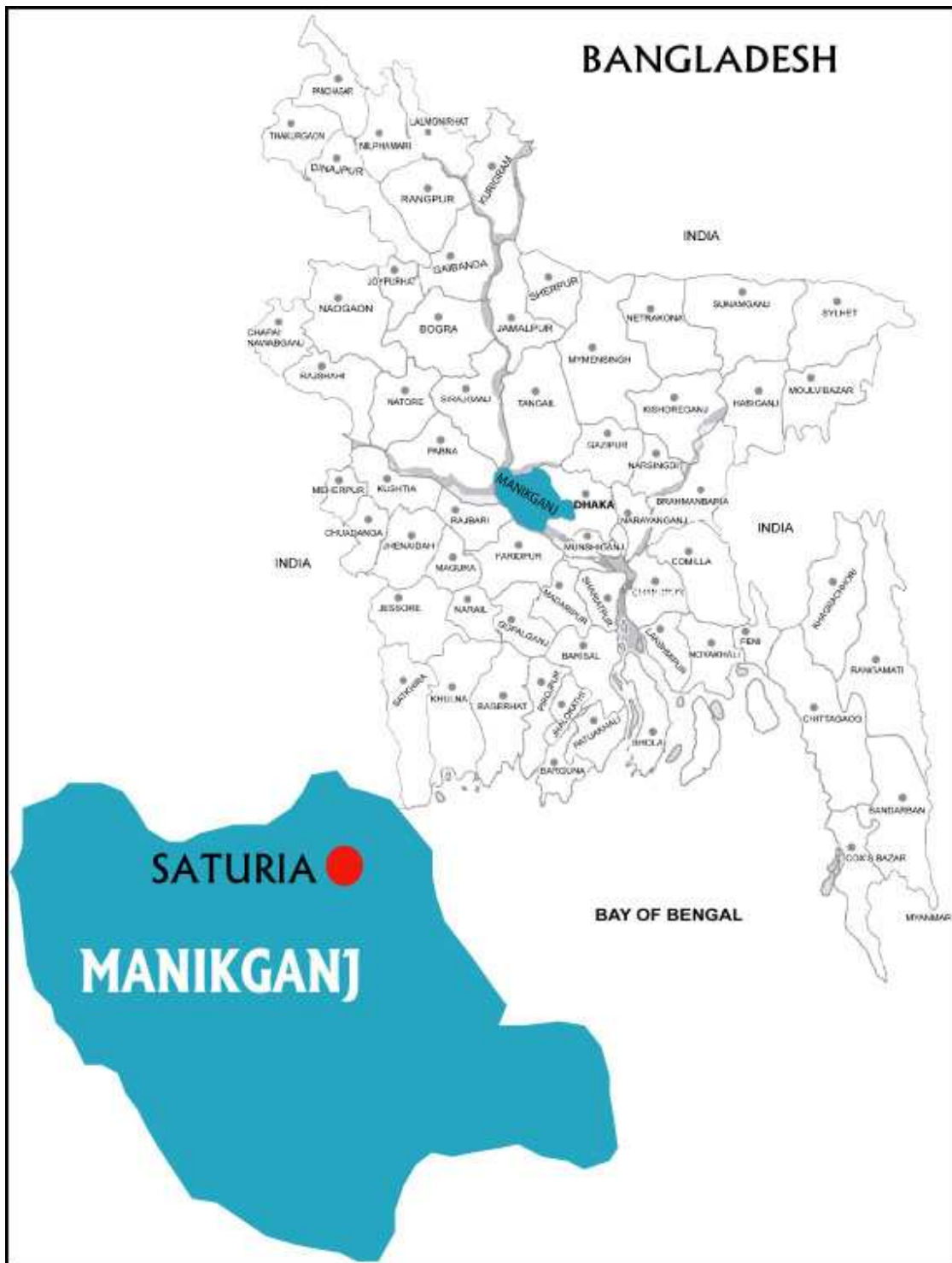
2.1.2 The ecology of Bangladesh

Meteorological conditions: Bangladesh is situated in a sub-tropical climatic zone. The climate over all of Bangladesh is more or less the same in respect to temperature, humidity and rainfall.

Temperature and humidity: Theoretically, Bangladesh has six seasons: summer, rainy monsoon, late rainy monsoon, autumn, winter and spring. Bangladesh has three main seasons: dry winter (November to February), with temperatures ranging between 10-29°C; hot and humid summer (March to mid-June), when temperatures can reach as high as 42°C; and wet and humid rainy monsoon (mid-June to October), with temperatures ranging between 29-32°C.

Rain exhibits considerable geographic variation within short distances, ranging from an annual average of 1200 mm in the west to more than 5000 mm in the east. There are three main sources of rainfall during the year: the western depression during winter; the early

Figure 2.1 Map of Bangladesh



summer thunderstorms known as the Nor'wester (derived from north-westerlies) and the summer rains from the southwest known as monsoons. About 15% of the annual rainfall occurs in the pre-monsoon season, 80% in the wet season during the monsoon period and only 5% during the winter months.

Rivers, wetlands and flood: Ten percent of the area of Bangladesh is always covered with water. Rivers, wetlands and floods are the lifeblood of Bangladesh. The whole country is laced and crisscrossed by 230 rivers and their tributaries. The five main rivers are the Padma (Ganges), the Jamuna, Brahmaputra, the Meghna, and the Karnaphuli. Only 8% of these rivers lie within the boundaries of Bangladesh. The recurrence of seasonal flooding and drainage are the most striking features of the country's hydrology. The heavy rainfall between July and September comes at a time when the major rivers bring large volumes of water and sediment from their upper courses at a rapid rate of flow which cannot be drained off. As a result, one-third of the country's area is seasonally inundated every year. Inundation is shallow in the northwest, east and south of the country while mainly deep in the center region. Bangladeshi rivers carry 28% of the world's river sedimentation. Annual deposition of an additional (approximately) 2 billion tons of rubble in the riverbeds causes a reduction of the rivers' depths (Ahmed, 1998). This causes the flood problem to be more pronounced with the successive years. Flooding sometimes causes enormous harm to crops and livelihood, but it helps renew fish stocks, ground water and soil. The rivers help balance erosion by forming new land through accretion. Wetlands include swamps, parts of the flood plains and estuaries. Wetlands help to retain flood water and replenish ground water. Wetlands have local, national and regional significance due to the conservation of biodiversity like flora and fauna and play a role as depositary of aquatic plants and animals.

Disasters – natural and man-made – are phenomenal in Bangladesh. Bangladesh is prone to natural disasters like floods, cyclones and droughts. The most devastating cyclones and floods of the world occur in Bangladesh. Persistent floods (during July to September), seasonal tropical cyclones (May to November), violent thunderstorms called Nor'westers (during March to May) and tornados (during March to October) often cause catastrophes. Man-made disasters due to indiscriminate use of chemical fertilizers and pesticides are causing land degradation, environmental pollution and health hazards. Frequent droughts and rising salinity in the northwest part of the country during the dry season caused by India's Farakka Barrage on the Ganges are other man-made disasters for Bangladesh, with the onset of desertification in the northwest as a consequence. Political turmoil also causes tremendous suffering to people, particularly the poor who are landless (60%) or possess little land. In recent years, arsenic poisoning in the groundwater is another threat.

2.1.3 Demographic and health profile

Demography

Bangladesh is a small country in southern Asia. According to the 2001 census, the population of Bangladesh in 2001 was about 123 million (BBS, 2004), while the World Bank (2004) put the figure at 133.3 million. Based on the latest census, the projected population in 2004 stands at 128.7 million, while according to UNFPA (2004) this figure should be 149.7 million. Bangladesh has the highest population density in the world with 1,040 people per square kilometer. The rural population comprised about 77% of the total population in 2001, compared to 85% in 1980. The rural population is almost evenly distributed throughout the 64 districts, except for the three districts that belong to the former Chittagong Hill Tracts

where population density is less than 100 people per sq. km. The eastern districts are slightly more densely populated than the western ones.

Bangladesh is experiencing a demographic transition. The proportion of the population below 15 years decreased from 44% in 1980 to 39% in 2001. The average household size declined from 6.1 in 1991 to 4.8 in 2001. The dependency ratio fell from 100.3 in 1980 to 70.1 in 2001. Life expectancy has risen from 49 years in 1980 to 61 years in 2001. The life expectancy of females is slightly higher than that of males: 61.8 and 61.0 respectively (UNFPA, 2004).

Family planning

The contraceptive prevalence rate is 54%, while 43% of the eligible couples currently use modern contraceptive methods. The total fertility rate (TFR) is still relatively high at 3.46, leading to an annual growth rate of 2%. At the current rate the population in Bangladesh will attain 254.6 million by the year 2050 (UNFPA, 2004). Age at marriage is increasing for both male and females. BBS (2004) shows that age at marriage for females rose from 16.8 years in 1981 to 20.4 years in 2001. However, UNFPA claims that still more than 50% of the girls marry and begin child-bearing under the age of twenty (UNFPA, 2004). The average household size declined from 6.1 in 1980 to 5.5 in 2001.

Table 2.1 Changes in demographic indicators 1980–2001 and status in 2004

Indicator	World Bank			BBS	UNFPA
	1980	1990	2001	2001	2004
Population (million)	85.4	110.0	133.3	123.1	149.7
Population density	593	764	926	834	1,040
Rural population (%)	85.1	80.2	74.4	76.6	76
Urban population	14.9	19.8	25.6	23.4	24
Growth rate (%)	2.5	2.4	1.7	1.4	2.0
Crude birth rate	44	33	28	18.9	-
Crude death rate	18	12	9	4.8	-
Total fertility rate (TFR)	6.1	4.1	3.1	3.1	3.46
Life expectancy at birth (years)	49	55	61	68.3	-
• Male	49	55	61	68.6	61.0
• Female	48	55	62	68.0	61.8
Population by age group (years)					
• 0-14	44.0	42.0	37.0	39.4	-
• 15-64	50.7	53.1	57.8	56.0	-
• 65 and above	5.3	4.9	5.2	4.6	-
Average household size	6.5	5.5	5.5	4.9	-
Contraceptive prevalence (%)	8.5	39.9	53.8	53.6	43
Mean age at marriage		BBS			
Male	23.9	25.1	-	27.8	-
Female	16.8	18.2	-	20.4	-

Sources: (BBS, 2004), UNFPA (2004), (WHO, 2003), World Bank (2002, 2003, 2004)

Religion, ethnicity and language

Bangladesh is a predominantly Muslim country but a secular state and is noted for the remarkable ethnic and cultural homogeneity of its population. Over 98% of its people are Bengalis; the remainder are Biharis (non-Bengali Muslims who migrated from India), and indigenous tribal peoples. The population is comprised of Muslims (87%), Hindus (11%) and

others, including Buddhist, Christians and tribal groups (2%). Bangla is the official language. English is also widely spoken and understood. Arabic is read and spoken for religious purposes. The tribal groups speak their own tribal languages, though the majority of them can speak Bangla as well.

Health and nutrition

Health is a major concern for the people of Bangladesh. Inadequate health facilities and inefficient health services cause immense suffering for the common people of Bangladesh. Upazila health complex (UHC) is the center of health facilities at the upazila level. One health outpost at the union level is not enough to ensure adequate health services. At present, more than 50% of the population receives less than 80% of the required calorie intake (Islam, 2002). Malnutrition is a major cause of childhood mortality and adult illness. However, the eradication of major epidemic diseases like smallpox, cholera and polio indicates an improvement of health conditions. The development of oral rehydration therapy (ORT) has dramatically reduced infant and child mortality during last two decades. Some health and nutrition indicators are presented in Table 2.2. The prevalence of anemia among women is 49%. This varies among different groups in the female population: 53% for pregnant women, 43% for adolescent girls and 78% among children aged 6-11 years. More than half of the children aged 6-60 months are undernourished and about 13% are severely malnourished (World Bank, 2004).

Table 2.2 Changes in health indicators 1980–2001 and status in 2004

Indicator	World Bank			BBS	UNFPA
	1980	1990	2001	2001	2004
Maternal mortality rate (MMR)	-	480	380	330	380
Infant mortality rate (IMR)	129	96	54	56	64
Under-5 mortality rate (CMR)	205	144	82	69.4	-
• Male	-	-	-	-	85
• Female	-	-	-	-	90
Undernourished people (% of total population)	-	35	32	-	-
Under-5 malnutrition	68	65.8	47.7	-	-
% births attended by skilled staff	-	-	12	-	12
Low birth weight (LBW)	-	50	30	-	-
Child immunization (%)					
Measles	1	65	76	-	-
(% of children under 12 m)					
DPT (% of children under 12 m)	1	69	83	-	-

Sources: (BBS, 2004), (UNDP, 2003), UNFPA (2004), (WHO, 2003), World Bank (2003)

Water and Sanitation

Bangladesh is a country where water is scarce during the winter, while it is abundant during floods. Safe drinking water is not available during floods, however. Use of tube well water for drinking and cooking purposes is universal (97%). In recent years, arsenic poisoning in the ground water overshadowed the success of universal tube well water use. The use of unsanitary latrines is also a serious threat to public health. The incidence of diarrhea is common throughout the year but the situation deteriorates during summer (March to May) and flood seasons (August to October) when it becomes much higher, coinciding with the two lean periods and nutritional stress. During the dry season, ground water levels fall in

many parts of Bangladesh as a result of the indiscriminate use of water for irrigation, causing shallow tube wells to run out of water. Thus, people must rely on other water sources (deep tube well, well, river, canal, pond, etc.).

Table 2.3 Changes in sanitation indicators 1980–2001 and status in 2004

Indicator	UNDP		BBS	UNFPA
	1990	2001	2001	2004
Access to safe water (%)	94	97	98	97
Improved sanitation (%)	41	48	42	-

Sources: BBS (2004), UNDP (2003), UNFPA (2004)

2.1.4 Education

Education is the backbone for the development of a country. In Bangladesh, the literacy rate has increased from 31.5% in 1980 to 40% in 2001. Girls' education was widely neglected in the past, but during the last 20 years the level of girls' education is increasing be it at a slow pace. The female literacy rate is still low at 31% (UNFPA, 2004). Now more girls (98%) than boys (97%) are enrolled in school as a result of the government's food-for-education program and NGO initiatives. The private sector is taking more initiatives to enroll the children at the primary level.

Table 2.4 Changes in education profile 1980–2001 and status in 2004

Indicator	World Bank			BBS	UNFPA
	1980	1990	2001	2001	2004
Adult literacy rate (%) (age 15 +)	31.5	34.2	40.0	41.1	-
• Male	40.0	44.3	49.4	62.0	50
• Female	17.2	23.7	30.2	31.4	31
Average years of schooling of adults	2.1	2.2	2.6	-	-
Primary enrollment rate	-	71	87	-	-
• Male	-	60.0	53.2	-	97
• Female	-	82.8	73.1	-	98
Children reaching grade 5 (%)	-	-	65	-	-
• Male	-	-	-	-	63
• Female	-	-	-	-	68
Secondary enrollment rate	-	19	44	-	-
• Male	-	-	-	-	45
• Female	-	-	-	-	49
Private sector enrollment share at primary level	11.0	15.2	38.7	-	-

Sources: BBS (2004), UNDP (2003), UNFPA (2004), World Bank (2003)

2.1.5 Political history and government (administrative structure)

Bangladesh became independent on December 16, 1971, after a bloody war against the Pakistani rulers, and at the cost of three millions lives and the virginity of some 250,000 women. Bangladesh was ruled by the Hindu kings until the 13th century. This was followed by

the rule of Muslim kings and the Moghul dynasty for about 250 years. The British colonized and ruled Bangladesh (then Bengal) for 200 years, then Pakistan for 24 years.

After independence, Bangladesh started its political journey with a multi-party parliamentary form of democracy. Democracy is one of the four principles of the state. Members of parliament (*Jatiya Shangshad*) are elected for a five-year term. The number of seats in the present parliament is 300 and it has been raised to 450, which will be implemented in the next parliament. The number of seats reserved for women varied over time, initially starting with ten seats, then 15, followed by 30 seats in 2001. In the present parliament, there are no reserved seats for women. There will be 50 seats reserved for women in the next parliament, and to be elected by the male members.

The history of democracy has not been smooth. In January, 1975, all political parties were banned and a one party system such as is found in socialist/communist countries was established. Martial law was proclaimed in August, 1975, and the army ruled the country directly or indirectly for more than 13 years. A presidential form of government was established during this time (1975-1990), and parliamentary democracy was restored in 1991. At present, more than 200 political parties are enlisted with the election commission. The country is governed through three wings of governance: the executive, legislative and judicial. The Prime Minister is the head of the government, while the President is the head of the state. Both the Prime Minister and the President are elected by the Parliament.

Bangladesh is divided into six divisions, 64 districts, 470 *upzilas*¹ (507 *thanas*²), 4,484 unions, 13,452 wards, and about 86,000 villages and hamlets. A dual system of administration governs the local and district level administration. Government civil servants

Table 2.5 Level and representation of administration

Level	Number	Government Administrator	People's representative
Division	6	Divisional Commissioner	-
District	64	District Commissioner	-
City Corporations	6	-	Mayor
Municipalities	254	-	Municipal chairman
<i>Upazila</i> ¹ (<i>thana</i>) ²	470 (507)	<i>Upazila Nirbahi Officer</i>	Member of the parliament ³
Union	4,484	-	Union <i>Parishad</i> (UP) chairman ⁴
Ward	13,452	-	Female UP member ⁵ Male UP member ⁶
Village	87,319	-	<i>Gram Sarkar</i> (GS) ⁷
Households	25,362,321	-	-

¹ Rural *thanas* are now called *upazila*.

² *Thana* means police station. *Thana/upazila* is the lowest administrative unit where the government officials are posted to run day-to-day administration.

³ In the present parliament, 300 members are elected - one member from each constituency. One constituency is comprised of one or more *upazilla/thana*. The number of *upazila/thana* depends on the population of the *upazilas/thanas*.

⁴ One UP chairman is elected from each union.

⁵ One female UP member is elected from each ward.

⁶ Nine UP members (men) are elected from each union

⁷ There is one *Gram Sarkar* - GS (village government) per village.

are the administrative head of the division (Divisional Commissioner), district (District Commissioner) and *upazila* levels (*Upazila Nirbahi Officer*, UNO), while at the union and village levels, elected people's representatives run the administration under direct supervision of the UNO. Table 2.5 presents the details of the administrative structures.

2.1.6 Socio-economic conditions

Economy

From the beginning of its history, Bangladesh has faced many challenges but nevertheless achieved significant progress in different fields of development. The poverty level was reduced from 37.7% in 1983/84 to 27.5% in 1993/94. Over the past twenty years the volume of GDP and the per capita income have increased nearly three times in spite of the devaluation of the taka, which has taken place on a regular basis. During this time, the share of agriculture as a percentage of the GDP decreased from 30.7% to 21.8%. The annual economic growth rate is just over 5% with a declining trend in the inflation rate. The poverty level is also decreasing but at a slower rate.

The country has made remarkable progress in the development of its infrastructure, especially in the development of paved roads. Most of the unions are well connected to the *upazilla* center and district headquarters through paved roads. The length of paved roads has tripled and mobile telephones have brought about a revolution in telecommunications. Land phone connections during this period have also increased by more than six times. Due to the construction of the Jamuna Bridge, the time to travel from the northern part of the country to the capital has been reduced by half and, as a result, trade has increased dramatically. Paved road length has increased by five times. During this period of twenty years, electricity production has increased by more than four times. Another area of achievement is the 6.5 fold increase in irrigated land area, which is crucial both for the stability and growth of agricultural production.

Indicators of social development (Tables 2.1-2.5) also reveal that steady progress has been made during this period in terms of education, family planning, health and nutrition, which has resulted in an increase of life expectancy and fertility decline.

Agriculture

Bangladesh has an agro-based economy with agriculture accounting for 22% of the country's GDP and employing 65% of its labor force (World Bank, 2000). The majority of rural people in Bangladesh depend on agriculture for their livelihood, though many do so indirectly through employment in small-scale rural enterprises, providing goods and services for farm families or in agro-based industries or trades. Seventy-five percent of the population in Bangladesh depends – directly or indirectly – on agriculture for its livelihood.

Agricultural performance has a major direct impact on important macro-economic objectives such as employment generation, poverty alleviation, human resource development, and food security. The country's GDP and inflation rate mostly depend on food production, with the nation's growing food requirements being at the center of political debate. Great success has been achieved in terms of increasing food grain (rice and wheat) production. Bangladesh has doubled its food grain production over the last two decades through large-scale adoption of modern rice varieties. Increasing pests and diseases are causing about 10-15% loss of rice yield. In addition, loss of food and cash crops due to frequent big floods (1987, 1988, 1998 and 2004) and other natural calamities seriously disrupts the total economy.

Land degradation, serious health hazards and degradation in aquatic and wildlife resources are caused by excessive use of chemical fertilizers, pesticides and lack of crop diversification (mono-cropping of rice). At the same time, mass extraction of ground water for irrigation over a long period of time is causing a reduction of ground water aquifer. These factors will create serious problems for the environment and agricultural production in the future.

Table 2.6 Changes in economic indicators, Bangladesh 1980 – 2001

Indicators	World Bank			BBS
	1983/84	1993/94	2002/03	2002/03
GDP (billion \$)	17.2	33.2	51.9	-
Share of agriculture (%)	30.7	26.3	21.8	21.7
Share of Industry (%)	21.9	23.8	26.3	26.6
• Share of manufacture	14.7	14.9	15.8	-
• Share of construction and exploitation of natural resources	7.2	8.9	10.5	-
Share of services (%)	47.4	49.9	52.0	51.7
GDP growth rate	-	3.8	5.1	5.33
Per capita income (US dollar)	138	230	400	389
Exchange rate (taka per dollar)	26.0	39.5	57.9	57.9
Average inflation rate	15.7	6.8	-	4.4
Rate of domestic savings	2.0	2.3	7.0	18.2
Total value of export (billion dollar)	0.90	2.91	7.38	5.29
Total value of import (million dollar)	2.52	4.52	10.29	7.55
Poverty level (percent population below 1,805 calories in take per capita)	37.7	27.5	-	-
Poverty Index	136	145	138	-
Infrastructure				
Paved roads (kilometers)	4,383	7,817	-	21,174
Telephone (number of main connections)	92.3	258.8	-	681.5
Mobile telephone ('000)	-	-	-	350
Electricity generating capacity (MW)	990	2,720	-	3,696
Irrigated land area (1,000 hectares)	1,612	3,324	-	6,700

Sources: Ahmed and Hagglade (2000), BBS (2004), World Bank (2003)

Land and inheritance

In Bangladesh, land is the rural poor's main asset. Land in the past was the main indicator for livelihood security and well being. Per capita landholding is very small and is further declining under continued population pressure. Land is no longer an important source of livelihood, but rural people still think about "land" as being the main basis for livelihood. Land is very intensively used and there is little crop diversification. As a result, the soil is losing fertility and quality. Livestock and poultry are treated as liquid assets and occupy a major role in risk management, as well as being a source of livelihood security. The number of landless is increasing. Nearly half of the households are "functionally landless", while about 35% of households possess less than a half-acre of agricultural land. Thus, households cannot be food secure from their own farm production.

The land ownership problem dates back to 1793, when the British ruler introduced the Zamindar system which led to absentee landlords of the urban areas taking over the control

of land in rural areas and Muslim farmers becoming almost landless. In 1936, the Jamindar system was abolished, but the land was mostly owned by the Hindus. Muslims were often reduced to the status of poor or landless peasants. After the partition of India, mass Hindu migration from East Bengal (Pakistan) to West Bengal (India) had the consequence of land being returned to the Muslim farmers. But the situation that persisted for over two hundred years still makes it difficult for the majority of farmers to own land. Today in Bangladesh land-ownership continues to be a main social problem. About 95% of court cases are due to land disputes, affecting a great number of people. Ownership of land, its possession and cultivation, has socio-political and economic implications. Thus, an approach to solving the problems relating to land ownership and use has to be comprehensive and multidimensional.

By Islamic law, women inherit half of what men receive from their fathers' property. This gives women the power to retain a claim on the fields cultivated by their brothers. By not exercising this claim, however, they do their brothers the important service of keeping the family lands in the patrilineal line. In this way, women ensure themselves of a warm welcome and a permanent place in their brothers' homes. The price of land has recently increased, so sisters are demanding their share. Rarely, they get their share in the form of land; rather, they get only a token amount of money. After getting money in return for land from their parents, the money is used by the husband or sons to buy land in their own names rather than in the women's names. Sometimes women receive land from their in-laws as part of their bride-price during or after marriage.

Land use pattern

Though Bangladesh is an agrarian country, agricultural productivity is low. Only one crop is grown in 36% of the net-cultivated areas; as many as three crops are grown per year in only 13% of these areas. The classification of land area is shown in Table 2.7 and Figure 2.2.

Table 2.7 Cropping pattern of agricultural land (area in acres)

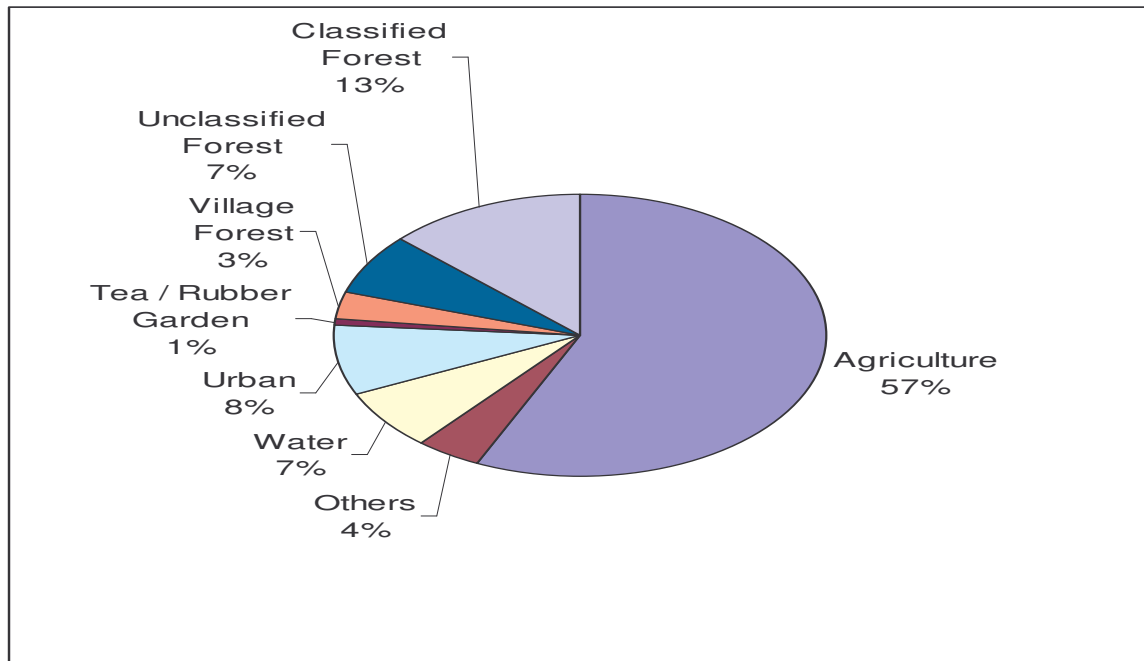
Cropping pattern	1991-92		2001-02	
	Million	Percentage	Million	Percentage
Cultivable waste	1.19	5.3	0.80	3.7
Current fallow	1.56	7.0	1.01	4.7
Single cropped	7.70	34.3	7.10	32.8
Double cropped	9.62	42.8	10.20	47.1
Triple cropped	2.39	10.6	2.53	11.7
Total land available for agriculture	22.46	100.0	21.64	100.0

Source: BBS (2004)

Fisheries

Bangladesh has a rich and diverse aquatic resource base. Ten percent of the country's area is always covered with water, while one-third of the country is flooded annually as a normal phenomenon. More than 300 species of fresh-water fish inhabit Bangladesh's wetlands (Nishat et al., 1993). Around 75% of the families are engaged in seasonal fishing in floodplains, canals and wetlands (DOF, 1989). The fisheries sub-sector contributes 10% to the agricultural GDP and 3% to total GDP. More than one million people are directly employed in fishing, which is also related to the country's culture and environment (Gain, 1998). Fish is second to rice as a source of food and each rural family eats fish 3.5 days per week. The 1990 nutritional survey in Bangladesh revealed that more than 80% of the animal protein in the diet comes from fish (Minkin et al., 1997).

Figure 2.2 Land area classifications



Source: FAO (2003)

Livestock

Recent statistics indicate that 22.3 million cattle/buffalos, 14.6 million sheep/goats, and 126.7 million poultry are kept in the country (BBS, 2004). In rural Bangladesh, livestock is found in the majority of households who are involved in farming. Cattle rearing in the past was part of farming, as land was plowed with cattle. Some 75 million tons of dung is produced annually and half of this is used as manure and the rest as fuel. A considerable share of cattle is imported from India to meet mass demand during Eid-ul-Adha festival. Most of the NGOs provide credit for cow/goat rearing and fattening. Recently, one of the government-owned banks also began providing collateral-free loans for goat rearing as part of a mass goat rearing program launched by the government. Lack of grazing facilities constrains the mass rearing of cattle and goats. Poultry rearing is also part of the rural way of living. Commercial poultry rearing boomed during the last decade. A sizable portion of animal protein intake in recent years has come from poultry. NGOs also provide one-day old chicks as part of their poultry rearing loan. However, with the introduction of foreign breeds of poultry, local breeds are under threat of extinction.

Forestry

Bangladesh is noted for its landscape and lush-green look. Total forest lands cover 23% of the country's surface area (Figure 2.3). Nature blessed Bangladesh with varied wildlife biodiversity, but much of it is now on the verge of extinction due to diminishing forest cover. Classified forest areas are mostly localized. Forest is present in the south (Sundarban), east (Sylhet and Mymensingh) and southeast (Chittagong Hill Tracts), and center (Modhupur and Bhawal forest in Dhaka and Mymensingh districts) of the country. The Sundarban mangrove forest, famous for the Bengal tiger, is under threat as mangrove trees are seriously affected by tip-dying disease. During the last two decades, a reforestation program has been undertaken along the coastline and on off-shore islands to reclaim land from the sea as well

as to protect the islands and the coast from tidal bores and waves during cyclones. In addition, a social forestry program was initiated for people living along roadsides and on fallow lands. NGOs play a vital role in reforestation programs along with government initiatives. The recent discovery of vast deposits of natural gas will prevent the destruction of more forest to some extent, decreasing the reliance on the wooded lands for cooking fuel.

Energy

Fifty-five percent of the total energy used comes from traditional fuels like tree leaves, branches, cow dung patties, etc. Natural gas is the main energy source for Bangladesh. Coal is also recently being extracted from mines to be used for the electric power plant that is currently under construction. The Kaptai generating plant in the Chittagong Hill Tracts is the only hydroelectric source of energy. Other than this, most of the electric power is generated from natural gas and oil. Still, 80% of the households is without electricity.

Industries

Bangladesh experienced the beginning of its industrialization after the formation of Pakistan in 1947, and based primarily on the processing of agricultural raw materials (jute, sugarcane, tea and subsequently forest-derived raw materials) and animal hides (leather). In the sixties, jute, textile, sugar, newsprint, leather and sugar industries were established. In the seventies, gas-based fertilizer and power plants, import-based chemical, cement, engineering, shipbuilding and oil-refinery industries were established.

The nationalization of all industries after Independence in 1971 greatly hampered the industrialization process, while the privatization of state-owned industries after 1978 gave a positive impulse to the process of industrialization. Bangladesh is still at the primary stages of industrialization, with the growth of the industrial sector being very slow. However, rapid growth has occurred in the export-oriented garment industries during the last two decades and the cement and frozen food (shrimp) industries during the last decade.

Industries are mainly concentrated in major urban areas, namely the capital Dhaka, the sea-port cities Chittagong and Khulna (Mongla), the inland port city Narayanganj, Bogra, and other divisional towns. There are about 30,000 industrial units – 24,000 small and cottage industries and 6,000 large and medium size industries. The share of manufacturing in GDP is currently around 16% (Table 2.6).

Migration

As in other parts of the world, migration contributes to the alleviation of rural poverty, especially where the possibilities for agricultural intensification are limited. Migration in Bangladesh occurs in three forms: seasonal, rural-urban and off-country (overseas). Seasonal migration is predominant among the poor and urban migration is predominant among all classes, while overseas migration is predominant among the lower to upper middle class people as it involves substantial amounts of money that the poor cannot afford. Mass seasonal migration occurs twice during harvesting seasons (April-May and October-November). Rural-urban migration has increased after independence. During the period 1970-1990, the urban population growth rate has gone up to 6.5% (Hugo, 1992). About one-third of the migrants migrate to Dhaka city, followed by Chittagong city and the Comilla urban area (Hossain, 2001). Migration is critical to the viability of rural people's livelihoods. Rapid urbanization of Bangladesh after Liberation created new problems in urban life through a huge increase in slum population (Afsar, 2002). About 2.5 million Bangladeshis have so far migrated overseas as laborers, most of them to Saudi Arabia, UAE and Malaysia. Almost all migrants are male. In recent years a few thousand females have been allowed to migrate.

Most of the Bangladeshis (1.2 million) migrated permanently to the USA and UK, followed by Italy, Japan and Canada. In 2003, remittances contributed more than a quarter (26.5%) to the foreign exchange earned by Bangladesh.

NGOs activities

Non-governmental organizations (NGOs) are now widely known in South Asia. More than a thousand registered NGOs are working at the grass roots level to alleviate poverty and bring about sustainable development. NGO programs cover all sectors of socio-economic development and are implemented all over Bangladesh in both rural and urban areas. However, most of the NGOs started working in rural areas, concentrating at first on men but later shifted towards women, and urban areas.

Prior to the independence of Bangladesh, the innovation of the so-called Comilla model of rural development in the late sixties was the pioneer in providing micro-finance (credit) to the poor. NGO activity started with relief work, with international NGOs and donors later shifting their focus to socio-economic development. Since then, Bangladesh has become a research ground for the donors for different models of rural development. New local NGOs surfaced over time and some of these became big enough to govern the different development policies. At the same time, the government also started a government-owned NGO (Bangladesh Rural Development Board, BRDB). The government eventually launched the Polli Karma Shahayak Foundation (PKSF) to assist local NGOs with funds. The government has provisioned funds in the annual budget to support local NGOs, and most of the commercial banks have recently extended their network to provide credit like NGOs.

The Grameen model of targeted group-based credit was initiated in 1976 and institutionalized through the establishment of the Grameen Bank in 1983. Micro-finance is now a part of most NGO programs in Bangladesh. NGOs running micro-credit programs are either similar to or modified versions of the Grameen model. Micro-finance programs have become hugely popular in Bangladesh (Huq, 2000). Now more than 70 million households are involved with NGOs. NGOs in Bangladesh have gained an international reputation for their community-based micro-finance programs, leading them to be recognized as the world leaders in micro-finance (Hussain, 2000).

NGOs became the heart of the rural economy as micro-finance lending has increased very rapidly due to its popularity (Huq, 2000). NGOs are feeding more than \$200 million annually to the rural economy through their credit and rural development programs. BRAC (Bangladesh Rural Advancement Committee), Proshika (Proshika Manabik Unnayan Kendra), ASA (Association for Social Advancement) and BRDB (Bangladesh Rural Development Board) are the four leading national NGOs working in Bangladesh. The Grameen Bank is also working as an NGO through initiatives in the field of micro-finance, health, fisheries, telephone, etc.

NGOs are also involved in direct sectoral development in the field of agriculture, fishery, poultry and livestock, social forestry and infrastructure development. NGOs in Bangladesh also provide different essential services such as primary health care, health, family planning and nutrition services, sanitation, arsenic awareness and mitigation, education, and vocational and skill training for the people, particularly the poor, bridging the gaps and deficiencies in state provided services. BRAC runs a bank, university, non-formal primary schools and community-based health clinics, nutrition program, dairy and printing industries, seed production and distribution, poultry and fish hatcheries, livestock development, relief distribution, etc. Like other NGOs, BRAC also works on environmental issues and solar

power promotion as well. Gonoshashthyo also runs a university, pharmaceuticals business and a hospital and clinics. Donor countries, international donor agencies, and the government of Bangladesh recognize the contribution of NGOs in Bangladesh to the overall economic and social development of the country. NGOs now actively participate in formulating national policies.

Although the main target of NGOs was primarily the poor, they have now extended their network to the ultra poor or the poorest segment of the population, including beggars. For the last decade, mid-level enterprises have also been getting support from the NGOs. Most NGOs have women as a target population. NGOs fight against social injustice and violence directed against women (including acid throwing), and work to provide legal support for securing women's rights to land, bride-price, dowry, etc. The main goal of the NGOs is to empower women through education, income and employment opportunities.

2.1.7 Social organization

Social norms and culture

Social cohesion at the family and community level is an important mechanism for mobilizing labor. In recent years, social cohesion seems to be eroding due to social, economic and political changes. Household nuclearization has limited the capacity of decision-makers to access and claim key resources such as land and labor. At the community-level, this breakdown has contributed to the erosion of the shared labor system (*shata* system).

Patrilineal ties currently dominate the ideology of family life, but in the past matrilineal ties were almost as important in practice. Married women provided especially important links between their husbands' brothers' families. Brothers and sisters often visited their brothers' household, which were in fact the households of their deceased fathers'. A family group residing in a homestead (*bari*) functions as the basic unit of economic endeavor, landholding, and social identity. In the eyes of rural people, the hearth (*chula*) defines the household - an extended family exploiting jointly held property and being fed from a jointly operated kitchen. While formerly a *bari* was usually one household, it currently consists of several households and may consist of one or more extended family households. Married sons generally live in their parents' household during the father's lifetime. Although sons usually build separate houses for their nuclear families, they remain under their fathers' authority and wives under the mothers-in-law's authority. The death of the father usually precipitates the separation of adult sons who form their own households. Such a split generally causes little change in the physical layout of the *bari*, however. Families at different stages of the family cycle display different configurations of household membership.

Gender issues

Bangladesh remains a male-dominated country. In the past, the situation of women was very bad and women were fully dominated in all spheres of life. All decisions regarding production are still made by men. In the past, even reproductive decisions were also made by men. Recently, through NGO activities, the women of Bangladesh are now more educated, economically active and empowered than in the past. Women now make reproductive decisions on a limited scale. Despite all efforts by NGOs and the government to empower women, there is still a lot to do. At present, there is a quota for women in government services, providing an opportunity to work in the army and police as well. NGOs are recruiting more women than men. More than one million young girls work in the garment and frozen-foods industries, while more women than men are being recruited in the export processing zones. Women are also recruited on a larger scale in other industries than

previously. Middle-aged women with children are also involved in the rural and urban labor markets but their wages are around half that of men.

The practice of purdah (the traditional seclusion of women) varies widely according to social milieu, but even in relatively sophisticated urban circles the core of the institution, the segregation of the sexes, persists. In traditional circles, full purdah requires the complete seclusion of women from the onset of puberty. Only male relatives or servants are allowed in the home and a woman has to treat in-laws (senior to her husband) with due respect. Outside the home, a woman may or may not practice purdah, which depends on her family background. As a result of the changing social context, sexual segregation is diminishing and women are rejecting full purdah even in the rural areas. In many rural areas, women go unveiled within the confines of the hamlet (*para*) or village, but put on a veil or outer garment for trips further away. Contact with men outside the immediate family is usually avoided. Urban women enjoy more physical freedom than their rural counterparts and have the opportunity to pursue a professional career. They move in a different social world than their husbands and often work in their professions in a specifically feminine milieu. With the introduction of the garment factories and other new industries, more women from the rural areas are migrating to the cities, leaving behind the old tradition of purdah that was imposed on them in the past. In the past, purdah was maintained by wearing outer garments and a veil that conceals the face. Purdah is currently practiced by outer garments and covering the head with a scarf, but keeping the face bare.

Marriage and dowry

Islam teaches that everyone should marry and reproduce. Marriage in Islam is compulsory like other religious duties such as daily prayer and annual fasting. In Bangladesh, the parents are responsible for the marriage of their children, especially daughters. In the absence of parents, elder brothers and sisters, uncles and grandparents (both paternal and maternal) have to take responsibility. Thus, when a girl is grown-up and reaches puberty, it becomes a concern for the parents to get her married well. A marriage is generally arranged between families of similar social standing. In all marriages there are extensive negotiations between the families of the bride and groom about financial arrangements such as jewelry, bride-price (*pon/mohor*) and dowry (*joutuk*). Family interests get priority during marriage negotiations, rather than the personal interests of the prospective spouses. Although parents select spouses for their children, men frequently exercise some influence regarding the choice of their bride. Middle to upper-middle class men from urban families sometimes negotiate their own marriages. In the past girls were never consulted before their marriage. Nowadays, middle to upper-middle class girls are asked for their choice, but girls from rural areas mostly do not have this privilege.

Marriage is a social issue in Bangladesh and the participation of kin is a must. Thus, both the bride's and the groom's families have to resolve disputes to ensure their kin's participation at the wedding. This is especially true for the bride's family. The age at marriage has gone up in recent years, although child marriage still exists. Continuation of women's education after marriage is increasing. In 2002, the mean age at marriage of males was 27.8 and 20.4 years for females (BBS, 2004). UNPFA claims that still more than half of the girls are getting married and starting child-bearing before the age of twenty (UNFPA, 2004).

According to Islamic law, the groom's family has to pledge the traditional payment known as bride-price. This payment comprises gifts and cash. Gifts come in the form of bridal garments and jewelry, which are usually given at the time of marriage. This money must be paid before marriage, but a wife never demands it once she is married. A bride's family would demand

bride-price in the event of divorce. Jewelry given by a bride's or groom's family is usually treated as the bride's personal asset. Sometimes, the bride gets land as part of the marriage contract instead of a bride-price. Traditionally, Hindu women do not get any share from their parents' property and so rich parents give their daughters gifts at the time of marriage as a dowry. This practice later spread among all Hindu casts. Since Independence, Muslims have increasingly adopted this dowry system. The government banned dowry in 1980 through legislation, but the custom is still prevalent. Now it has become a social problem, and even a poor girl's marriage requires at least 5,000 taka as dowry. NGOs and social organizations are working to discourage the practice through social awareness programs. In the past, marriage between kin was quite common and for those marriages a lower bride-price could be negotiated, but this is less common now.

Conflicts between two families linked in marriage often arise, despite prior negotiations. In this case, the bride's family takes the initiative to save the marriage because of their weaker position. The majority of conflicts are about the dowry payment. In many cases a bride's family pledges a dowry to be paid after marriage but fails to hand over the pledged money in time. The groom and his family may also demand a new dowry after marriage which the bride's family refuses to pay. The dowry issue leads to divorce in many cases, or desertion, physical assault and even beating to death. Close to one in five marriages in Bangladesh ends in divorce. Incomplete or lack of payment of a dowry is also cited as a reason for sending the bride back to her parental home (White, 1992).

2.1.8 Food production and famines in Bangladesh

The government of Bangladesh claimed self-sufficiency in food production in 1996, but Bangladesh still produces 10% less than required (NOVIB, 1996). The situation took a turn for the worse during the devastating flood of 1998, when about 70% of the country was inundated for a two and a half months (Chowdhury, 1998). Bangladesh survived without having a famine like the one in 1974, when another devastating flood covered two-thirds of the country. Although there was no widespread famine as a consequence of the 1996 flood, the issues of food and livelihood security are still critical concerns, as food insecurity is quite common among the people throughout the year. This intensifies during the two lean periods of March to April and September to October.

The people of Bangladesh have a long history of suffering from food insecurity. Food insecurity prior to British rule (1757-1947) seems to have been relatively unknown in the country. Bangladesh faced several famines during British rule. In 1770, the 13th year of British rule, the worst famine struck Bangladesh (then Bengal in British India) and one third of the population (around ten million) died. Another big famine struck Bengal in 1866. Uppal records that India faced 22 major famines between 1770 and 1900, and Bengal suffered most during these famines. In spite of famines, India was made to export more and more food grain to foreign markets. The food situation deteriorated over the years. During the first four decades of twentieth century, per capita food availability was reduced by a considerable proportion (Uppal, 1984). As a result, in 1943, i.e., only four years prior to the end of British rule, Bengal lost 1.5 million people in the most devastating famine of the twentieth century.

During Pakistani rule in the 1960s, food aid through the US government's (Public Law) PL-480 program helped to develop rural infrastructures as well as famine prevention through a food-for-work program. In 1974, three years after its independence from Pakistan, Bangladesh suffered its last major famine and the country lost another hundred thousand of its population. All these famines were due to a lack of access to food rather than food

shortage, aggravated by a lack of political will to overcome the problem of unsustainable livelihoods. Bangladesh faced two more famines in 1988 and 1998, but political will and NGO participation helped to overcome them successfully. Since 1979, the World Food Program (WFP) and bilateral donors provide food through vulnerable group feeding (VGF), which later became the vulnerable group development (VGD) program. The WFP also provides wheat to food-for-work programs like the PL-480 initiative did. Food assisted programs are presented in chronological order in Table 2.8.

Table 2.8 Chronology of food assisted programs

Name of Program	Nature and target	Year of initiation
PL-480 (no longer in existence)	Provides food for construction of roads, dams, etc.	1960
Food-for-Work (FFW)	Provides food for construction of roads, dams, etc.	1974
Rural Maintenance Program (RMP)	Provides food for maintenance of rural roads	1978
Vulnerable Group Feeding (VGF) program	Provides food for vulnerable households (especially after the floods of 1988, 1998 and 2004)	1979
Vulnerable Group Development (VGD)	Provides food for vulnerable households (especially destitute women)	1985
Food-for-Education (FFE)	Provides food to school children	1999

Bangladesh has now almost achieved self-sufficiency in cereal production (90%) (Novib, 1996). The production of many non-cereal food crops has remained stagnant or has decreased during the past decades, which has caused a substantial decline in nutrition and an increase of dietary imbalance. The population of Bangladesh is suffering badly from deficiencies of nutrients like protein, fat, vitamins and minerals, causing various nutritional disorders and diseases.

Among foods that constitute a balanced diet, vegetables are the most easily produced and affordable types of food in Bangladesh. Vegetables are the most important source of minerals and vitamins. Current per capita vegetable consumption is approximately 60 grams in contrast to the recommended 200 grams. Bangladesh produces about 3 million metric tons (mt.) of vegetables compared to the annual requirement estimated at about 12 million mt. (Rahman, 1994). Hence, there is a big gap between what is required and what is available in the country, a difference which is increasing. Increased production and consumption of vegetables could alleviate the deficiencies of nutrients and nutritional standards. The climate and soil are generally favorable for the production of vegetables throughout Bangladesh. However, yield and acreage of vegetables are very low. In recent years, an improved variety of vegetables with high yield have been introduced in all parts of Bangladesh through NGOs, government agencies (BADC, Agriculture Extension Department), and private companies.

Self-sufficiency in food production and the role of BRRI

The Bangladesh Rice Research Institute (BRRI) is credited for implementing the Bangladesh green revolution. BRRI was established in 1970 and was affiliated with the International Rice Research Institute (IRRI) in the Philippines. In its initial stage it was used to introduce IRRI rice varieties to the country. Since 1979, BRRI has developed into a full-grown independent institute for rice research and has produced some 35 varieties of rice.

BRRI has been a success story in terms of Bangladesh attaining food self-sufficiency in rice. The Bangladesh Agricultural Development Corporation (BADC) helps BRRI in bringing its results to the field through extension programs. However, the activity of this organization is now on the verge of collapse because of the government's decision to close it as a result of donor pressure. BADC was involved in the distribution of seeds and fertilizer and provided irrigation support. Recent WTO regulations on subsidizing production may have an adverse effect on the production of rice in Bangladesh in the coming years. Recently, hybrid rice seed has been imported from China and India and introduced by different private and non-government organizations. BRRI has introduced locally developed hybrid rice and is working to extend its cultivation within a year or two.

2.2 Description of the study area

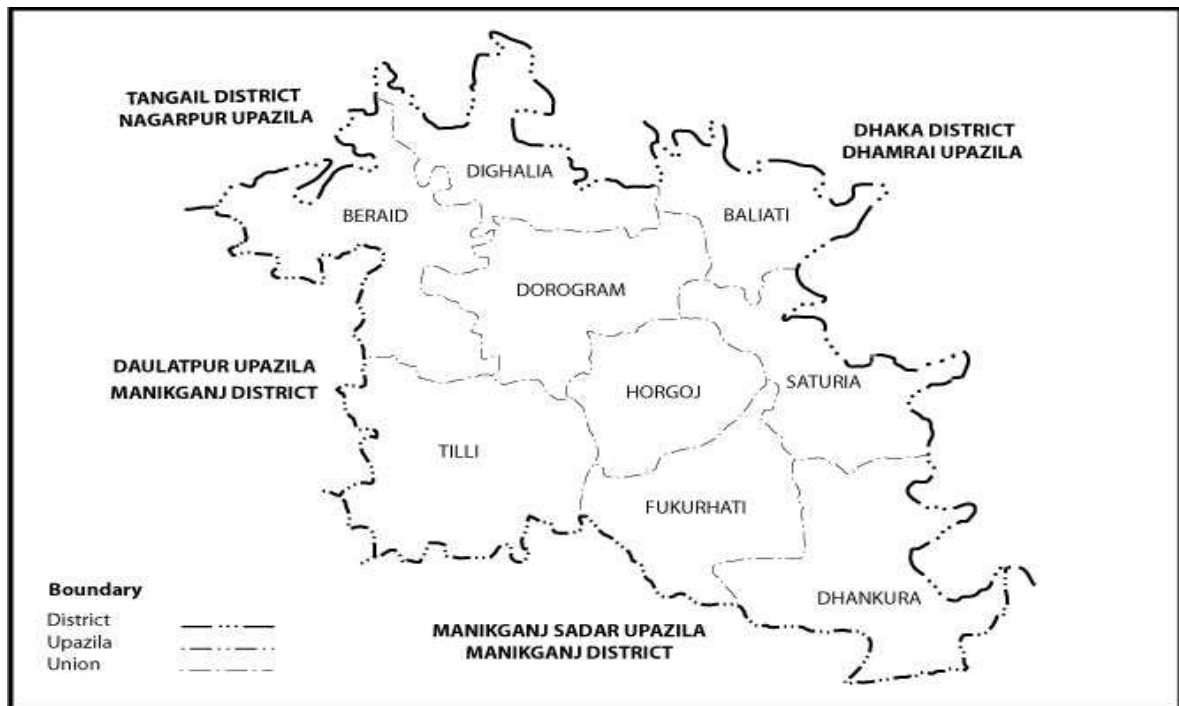
IFPRI conducted their survey in five *upazilas* in four districts during 1996-97 (pre-flood period or Phase 1). During 1999-2000 (post-flood period or Phase 2), only Saturia *upazila* under Manikganj district was selected. Saturia *upazila* has been selected for this research, as both rounds of data are available only for this area.

2.2.1 Location and infrastructure

Manikganj district lies about 64 kilometers to the northwest of Dhaka. Its rural areas are located in the vicinity of the fast main road to the capital (Dhaka-Aricha highway). Saturia *upazila* is adjacent to Dhaka district. Saturia is a small *upazila* with an area of 140 sq. km. and a population of nearly 175,000 people (1250 people per sq. km.). The main road connecting Dhaka to Manikganj (via the Dhaka-Aricha highway) is southwest of Saturia, the *upazila* headquarters is in a relatively remote place. Saturia *upazila* is surrounded by Dhaka district to the south, east and northeast, Tangail district to the north and to the west, and other *upazilas* of Manikganj district lie to the north- and southwest. The Dhaleshwari river runs on the western part of Saturia, while the Gazikhali canal (*khal*) runs through the *upazila* headquarters. Previously, both the river and canal were navigable all through the year, but currently these are navigable only in the flood season. The Jamuna runs on the west side of Saturia. Due to the presence of the Jamuna river, a major part of Saturia *upazila* is inundated every year for four to five months (June-October).

Saturia *upazila* was difficult to reach before 1989. Road links were developed immediately after a tornado hit the area in 1989. I started my public health career in BRAC through a study initiated by Saturia in May, 1991. At that time, direct bus communication between Manikganj district headquarters and Saturia *upazila* was not available. The rickshaw was the only means of transport. During my fieldwork, bus transport between Manikganj district headquarters and Saturia *upazila* was disrupted during the flood season as three bridges were damaged during the 1998 flood and have yet to be re-installed. Bus communication between Dhaka and Saturia is available only during the day. At present, all eleven unions are well connected to the *upazila* headquarters by paved roads. Most of the villages can be accessed through earthen roads, though a few villages remain difficult to reach.

Figure 2.3 Map of the study area (Saturia upazila)



2.2.2 Socio-economic conditions

Land and agriculture

About 40% of the households in the study area are landless, 39% of the households possess less than half an acre of land and around 11.3% of the households own land between one-half to one acre. Only 9% of the households possess more than an acre of land. This makes it difficult for the households to attain food security from their own farm production. Despite poor land holding, the people of Saturia depend on agriculture - directly or indirectly - to maintain their livelihood. The Government of Bangladesh and the World Food Program have listed Saturia as a highly food-deficient area (WFP, 1997; BBS, 2004).

People mostly cultivate BRRI-rice. IRRI rice was introduced in the early 1980s, but only during the past thirteen years has BRRI-rice been adopted all over the *upazila*. This was possible because of the introduction of groundwater irrigation. Before, people had to rely on rainwater for their cultivation. The soil consists of sandy clay, which increases the cost of the irrigation. Prior to the introduction of BRRI-rice, people had to rely on indigenous low-yield varieties. Hybrid rice has recently been introduced in the area like in other parts of Bangladesh. Deep-water rice is also grown, traditionally during the flood season.

Three crops can be produced on some high lands, but only two crops are produced annually on most of the other land. People cultivate BR29 and BR3 varieties from January-April, while BR11 is cultivated from September-December. People also grow winter crops like mustard, lentils, onion, wheat, and tobacco. Vegetable cultivation has become popular among farmers over the last seven years. In recent years, hybrid rice and maize which can be cultivated year round have been introduced to the area. The seasonal calendar of major crops is presented in Annex IV.

Food production and consumption

Saturia is labeled by the government of Bangladesh (GoB) and World Food Program (WFP) as a highly food-deficient *upazila* (WFP, 1997; BBS, 2004). There was a severe food shortage in the area prior to the introduction of BRRI rice. Landless people could have meals of rice only once or twice a week. Most of the time, an entire family could have two meals per day at maximum production (but not necessarily rice), and sometimes they had to go hungry. Other food crops included sweet potato, potato, cereals like sorghum (*job*), millet (*paira*), blackgram, etc.

Vegetable cultivation was confined to the homestead area in the past. Commercial vegetable production has been introduced in the last decade. This has become popular and vegetable production is increasing. As Saturia is near to the capital Dhaka, most of the produce is transported to Dhaka. Commercial poultry production was introduced after the 1998 floods and the activity is growing faster than vegetables, though NGOs like BRAC have been promoting a hybrid variety of poultry since 1985.

Fish production has decreased over the years. In the past, the main source of fish was open-water fishing during the flood season. However, yields from open-water fishing are now diminishing due to the large-scale use of fertilizer and pesticides. Ponds were not very common, except for a few villages in the eastern part of the area. In recent years, pond fish aquaculture is widely practiced. Fish caught in and around the Saturia *upazila* used to be exported to the other parts of the *upazila*. At present, most of the fish available in the local markets comes from outside despite the local aquaculture.

Upazila rice production in the past was not enough to meet the demands of the people so they relied on cheap food crops like sweet potato, potato, other cereals like sorghum, millet, black bean, etc. This came out in the focus group discussions, where women said:

In the past we mixed kolai dal [blackgram] and potato with the rice to increase the volume to fill our stomach. We used chili [green or ripen] as a substitute for vegetables. Besides, we also ate lots of sweet potato.

Assets

Land is the main asset of the people of the study area. In former days land was the main indicator for livelihood and well-being. In recent years the situation is changing, but people still see land as the main basis of livelihood security. Currently, people also invest in building nice houses, preferably a brick-built one. Trade now offers an alternative source of livelihood. Liquid assets like livestock and poultry still occupy a major role in risk management as well in livelihood security. One landless participant in the men's focus group discussion commented:

Whatever we do, our main target is to save money and buy land. If we can produce our food then we feel secure. That's why we used to go for dawa [seasonal contract harvesting]. We bring our share of rice home but don't sell this. When we have food in our home we feel food secure.

Rural Industries

In and around Saturia *upazila*, numerous industries (steel industries, brick-fields, tobacco, textile, garment industries, NGO-based cottage activities, etc.) have been established during the last decade. This has offered the people of the study area a rural-based livelihood option by combining home-based work in these industries with work in agriculture.

Rural and peri-urban commerce

Thanks to improved communication with Dhaka and Manikganj, Saturia district headquarter workers have been able to build rural livelihoods around commerce. In recent years, commercial vegetable cultivation and poultry industries have grown rapidly. This allows a few households to be involved in trading vegetables to Dhaka. Additionally, milk and milk products are supplied to Dhaka through Milk Vita, Aarong Milk, and other private companies. It is a good example of rural and peri-urban commerce. Around 30% of the milk and milk products are supplied from Manikganj district to Dhaka, where Saturia plays a key role. NGOs provide credit to enable people to get involved in trading.

Migration

Migration in the study area occurs in three forms: seasonal, urban and overseas migration. Seasonal migration is predominant among the poor, urban migration is predominant among all classes, while overseas migration is predominant among the middle to upper-middle class people as it involves huge amounts of money that poor people cannot afford. The survey showed that at least one member from one-third of the households migrates to Dhaka for harvesting. Those involved in seasonal migration collect paddy to contribute to household food security. Members from a few households work at Savar, Dhaka and other cities. A few household heads work in Dhaka or Manikganj, leaving their families behind. The people of the study area avoid migration because they want to live in a calmer, cleaner environment closer to kin, relatives and community. They are ready to accept the conditions of rural life despite less income opportunities. One key informant commented:

I used to work in Manikganj and travel everyday from my home. It is costly. Those who work in Dhaka don't take their family with them because of the cost of living. Rather, they are back at home during weekend and look after the family. If any person has to work in Chittagong or Khulna then sometimes they take their family with them but still they try to keep their family at the village as the cost of living is high elsewhere and they face the problem of maintaining their family.

Overseas migration is increasing. Members from around 5% of the households work as unskilled or skilled laborers in countries like Saudi Arabia, Malaysia, Singapore, Korea, etc. The migrant laborers are working overseas for periods from one to fifteen years. Most new migrants are related to those who migrated earlier (chain migration). The remittances sent by the migrants are used to repay their loans, to maintain their family, buy livestock and land, and build houses. One key informant commented on overseas migration:

It became a dream of the young people to go overseas. They see this as a very attractive opportunity and an easy way to become rich within a short period. They see those who are going overseas are buying lands and building new houses so this becomes an obsession among the young men. They are selling all of their assets and trying to go overseas. Many people are losing their money and become vulnerable. In one case, twenty families became vulnerable after being cheated by the agent. This is a known example of failing to go. But this is very common – many persons are being cheated regularly. These young people can find work in their own country and change their fate but they don't.

2.2.3 Household composition

Household size, age and sex composition of the members

The average household size in the study area is 4.6 people. A majority of the households (69%) has 4-6 members and only a few households (3%) have a large joint family. Only 33% of the population is under 15 years and under-fives constitute only 12% of the population. The elderly comprise only 3% of the population. The dependency ratio is only 57.6, which is far below the national average (80.0). About 48.8% of the population is female (Table 2.9).

Table 2.9 Household size, age and sex composition

Variables	Frequency	Percentage
Number of members		
• 2-3	61	20.3
• 4-6	207	69.0
• 7-9	24	8.0
• >10	8	2.7
Total households	300	100.0
Average household size	4.6	-
Age group		
• 0-4	166	12.0
• 5-14	294	21.0
• 15-64	877	64.0
• >65	45	3.0
Sex		
• Male	708	51.2
• Female	674	48.8
Total population	1382	100.0

Characteristics of the household heads

The majority of household heads are aged between 30 to 49 years. Only 2.7% are female headed households and half of them are widows. About 48% of the household heads are illiterate and only 1% is a university graduate (Table 2.10).

2.2.4 Education

There are 80 primary schools, one kindergarten, 12 high schools, two colleges, three government and thirteen traditional *madrashas* present in Satoria upazila. NGOs like BRAC and Proshika are running about 500 non-formal primary schools in the upazila. Around 15,000 children (70% girls) study in these non-formal schools. NGO intervention has increased girls' education in the area. Additionally, government programs like food for education also increased the girl's education to a great extent. NGO school books and other materials are supplied free of cost to the students and the government also provides books in the primary schools free of cost.

Table 2.10 Age, sex and marital status of household head

Variables	Frequency	Percentage
Age group		
• 20-24	8	2.7
• 25-29	33	11.0
• 30-39	108	36.0
• 40-49	104	34.7
• 50-59	36	12.0
• 60-64	7	2.3
• ≥65	4	1.3
Sex		
• Male	292	97.3
• Female	8	2.7
Marital status		
• Married	296	98.7
• Widow	4	1.3
Total	300	100.0
Education		
No education	157	52.3
Primary	52	17.3
Secondary	52	17.3
SSC/HHC	35	11.7
Graduate	4	1.3
Total	300	100.0

About 51% of the household members aged 15 years and above are literate. The male literacy rate is 58% compared to 44% among females. Primary school enrollment among children aged 6-15 years is 86%. Still, more boys (89.5%) than girls (82.4%) are enrolled. Secondary school enrollment among children aged 12-15 years is 43.3%. At this level, more girls (45.8%) are enrolled compared to boys (41.7%) (Table 2.11).

Table 2.11 Educational background of the household members

Variables	Male		Female		All	
	No.	%	No.	%	No.	%
Education level (15 years +)						
No education	183	42.1	243	56.0	426	49.0
Primary	88	20.2	88	20.3	176	20.3
Secondary	141	32.4	99	22.8	240	27.6
SSC/HHC	16	3.7	3	0.7	19	2.2
Graduate	7	1.6	1	0.2	8	0.9
Total	435	100.0	434	100.0	869	100.0
Primary school enrollment (6-15 years)	145	89.5	112	82.4	257	86.2
Total	162	100.0	136	100.0	298	100.0
Secondary school enrollment (12-15 years)	35	41.7	27	45.8	62	43.4
Total	84	100.0	59	100.0	143	100.0

Table 2.12 Disease patterns during the past one year and four years prior to that

Diseases	Male		Female		All	
	No.	%	No.	%	No.	%
During the past one year						
Fever	100	48.8	71	42.3	171	45.8
Skin/Eye/ENT ¹ diseases	31	15.1	32	19.0	63	16.9
Gastrointestinal diseases	19	9.3	18	10.7	37	9.9
Kidney problem/UTI ²	14	6.8	8	4.8	22	6.0
Respiratory diseases	13	6.3	8	4.8	21	5.6
Pain/aches	8	3.9	7	4.2	15	4.0
Accident/surgery	8	3.9	6	3.6	14	3.8
Hypertension/heart diseases	6	2.9	8	4.8	14	3.7
Others	6	2.9	10	5.9	16	4.3
Total	205	99.9	168	100.1	373	100.0
Between 1-5 years ago						
Fever	30	24.3	21	17.8	51	21.2
Gastrointestinal diseases	21	17.1	21	17.8	42	17.4
Hypertension/heart diseases	16	13.0	20	16.9	36	14.9
Accident/surgery	13	10.6	12	10.2	25	10.4
Kidney problem/UTI ¹	13	10.6	7	5.9	20	8.3
Pain/aches	8	6.5	9	7.6	17	7.1
Respiratory diseases	12	9.7	5	4.2	17	7.1
Skin/Eye/ENT ² diseases	4	3.3	11	9.3	15	6.2
Others	6	4.9	12	10.2	18	7.5
Total	123	100.0	118	99.9	241	100.1

¹ Ear nose and throat² Urinary tract infection

2.2.5 Health and family planning

Health

The Upazila health complex (UHC) is the base of the health care facilities throughout the upazila. Four to six doctors are posted in each UHC. All UHCs serve as a mini hospital at the *upazila* level. All family planning activities are also regulated from the UHCs. There is one Union Welfare center (FWC) in each union and one doctor and a Family Welfare Visitor (FWV) are posted in each center. There are six to nine Family Welfare Assistants (FWA) under each FWV, depending on the size of the union. FWAs are assigned to deliver contraceptives either free-of-cost or on payment (depends on method) at the household level. FWVs visit the satellite clinics to support family planning programs and provide common disease treatments to children under five years at the village level. They also provide the same services at the FWCs.

Table 2.12 indicates that males and females experience similar types of illness. The difference in illness patterns is not significant. Fever was the most widely experienced illness during both the past year and the four years prior to that. During the past year, skin/eye/ENT and gastrointestinal diseases and kidney problems/UTI ranked next after fever, while during the past 1-5 year period this was true of gastrointestinal, hypertension/heart diseases, accident and surgery cases.

Table 2.13 Health-seeking behavior by gender during the past year and the four years prior to that*

Health care sought for	Male		Female		All	
	No.	%	No.	%	No.	%
During the past one year						
Within last year	14	7.2	21	13.3	35	9.9
Traditional ¹						
Homeopath	11	5.7	9	5.7	20	5.7
Allopath						
• Para-professional and unqualified ²	118	60.8	75	47.5	193	54.8
• General physician	39	20.1	50	31.6	89	25.3
• Specialist/consultant	26	13.4	19	12.0	45	12.8
• Total patients	194	100.0	158	100.0	352	100.0
Between 1-5 years ago						
Traditional	19	17.4	17	16.3	36	16.7
Homeopath	2	1.8	5	4.8	7	3.2
Allopath						
• Para-professional and unqualified	21	18.9	19	18.3	40	18.6
• General physician	45	40.5	38	36.5	83	38.6
• Specialist/consultant	38	34.2	41	39.4	79	36.7
Total patients	111	100.0	104	100.0	215	100.0

* Multiple answers considered

¹ Ayurvedic, *hekimi*, herbalists, faith-healers, etc.

² Trained village doctors, medical assistants, BRAC community health worker, have some sort of medical formal training, medicine shop owners with some orientation.

Health-seeking behavior depends on the type of illness and varies among men and women. The popularity of allopathic treatments increased, while that of traditional healers decreased. People usually visit traditional healers at the onset of an illness or sometimes they are preferred as the last option as well, when general physicians or specialists are unable to treat the ailment, e.g. in the case of paralysis. For allopathic treatment, both male and females choose a para-professional or unqualified allopath, followed by a general physician or a specialist. The cost incurred for traditional healers are negligible. Sometimes they don't even charge any fee, especially for paralysis treatment. During the past year, females sought treatment from traditional healers more than males, which was almost the same rate during the last 1-5 years period (Table 2.13). Twenty children died in the surveyed households in the last five years, nine boys and eleven girls (Table 2.14).

Table 2.14 Under-five child mortality by age in months

Age (in months)	Male		Female		All	
	No.	%	No.	%	No.	%
Less than 1	3	33.3	4	36.4	7	14.0
1-11	5	55.6	5	45.4	10	50.0
12-60	1	11.1	2	18.2	3	30.0
Total	9	100.0	11	100.0	20	100.0

Table 2.15 Contraceptive prevalence and use, and reasons for non-use

Contraceptive prevalence	Frequency	Percentage
Any method	220	66.9
Modern methods	198	60.2
Non-user	109	33.1
Total eligible couples	329	100.0
Modern methods		
Pill	109	55.1
Condom	25	12.6
Injection	32	16.2
IUD	2	1.0
Norplant	2	1.0
Ligation	28	14.1
Total eligible couples	198	100.0
If not: Reasons for not using		
Widow/separated	1	0.9
Pregnant	14	12.8
Want to have a baby	40	36.7
Husband staying abroad or sick	12	11.0
Have small baby	21	19.3
Side effects/headache	14	12.8
Physical problem/doctor asked to discontinue	4	3.7
All ready past child bearing age	3	2.8
Total non-using eligible couples	109	100.0

Family planning

At present, 60.2% of the eligible couples use modern contraceptives. The pill is the most widely used method followed by injection, tubectomy, and condoms. About 35% of the couples using pills consider switching to injection or another method in the future. Among non-users, 16.8% follow traditional methods, 30.5% are trying to get pregnant, 10.6% are pregnant, and another 10.6% stopped because of problems encountered (Table 2.15). About 93% of the women seek permission from their husband or in-laws for using contraception, while 7% of the women took the decision on their own and did not bother to seek permission from their husband. In the past, women had to seek permission from the mother-in-law in addition to the husband. The couples either collected contraceptives from the government family welfare assistants (55.1%) or bought them from the shop (51%) (Table 2.16).

Table 2.16 Sources of contraceptives

Sources of contraceptives	Frequency	Percentage*
Government Family Welfare Assistant (FWA)	122	61.6
Bought from the shop	101	51.0
Upazila Health Complex (UHC)	3	1.5
BRAC health worker	2	1.0
Government hospital	1	0.5
Total	198	100.0

* Multiple answers considered

2.2.6 Water and sanitation

Water

The use of tube well water for drinking and cooking purposes is almost universal (99%), although only about 72% of the households own a tube well. A few households use well water. Sometimes pond water is used for cleaning utensils. Around 84% of the tube wells are within a 30-meter range of households (Table 2.17). The arsenic problem is present in the study area like in rest of the country, but not seriously. Sixteen households (7%) have a tube well contaminated with arsenic. Eleven of them do not use the arsenic contaminated water, while five households still use it in spite of the risks because they had problems obtaining water from the neighbors.

Table 2.17 Arsenic contamination and use of contaminated water

Color of the tube well mouth	Total frequency	Total percent
Red (contaminated with arsenic)	16	7.4
Green (arsenic free)	199	91.7
Color erased but free from arsenic contamination	2	0.9
Total	217	100.0

Sanitation

Sanitation in the study area is relatively good. More than half (54.4%) of the households own a sanitary latrine, while, despite their awareness, about 11.6% of the households own a very unhygienic latrine due to their poor economic status (Table 2.18). Safe hand-washing with soap or ash is not commonly practiced.

Table 2.18 Type of sanitation and hand-washing practices

Variables	Total frequency	Total percent
Type of sanitation		
Sanitary latrine	32	10.7
Slab latrine	131	43.7
Pit latrine	102	34.0
Open latrine	35	11.6
Hand-washing practice soap or ash		
More than half of the time	48	16.0
Less than half of the time	43	14.0
Rarely	116	39.0
Don't use soap	93	31.0
Total	300	100.0

Gender in water and sanitation

Fetching water from a tube well for different purposes is solely a women's job. Men seldom do this (Table 2.19). Sweeping the household premises and garbage disposal are also considered the women's responsibility; men (husband and sons) rarely perform these jobs (Table 2.20).

Table 2.19 Fetching water from tuber well*

Person involved	Cooking		Washing utensils		Washing of clothes		Bathing	
	No.	%	No.	%	No.	%	No.	%
Wife	86	29.0	75	25.0	49	16.0	31	10.0
Daughter	18	6.0	15	5.0	8	3.0	4	1.2
Husband's mother	3	1.0	1	0.3	2	0.7	-	-
Son's wife	3	1.0	1	0.3	1	0.3	1	0.3
Grandson's wife	1	0.3	1	0.3	-	-	-	-
Husband	2	0.7	1	0.3	1	0.3	3	1.0
Son	3	1.0	3	1.0	1	0.3	3	1.0
Servant (male)	1	0.3	1	0.3	1	0.3	1	0.3
Total	300		300		300		300	

* Multiple answers considered

Table 2.20 Cleaning of household premises*

Person involved	Sweeping		Cleaning cow dung		Cleaning other stools	
	No.	%	No.	%	No.	%
Wife	290	97.0	178	59.0	244	81.0
Daughter	57	19.0	23	8.0	15	5.0
Husband's mother	22	7.0	16	5.0	12	4.0
Son's wife	25	8.0	18	6.0	17	6.0
Grandson's wife	12	4.0	6	2.0	9	3.0
Husband	3	1.0	8	3.0	3	1.0
Son	-	-	1	0.3	-	-
Servant (male)	6	2.0	6	2.0	3	1.0
Total	300		300		300	

* Multiple answers considered

2.2.7 Social structure and community life

Village life: Social norms and culture

In each village there is a community (*sama*), headed by a community leader (*matbar*), that is embedded in local culture. Social norms and culture across the study area are quite homogenous. The role of the community was very important in the past, but with the introduction of the union council (*parishad*) and village government (*gram-sarkar*) the importance of the community is diminishing. In the past, villagers used to celebrate Eid festivals (Eid-ul-Fitar and Eid-ul-Adha) together under the guidance of the community leader but that practice has now almost disappeared.

Social cohesion at the household (family) and community level is an important mechanism for mobilizing labor. However, social cohesion seems to have become less. In the past, a community-level labor exchange (*shata*) system was very common in the area but nowadays it is almost non-existent. One of the key informants said:

Before it was very easy to find a neighbor for work through labor exchange but over time this system has eroded. At present you hardly find it. Only the elderly people still follow this system because of they cling to tradition. Nowadays we have to hire a laborer during farming season, before we shared our labor. Due to the absence of exchange labor, the cost of farming has increased.

Kinship versus neighborhoodship

The majority of households in most of the hamlets are related by kinship. This situation is still very common in old hamlets but is no longer found in newly developed hamlets. Traditionally, kin are the closest but neighbors are seen as almost equally important nowadays. This is a debatable issue. One group of people thinks that kinship is more important than neighborhood, but in my study I got conflicting impressions. In general, people find kinship to be more important than neighborhood, but in some cases I found that when a household is very poor it is the neighbors who support it more than kin. The people try to maintain good relations with their neighbors. In the survey, two thirds of the respondents are of the opinion that kin and relatives are more helpful than neighbors. Among those who think that neighbors are more important was a person who borrowed an amount of money as high as 85,000 taka from a neighbor. The people have different attitudes about sources of assistance for different purposes. Usually they prefer the kin of the husband's side, but neighbors are also considered. Details of assistance-seeking behavior are presented in Table 2.21. In cases of food borrowing, the households prefer neighbors after the husband's family because the wife's family usually lives further away.

Marriage and dowry

During British rule or even in the early period of Pakistan rule, Hindus were dominant in the study area, the majority of whom migrated after the partition of India in 1947. At present, Muslims are the dominant group. Polygamy is still in existence but not as common as in the past. In the past, child marriage was very common but currently it is rare. Like in other parts of the country, dowry is a social problem in the study area. Previously, the groom's family had to offer a bride-price, so the parents preferred a bride from relatives because they had to pay a lower bride-price for her. Marriage between relatives was once quite common, but has become less common (9%) in recent years (Table 2.22). This practice has changed because of the dowry system, as it is difficult to bargain with relatives about dowry. Even after the liberation of Bangladesh the dowry system was very rare among Muslims but it is becoming more/widely prevalent.

Only about 3% of the husbands in the study area live at the wife's parental house (Table 2.23). The place of residence after marriage determines social status and the husband's socio-economic condition. Thus, a husband residing with the wife's family indicates that the economic condition of the wife's father is better, giving the wife more power over household decision making and control over resources, or that the husband feels more comfortable staying with his wife's family. The about 4% of households staying at somebody else's place reflect a weak economic position of the households concerned, because the husband or the wife's father does not have land to provide residence for their children.

Purdah

In the study area, the practice of purdah (the traditional seclusion of women) is not as strictly adhered to as in other parts of Bangladesh. Women remain unveiled within the confines of the hamlet or village but put on the veil or a long scarf for trips away from home. The traditional veil is almost absent, being replaced with a long scarf. The use of a scarf is regarded as dignifying and a form of purdah as well. BRAC has been working in the study area since 1984 and many other NGOs later followed. Women enjoy more liberty as a result of long-standing NGO activities. Due to opportunities to work in the industries around the Satoria *upazila* and in Dhaka, young girls leave their parental homes to join in the workforce, and put purdah behind them.

Table 2.21 Assistance-seeking behavior

Person(s) approached for assistance	Type of assistance needed									
	Emergency		Medical treatment		Borrowing money		Borrowing food		Advice	
	No.	%	No.	%	No.	%	No.	%	No.	%
Nobody	13	4.3	35	11.7	24	8.0	253	84.3	92	30.7
Family of the husband	156	52.0	151	50.3	141	47.0	23	7.7	146	48.7
Father/mother	14	4.7	14	4.7	13	4.3	5	1.7	24	8.0
Brother/ brother's wife	77	25.7	70	23.3	61	20.3	12	4.0	61	20.3
Sister/sister's husband	11	3.7	12	4.0	19	6.3	2	0.7	8	2.7
Cousin	27	9.0	23	7.7	26	8.7	2	0.7	17	5.7
Uncle	21	7.0	25	8.3	19	6.3	2	0.7	33	11.0
Other	6	2.0	7	2.3	3	1.0	-	-	3	1.0
Family of the wife	59	19.7	56	18.7	77	25.7	6	2.0	37	12.3
Father/mother	26	8.7	27	9.0	29	9.7	4	1.3	19	6.3
Brother/ brother's wife	17	5.7	13	4.3	24	8.0	-	-	11	3.7
Sister/sister's husband	10	3.3	6	2.0	13	4.3	-	-	1	0.3
Cousin	2	0.7	3	1.0	5	1.7	-	-	2	0.7
Uncle	3	1.0	5	1.7	3	1.0	1	0.3	3	1.0
Other	1	0.3	2	0.7	3	1.0	-	-	1	0.3
Son/daughter (in-law)	4	1.3	6	2.0	9	3.0	-	-	3	1.0
Neighbours	68	22.7	52	17.3	47	15.7	18	6.0	21	7.0
Friends	-	-	-	-	2	0.7	-	-	1	0.3
Total	300	100.0	300	100.0	300	100.0	300	100.0	300	100.0

Table 2.22 Kinship relations between household heads and wife

Kinship relation	Frequency	Percentage
No relation	273	91.0
Distant relation	10	3.3
Mother's brother's daughter	5	1.7
Mother's sister's daughter	5	1.7
Father's sister's daughter	4	1.3
Sister's husband's sister	2	.7
Father's brother's daughter	1	.3
Total	300	100.0

Table 2.23 Place of residence after marriage

Place of residence	Frequency	Percentage
At husband's parental house	247	82.3
At wife's parental house	9	3.0
Own house	32	10.7
At other's house	12	4.0
Total	300	100.0

2.2.8 Social change and development

NGOs activities and involvement

All the leading national NGOs are active in Manikganj district, including Saturaia *upazila*. We found the four main NGOs BRAC (Bangladesh Rural Advancement Committee), Proshika (Proshika Manab Unnayan Kendro), ASA (Association for Social Advancement), BRDB (Bangladesh Rural Development Board) to be active in the study area. The Grameen Bank is also working in the study area. Local NGOs like Gono Kallayan Trust (GKT), Swadesh Manab Unnayan Shangstha, Association for Local Advancement, Manab Kallayan Shangstha (MAKS), etc. are also working there. Most of the NGOs have a microfinance program in the study area. GKT are mainly involved in vegetable and poultry production and assist by providing vegetable seeds and one-day old chicks to their members. The other two local NGOs run microfinance programs in a few villages and keep a low profile.

Table 2.24 Current involvement of households with NGOs

NGO involvement	Frequency	Percentage
ASA	70	33.0
BRAC	53	25.0
Grameen Bank	44	20.8
Gono Kallayan Trust (GKT)	34	16.0
Independent village-based organization (<i>shamity</i>)	28	13.2
Proshika	21	9.9
Bureau Tangail	15	7.1
BRDB	6	2.8
Swadesh Manab Unnayan Shangstha	5	3.4
Association for Local Advancement	2	0.9
Islami Bank ¹	1	0.5
Milk Vita ²	1	0.5
Total	212	100.0

¹ Commercial bank providing credit under especial rural development program

² Co-operative for milk producers

BRAC has active programs in micro-finance, micro enterprise lending assistance (MELA), health, education, social development program including paralegal (support), seeds (vegetable, paddy, maize, etc.), poultry, fisheries, sericulture and program for ultra poor. Proshika is active in microfinance, education, legal support, etc. Grameen Bank (GB), ASA and BRDB mainly provide microfinance programs.

Of the 300 households in the study, 212 (70.7%) are involved with a NGO, are a member of either ASA (33%), BRAC (25%), Grameen Bank (20.8%) and GKT (16%). The reasons for non-involvement with NGOs include: do not feel the urge to be involved with NGOs, unable to repay installments, distance of local village organization, etc. (Table 2.25). Changing NGO membership is a common phenomenon. A total of 116 (38.7%) households have left at least one of the NGOs in the past. Among these, most (27.6%) of the households left GKT, followed by those who left BRAC (25.9%) and Proshika (24.1%). The reasons why households left the NGOs include: unable to repay installments, unable to get a loan, dissolution of village organization (VO) by the NGO, etc. (Table 2.26). Only 74 households were never involved with any NGOs. Among 226 households who were involved with NGOs either in the past or at present, 31.0% drew loans from BRAC, followed by ASA (30.5%), Grameen Bank and GKT (23.9% each) (Table 2.27). Twenty-six (8.7%) of the households with NGO membership never took any loan. The reasons cited for not drawing loans were: not liking to borrow for fear of inability to pay installments. Besides providing credit, NGOs provide relief in times of disasters like tornadoes and floods.

Table 2.25 Reasons for non-involvement with NGOs

Reasons for non-involvement	Frequency	Percentage
Do not feel the urge to be involved	25	28.4
Unable to repay installments	23	26.1
Local village organization is at a distant place	16	18.2
Dislike of NGOs	12	13.6
Left NGO	4	4.5
Discharged from NGO	4	4.5
Unable to continue saving	2	2.3
Fear about interest rate	1	1.1
Can't be a member of NGO	1	1.1
Total	88	100.0

Table 2.26 Reasons for leaving NGOs

Reasons for leaving NGOs*	Frequency	Percentage
Unable to repay installments	34	29.3
Did not provide loan	33	28.4
Dissolved village organization	17	14.7
Local village organization is at a distant place	12	10.3
Discharged from NGO	7	6.0
Dislike of NGOs	5	4.3
Unable to continue saving	5	4.3
Don't feel like joining NGOs	2	17.2
Can't be a member of NGOs	1	0.9
Charge high interest rate	1	0.9
Total	116	100.0

* Multiple answers considered

Table 2.27 NGOs from which loans were taken

NGOs*	Frequency	Percentage
BRAC	70	31.0
ASA	69	30.5
Grameen Bank	54	23.9
GKT	54	23.9
Proshika	38	16.8
Village-based own organization (<i>shamity</i>)	19	8.4
Bureau Tangail	10	4.4
BRDB	9	4.0
Swadesh Manab Unnayan Sangstha	2	0.9
Islami Bank	1	0.4
Association for Local Advancement	1	0.4
Total	226	100.0

* Multiple answers considered

Social change illustrated

The character of society in the study area changed in the late 1950s from a Hindu-dominated society to a Muslim-dominated one. This brought about other socio-cultural changes, although the influence of Hindu culture is still visible. Unlike in other parts of the country, the culture in the study area is less conservative, although the purdah system was very much in existence in the past. As recently as the 1960s, Muslim women were not allowed to bathe during the day but had to take their baths in the evening. Even in the 1990s, before the introduction of NGO activities, women remained confined to homesteads. When NGOs started their work it was difficult for them to get women involved in their network. One of the key informants commented on this as follows:

Before, women were barred from going out of the homesteads. When NGOs started their work the scenario changed. The women who were NGO members are so enthusiastic about the NGO officers that if the women heard the sound of a motorcycle they left their house even when they were serving food to their husbands. The women used to say that 'sir' has come to visit me so I must give him time. So husbands were irritated at the NGO officers in the early days and the men resisted NGOs. Now the husbands have become acquainted with this so they do not mind any more. Now NGOs have become a part of our life.

However, women see the late President Ziaur Rahman as the one who initiated the process of unveiling women. In the focus group discussions a woman said:

Late President Zia brought women out of their homes during the canal excavation program. Then women worked on the Union parishad road constructions. Later on BRAC and other NGOs came and formed village organizations with us. At first there was serious resistance from the men but now they have accepted the reality. Now we don't have any problem in participating in meetings.

In the past people could only borrow from moneylenders by using collateral. Many people lost their property because of this borrowing, so people became very careful. They were afraid to take out loans. One of the participants said:

In the past, people were very nervous to borrow even 20 taka but now they don't even think twice about borrowing 20,000 taka. Credit became a part of culture. Now people cannot think of doing anything without taking credit.

The women in the focus group discussions expressed their concern about NGO credit. The women said:

Many men do not like their wives, daughters and in-laws to be a member of the NGOs, but it is them who insist that we take the credit. We take the loan and hand it over to our husband or sons. They use the loans but we have to face the NGO worker's words when we cannot pay the installments. That's why the NGOs now take a signature from our husbands or sons as a witness. Before they took advantage over us but now they also have to share the responsibilities.

A woman previously had to live with her in-laws, but at present it is not obligatory. In the changing social context most of the families are of the nuclear type. In the past, mothers-in-law dominated daughters-in-law, but at present it is the other way around. Women in the focus groups expressed their concern in the following words:

When we were new brides we were dictated by our mother-in-laws. We were afraid of our mother-in-laws and could not do anything without their permission. Even we were not allowed to take food and even not allowed to entertain our parents without their permission. But time has changed now - our daughters-in-law dictate us. Now we are afraid of our daughters-in-law. Our daughters-in-law are the boss of the house.

The opportunity for young girls to work in garment factories and export processing during the last decade has brought a revolution to society. Sometimes girls do not even bother to leave home without their fathers' consent. One woman in the focus group reported:

My daughter has gone to work at Savar, Dhaka in the export processing zone. Her father did not allow her but she fled away. I supported her in doing so. She likes that job, so why should we restrain her. Her father denied accepting her earnings. So she is depositing her earnings in the bank. Now my husband accepts her working there and says she must save money for her marriage.

With the introduction of overseas migration it became a dream of every young man to migrate to a foreign country while young girls want migrate to urban areas. Off-country migration has both positive and negative sides. Only a few households have improved their economic status through remittances, but many households become vulnerable by losing their money to fraudulent agents.

CHAPTER 3

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

This chapter presents a review of the literature as well as the definitions of the concepts used. A conceptual framework is presented at the end of the chapter based upon existing literature, in which both a gender perspective and a temporal perspective are applied.

3.1 Research problem

Studies conducted elsewhere suggest that livelihood and food security strategies can become trapped in a vicious cycle of poverty. The main inputs needed by the livelihood system to attain livelihood or food security are resources and assets, which poor people lack. Resource constraints are more likely to cause the poor to be concentrated on the most degraded and fragile land with a risky environment, making their livelihoods the most vulnerable. It is necessary to have a clear understanding about livelihood strategies of the rural people as they develop over time for designing interventions and policies.

To address livelihood systems, we have to look into the matter of how rural people generate and maintain their livelihoods. If we want to understand livelihood systems closely from the people's perspective, then we have to know the dynamics of the rural livelihood system and the strategies that are deployed. There will be different types of livelihood strategies in different situations. People develop their livelihood strategies according to the situation they face. They use their assets, such as livestock or savings, and they use social capital, i.e. their kinship and social relations, to handle or overcome critical situations. It is crucial to understand the patterns of livelihood and food security and vulnerability and problems associated with these issues and how livelihood strategies develop over the time. This study addresses livelihood and food security and vulnerability as well as the use of social capital as a risk mitigation device as developing over time and its effect on livelihood and food security.

The research problem can thus be formulated as follows:

The aim of this research is to investigate the determinants of livelihood and food security as well as vulnerability and the use of social capital as a risk mitigation device as developing over time and its effect on livelihood and food security.

The following research questions were formulated based on the research problem:

1. How do rural households achieve, maintain or enhance their livelihood and food security?
2. How do they compose their livelihood portfolios in order to survive?
3. How does livelihood status affect food security, food consumption and nutrition adequacy?
4. How does the gender factor affect livelihood strategies and household-level decision-making?
5. How do rural households cope with risks and shocks like illness, famine, flood, drought or lean periods of the year?
6. How do livelihood strategies change over time in the context of ecological, demographic, cultural and socio-political changes?
7. How do changes in livelihood security impact food security and nutrition adequacy?
8. What is the role of social capital in decreasing livelihood vulnerability?

The conceptual framework used for the research will be presented in this chapter. A conceptual framework consists of several concepts that are linked to each other and specifies the relations between them. The conceptual framework has been developed through the modification or extension of existing theoretical frameworks for livelihood analysis, specifically those by Ellis (2000) and Niehof and Price (2001). The conceptual framework was developed on the basis of these sources and other literature. In order to be able to answer the research questions and structure the research, a model was developed based on the conceptual framework, which will be presented in Section 3.3.

3.2 Discussion and definition of key concepts

The major concepts used in this research are: household, food security, nutrition adequacy, livelihood security, vulnerability, household livelihood strategy, decision-making, risk, social capital, gender and temporal perspective. The concepts are discussed and defined below.

3.2.1 Household

The household is a common form of social organization and is part of the social and economic environment. It is seen as an agent in social activities and livelihood generation. The household acts as a buffer for all the members against individual vulnerability and is a key to the security of its members when external resources deteriorate, redistributing income and other resources (Moser, 1996). The household is an arena of cooperation as well as conflict (Sen, 1990). In economic research, the household tends to be treated as a black box and a unit of consumption rather than production. In sociological research the household is seen as a social unit with complex dynamics (Mogey and Bachmann, 1986). In gender research the household is also seen as a context of gender inequality, especially in intra-household resource distribution (Sen, 1990; Agarwal, 1991).

Households are not static entities but restructure over time due to internal and external factors. Internal factors include: birth, death, marriage, marital conflicts such as separation, divorce or abandonment, and the need for child care and care for the elderly. Niehof and Pennartz (1999) refer to this as the household life course. External factors include: housing problems, lack of income, education and health care opportunities and security. Small nuclear households can be merged into larger extended ones in times of crisis. Similarly, large extended households can break down into smaller nuclear households to avoid conflict, or when children marry out and start a household of their own. Households also restructure as a result of or in order to avert vulnerability (Moser, 1996)

Many definitions and descriptions of household from different social scientists have been put forward looking at it from different angles. Examples are:

“Households are the basic unit of human social organization. To a large extent, they represent the arena of everyday life for the vast majority of the world’s people” (Clay and Schwarzweller, 1991: 11).

“Household and family provide the crucial linkage between the individual and society as a whole, the point of linkage between the activities of individuals (agency) and the levels of institutional and social structure with which the individual interacts” (Rudolph, 1992: 100).

“A ‘household’ refers to the collective identity of a group of individuals unified by commonly held endowments and one or more of the following: a common budget arising from greater or lesser degrees of income pooling, common cooking quarters, and/or a common residence” (Bryceson, 1980: 5).

A household is “a co-residential unit, usually family based in some way, which takes care of resource management and the primary needs of its members” (Rudie, 1995: 228).

The Bangladesh Bureau of Statistics defines the household as “an individual or a group of people living in a physical/census unit or part thereof who make common provision for food and other essentials of living” (BBS, 1995). In this research we will use Rudie’s definition as a working definition because of its emphasis on joint resource management for primary needs. The definition used by BBS was also consulted to check it against the definition of Rudie.

Family

Sometimes household is taken to be synonymous with family. This is also a matter of perspective. In the developed world the term “family” is widely used and usually refers to the nuclear family, whereas in the developing world “household” is used rather than family because of the ambiguous meaning of the term family (Chant, 1997). The concept of family and household are often treated as interchangeable, but they are not (Jelin, 1991; Marsh and Arber, 1992). Rudie (1995) sees family as a dimension of household, Whatmore (1997) sees household as one of the components of family, while the household to Niehof (1999) is the socio-economic unit that organizes livelihood.

Kinship

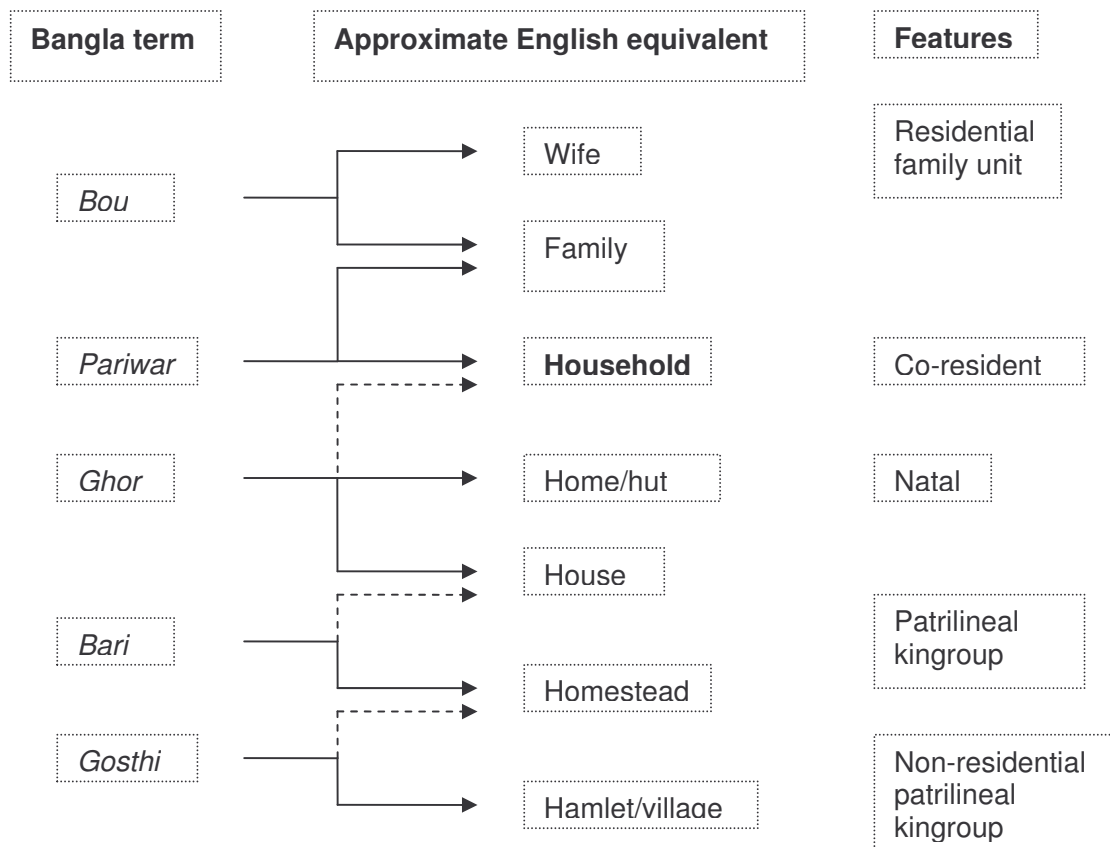
Most households consist of kin (affinal, consanguineal, or both) but unrelated household members may also be included, sometimes as fictive kin through adoption or cultural practice (Brydon and Chant, 1993). Furthermore, there may be lodgers, servants, farm workers and so on, who are considered members of the household. Sometimes households may not be visible entities in terms of buildings or sets of rooms within residential units, but can be identified only in terms of specific functions such as cooking or the pooling of finances (Niehof, 1985). In the past in Bangladesh, households were of the extended-family type, but at present there is a process of nuclearization going on due to rapid socio-economic change together with declining family values.

Bangladeshi society is based on patrilineal kinship. Kinship norms restrict the sale of land outside the kingroup (*gosthi*) as long as a member of the group can offer the market price. Households from one kingroup tend to cluster in one or more hamlets of a village. Kinship regulates the access of households to common resource properties, land and credit, and provides social security. For a married woman, her husband’s kinship group is her “circle” (Chen, 1990). In the past, women seldom claimed their inherited land, preferring to give it to their brothers (Cain et al., 1979; De la Briere et al., 2003). At present, women are offered a token amount of money in return for their share. Patrilineal kinship systems offer a woman security and support at different stages of her life, especially after divorce or desertion by the husband or even after the death of the husband (Chen, 1990).

House or homestead

A household in Bangladesh is usually a part of a house (*bari*) or homestead. A homestead can consist of four to five huts (*ghors*) in a single courtyard. The residents of a homestead can be divided into households living in separate huts, belonging to the same patrilineal family and including affinal relatives (Chen, 1990). In the past, due to presence of the extended family, a homestead was treated as a household. However, the disintegration of households into nuclear families over time has lead households to be considered as a part of homesteads. Sons currently separate their kitchens from the household within few years after marriage and form a new household in the same homestead.

Figure 3.1 Bangla terminologies and the concept of “household”



Adapted after Gittleson (1989)

In Bangladesh, at least three terms (*bou*, *pariwar* and *ghor*) are used to refer to household and family. *Bari* refers to the homestead, house or compound, which may be comprised of four to five huts (*ghors*), each consisting of a household or family unit. *Gosthi* refers to the non-residential patrilineal kin group living in a hamlet or village.

Headship

The household can be the focal point of analysis in different disciplines. In economic research, a household is seen as a single unit under the headship of the household head, assuming that all individuals share and follow the same preferences (Quisumbing and Maluccio, 2003). In the census and surveys a respected household member who controls the day-to-day activities of the household is designated as the “head”. All the members of the household are linked with the “head” and he is the point of reference (Bruce and Lloyd, 1997). In Bangladeshi culture the oldest male person usually controls the household and is seen as the household head (Abdullah and Zeidenstein, 1982).

In a male-headed household one or more adult women are present, while in a female-headed household means no adult men are present (Bruce and Lloyd, 1997). A female-headed household may be either de “jure” or “de facto”. In “de jure” female-headed households a female person is the main bread winner and legally owns the household resources. These women are usually widowed, abandoned or divorced. This is not the case

in “de facto” female-headed households, which may or may not be as vulnerable as these households may be economically better-off than other households if their husbands are migrant workers who send home remittances. However, the economic activities of “de facto” female household heads are more often constrained by their lack of access to resources (land) that are still formally owned by their husbands (Firebaugh, 1994; Niehof, 2004). The female-headed households are often more cohesive due to the absence of adult male members (Dwyer and Bruce, 1988). Internal resource distribution in female-headed households is more child-oriented than male-headed households (Bruce and Lloyd, 1997). In sub-Saharan Africa, children in female-headed households have higher school-enrollment and a higher education completion rate compared to male-headed households (Lloyd and Blanc, 1996), and similar comparisons in Guatemala show a higher nutritional status in children from female-headed households (Engle, 1991). Mtshali (2002) observed that female-headed households tend to have more opportunities to diversify their livelihood portfolios.

Rudie’s definition of household was used as a working definition in this research because of its emphasis on joint resource management for primary needs. Following Anderson et al. (1994), we see the household as having some emergent properties – rules of accommodation or coordination, for instance – which cannot be reduced to the properties of individual members. However, the choices of individual members, their interactions and joint decisions, made either through compromise, imposition or mutual agreement, are also included in this analysis. Inter-household dynamics and their effects on the decisions of households are considered as well.

3.2.2 Food security

The issue of food security emerged in the global debate as early as 1970 through international food conferences in Rome. Before 1970, as early as 1950, the goal was to achieve food self-reliance on a global scale. The issue of food security was first addressed in these terms during the World Food Conference in Rome in 1970 (RAWOO, 1986). Food security in the 1970s was considered to be an issue of national and world food supplies. The 1974 World Food Conference considered the primary issue to be a lack of food, while in the mid-1980s issues of entitlement were also considered after Sen’s (1981) theory on food entitlement. In the late 1980s, the issues of both availability and stable access to food were also incorporated in the definition (Frankenberger and McCaston, 2001). Today, entitlement is regarded as a leading concept. In the Bangladesh context food security is a relatively new concept which surfaced after Bangladesh was declared food self-sufficient in 1996 (Islam, 1999). Quite a few definitions of food security are presented in the literature by different scientists and organizations. Hoddinott (1999) reported about 200 definitions and 450 indicators of food security. Maxwell (1996) listed some 32 definitions from 1975 to 1991, a selection of which is presented in box 3.1 to show how dimensions of food security have changed over time.

Maxwell and Frankenberger presented another definition of food security in 1992, defining it as access by all people at all times to the food needed for an active and healthy life. If we substitute “all people” by households, then the definition of household food security becomes: access by households at all times to enough food for an active and healthy life of the household members.

Access is a key word, of which Sen (1981) has convincingly demonstrated the importance for food security. In doing so, he brought the concept of entitlement to the fore. Entitlements guarantee access to resources and benefits. By adding ‘for an active

and healthy life', the definition implies that food security is not only a matter of quantity (enough food) but also of quality (Niehof, 1999: 107).

Box 3.1 Selected definitions of food security and insecurity, 1975-1991

1. "Availability at all times of adequate world supplies of basic food-stuffs..., to sustain a steady expansion of food consumption... and to offset fluctuations in production and prices" (1975, UN).
2. "Everyone has enough to eat at any time – enough for life, health and growth of the young, and for productive effort" (1981, Kracht).
3. "Freedom from food deprivation for all of the world's people all of the time" (1982, Reutlinger).
4. "Ensuring that all people at all times have both physical and economic access to the basic food they need" (1983, FAO).
5. "A basket of food, nutritionally adequate, culturally acceptable, procured in keeping with human dignity and enduring over time" (1985, Oshaug in Eide et al., 1985).
6. "Access to all people at all times to enough food for an active, healthy life" (1985, Reutlinger).
7. "Access to all people at all times to enough food for an active, healthy life" (1986, World Bank).
8. "Always having enough to eat" (1987, Zipper).
9. "Both physical and economic access to food for all citizens over both the short and long run" (1987, Falcon et al.).
10. "Adequate food available to all people on a regular basis" (1988, UN World Food Council).
11. "Adequate access to enough food to supply energy needed for all family members to live healthy, active and productive lives" (1989, Sahn).
12. "Consumption of more than 80% of WHO average daily caloric intake" (1989, Reardon and Matlon).
13. "Access to adequate food by and for households over time" (1990, Eide).
14. "The ability... to assure, on a long-term basis, that the food system provides the total population access to a timely, reliable and nutritionally adequate supply of food" (1990, Staatz).
15. "The absence of hunger and malnutrition" (1990, Kennes).
16. "The assurance of food to meet needs throughout every season of the year" (1990, UNICEF).
17. "The self-perceived ability of household members to provision themselves with adequate food through whatever means" (1991, Gillespie and Mason).
18. "Access to food, adequate in quantity and quality, to fulfill all nutritional requirements for all household members throughout the year" (1991, Jonsson and Toole).
19. "Access to the food needed for healthy life for all its members and not at undue risk of losing such access" (1991, ACC/SCN).
20. "The viability of the household as a productive and reproductive unit (not) threatened by food shortage" (1991, Frankenberger and Goldstein).

Source: Maxwell (2001)

The sufficient supply or availability of food in the market on an aggregate basis for a country does not guarantee food security. It is historically proven that a country can suffer from famine despite adequate food stocks (Sen, 1981). According to Islam (1999: 2-3):

With adequate supply of food to meet the requirement for its population on an aggregate basis, a country can suffer from food insecurity because given the inequality in the distribution of income as in case of Bangladesh and other less developed counties, all sections of people do not have adequate income to obtain food from the market.

The 1996 World Food Summit Declaration stated that food security is “all people at all time have physical and economic access to sufficient, safe and nutritional food to meet dietary needs and food preferences for an active and healthy life” (Thomson, 2001). Lee et al. (2001: 462) argue that “truly sustainable food security can only be achieved by a second ‘doubly Green’ Revolution, which in addition to being technologically productive and economically viable, is equitable, sustainable, and consistent with long-term desired environmental outcomes”. Islam (1999:3) notes that “sometimes, food self-sufficiency is used interchangeably and confused with food security at some circles”.

The food security literature during the 1980s identified cyclical and acute food insecurity (as consequences of seasonality and famine, respectively) as central features of rural poverty in tropical regions (Chambers, 1989; Sen, 1981). Pioneer work on vulnerability during the 1990s highlighted the greater exposure the poor have to idiosyncratic or covariant shocks such as ill-health and drought and their lower resilience in the face of such risks (Chambers, 1989). Poverty studies suggest that household livelihood and food security can become trapped in a vicious cycle of poverty (Hashemi, 2001; Islam, 1999). To attain food security, people need resources and assets, which poor people lack. The high concentration of poor people on degraded and fragile lands in risky environments adds to their livelihood vulnerability (Dietz, 2000), which ultimately leads to chronic food insecurity. Sen’s entitlement approach suggests that food security flows from possessions, and these from endowments that constitute one’s entitlement (Sen, 1981). Household food security is a prime concern for poor households and determines their production and investment choices (IFAD, 2001).

I used the definition of Maxwell and Frankenberger (1992) for this research: “access by all people at all times to the food needed for an active and healthy life”. At the household level, food security refers to the ability of the household to secure, either from its own production or through purchases, adequate food for meeting the dietary needs of its members (Maxwell and Frankenberger, 1992). Bouis and Pena (1997) argue that total calorie intake is an insensitive and, therefore, inadequate parameter to measure inequality in the intrahousehold allocation of food, and that non-staple food consumption is a better parameter to measure intrahousehold food allocation that is more sensitive to gender disparities. I have conceptualized food security as the availability and access to food of the household and the consumption of adequate amount of food by all members of the household to maintain their nutritional adequacy. Following Bouis, non-staple calorie intake has been used as a measure of household and individual food security. The meaning of food security from the people’s own perspective was investigated in the qualitative part of the research.

3.2.3 Nutrient adequacy

Consumption smoothing is practiced by households to attain household food security. “Household food security is a necessary but not sufficient condition for nutritional security” (Frankenberger and McCaston, 2001: 2). A household may be food secure but all the members of a household might still not be food secure due to gender inequalities and/or internal dynamics of the household. Individual nutrition adequacy depends on individual food

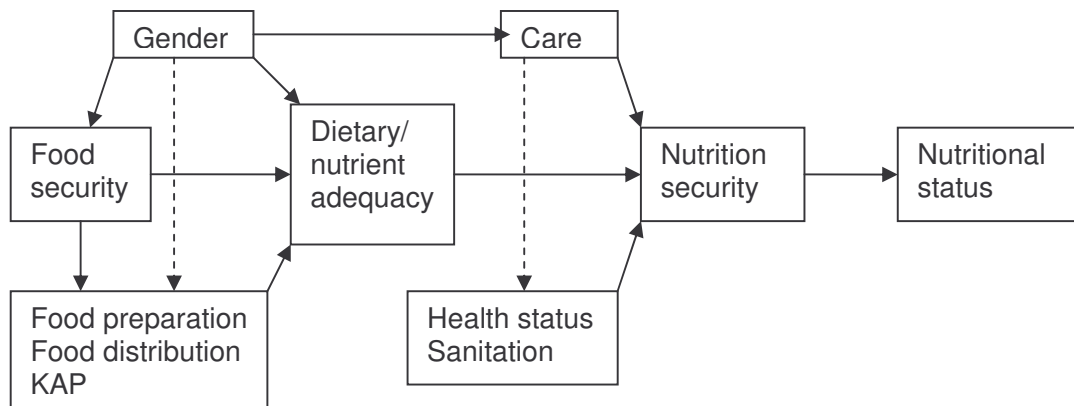
security, though an individual might not get adequate nutrients. Sometimes nutritional adequacy is mistaken for nutrition security. Adequate dietary intake is a must for nutrient adequacy. Nutrient adequacy is part of nutrition security. Frankenberger et al. (1993) defined nutrition security as a “condition which combines having access to adequate food, being well cared for, and enjoying a healthy environment.” They suggested that nutrition adequacy can be achieved only through adequate dietary intake, care, and health and sanitation. Food is only one factor in the malnutrition equation (Frankenberger and McCaston, 2001). Health, environmental, cultural and behavioral factors are influences in the path from food to nutrition (IFAD, 1993). Considering these factors, Morris (1999) argues that the relationship between household food security and nutrition security is complex in nature. Thus, growth may falter in spite of the fact that a household or an individual is food secure.

Nutrition security can be measured as individual nutrition, which can be measured through clinical signs and symptoms, nutrient consumption and anthropometric indicators. Measuring individual nutrition through clinical signs and symptoms is difficult to implement for large samples. Medical professionals are required to conduct this and is quite costly. Besides the issue of interpretation, there is also the issue of accuracy (Harries-White, 1997).

Nutrient consumption is considered to be an input for health production functions (Behrman, 1988), while calorie intake is correlated with other nutrients. Accurate measurement needs to be recorded through on-site observations of normal food consumption behavior over a certain period of time (Harries-White, 1997). Dietary adequacy or nutritional adequacy is defined as the intake of the optimum amount of essential food elements according to the recommended dietary allowances (RDAs) suggested by the World Health Organization (WHO), the Food and Agriculture Organization (FAO), and the National Nutrition Council (NNC). Nutritional requirement estimates are based on averages for different populations. These are always corrected for body weight, age, sex, activity and certain physiological states such as pregnancy and lactation. Use of the RDAs is controversial and undergoing constant revision (Chen et al., 1981; Pacey and Payne, 1984). Controversy arises from the way the RDAs are calculated (Randolph et al., 1991). In addition, it is necessary but difficult to assess and control for differences in energy needs between individuals (Bouis and Pena, 1997; Harris-White, 1997). The energy needs of a person depend on his or her activity level and vary from time to time. There remains a chance of over- and under-estimation of adequacy. Bouis and Pena (1997: 181) state that: “It is possible that highly favored, higher-weight individuals would appear to be no better off than highly disfavored, lower-weight individuals, if both groups were in energy balance”. They propose to use food share to energy share (FS/ES) ratios as a better indicator to measure inequalities among individuals.

Anthropometric measurements can be used as indicators of health status. Basic measurements such as weight, height, and especially age are hard to measure during field surveys. In addition, “by themselves they cannot tell us if there is failure in the equity of household food distribution, because they are the summary outcome of the interaction between food intake and infection” (Harries-White, 1997: 196). Infections during the first two years of life cause irreversible consequences in growth and height trajectories (Payne, 1994). A child’s height deficits relative to age are interpreted as a long-term measure of nutritional status (chronic situation), while weight deficits relative to height are interpreted as a short-term indicator (acute condition) (Waterlow, et al., 1977). Nutritional deficiencies have little significance at the global level, but relate to specific, sometimes ethnic, groups (Harries-White, 1997; Pacey and Payne, 1984).

Figure 3.2 The linkage between individual food and nutrition security



In this research, the individual nutrition of children under two was assessed on the basis of height-for-age (HAZ). Nutritional adequacies on the individual level have been taken into consideration by looking at energy, protein, mineral and vitamin intake.

3.2.4 Livelihood security

An issue that is linked to the issue of food security is livelihood security. It puts food security in a broader perspective. In general, security means stability and continuity, and livelihood security means security in the provision of basic human needs such as food, clothing, shelter, education and health. Thus, household food security can be seen as an integral part of livelihood security. According to Frankenberger and McCaston (2001), the concept of livelihood security developed through the evolution of concepts and issues related to food and nutrition security. When a household's livelihood is secure, it should be food-secure as well. But a food-secure household might not be secure in terms of livelihood.

The word "livelihood" originates from the word "live". The simple dictionary definition of livelihood is a "means of living". Longman's Contemporary English Dictionary puts this a bit more elaborately as "the way by which one earns enough to pay for what is necessary". The concept of livelihood is relatively new but is now widely used in poverty and rural development literature. "Its meaning can often appear elusive, either due to vagueness or to different definitions being encountered in different sources" (Ellis, 2000:7). According to Chambers and Conway (1992: 6), livelihood "comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living". To Ellis (2000: 10), livelihood "comprises the assets (natural, physical, human, financial and social capital), the activities, and the access to these (mediated by institutions and social relations) that together determine the living gained by the individual or household".

Chambers (1989: 7) defines livelihood as "adequate stocks and flows of food and cash to meet basic needs". Redclift (1990: 85) states that security is "ownership of, or access to, resources and income earning activities, including reserves and assets to offset risks, ease shocks and meet contingencies", and defines sustainable as being "the maintenance or enhancement of resource productivity on a long-term basis". According to Dietz (2000), a sustainable livelihood perspective can more easily combine the improvement of a variety of options because it does not focus solely on land. Campilan (1998: ix) cites the definition of the World Commission on Environment and Development (WCED) for livelihood: "adequate reserves and supplies of food and cash to meet basic needs". He further states that

“sustainable livelihoods can be assured through: sustainable employment and adequate remuneration; engagement in productive activities which are ecologically sustainable and economically sound; and ownership of or access to resources and their management, within their capacity to recover”. Huq (2000: 177) argues that “livelihoods encompass income, both cash and kind, as well as social institutions relating to kinship, family, neighborhood and village, women’s groups and property rights required to support and to sustain a given standard of living. Livelihoods involve social and kinship networks for facilitating and sustaining diverse income possibilities”.

According to Niehof and Price (2001), definitions such as those of Chambers and WCED do not distinguish between the dimensions of process, activities, outcomes and assets and resources. They suggest that livelihood generation will display the workings of a multifaceted and dynamic system, which they call the livelihood system. They define livelihood in terms of a system having the following components:

- Inputs: resources and assets.
- Output: livelihood.
- Purpose: livelihood adequacy for meeting basic needs (Chambers, 1989).
- Activities: livelihood generation and the composition of the livelihood portfolio.
- Agency: efforts of households and individuals to achieve livelihood adequacy.
- Quality: degree of vulnerability (or sustainability) of the livelihood produced.
- Environment: context within which the livelihood system functions interfaces with other systems and solutions.
- Locus: the household as the locus of the livelihood generation.

The concept of livelihood as described by Long (1997) expresses the idea of individuals and groups striving to make a living, attempting to meet their various consumption and economic necessities, coping with uncertainties, responding to new opportunities, and choosing between different value positions. As Wallman states (quoted by Long, 1997: 11):

Livelihood is never a matter of finding or making shelter, transacting money, getting food to put on the family table or to exchange on the market place. It is equally a matter of ownership and circulation of information, the management of skills and relationships, and the affirmation of personal significance [involving issues of self-esteem] and group identity. The tasks of meeting obligations, of security, identity and status, and organizing time are as crucial to livelihood as bread and shelter.

Livelihoods can be characterized by their degree of vulnerability or – at the other end of the risk continuum – sustainability (Niehof and Price, 2001). To assess livelihood sustainability we have to look at how rural people are maintaining their livelihoods and understand the dynamics of rural livelihood systems and people’s strategies. Households manage their livelihood strategies according to the household situations, using different types of strategies in different situations and at different phases in the life course of the household. Furthermore, people develop their livelihood strategies according to the situation they face on the basis of their past experiences (Pennartz and Niehof, 1999). Households use their assets, livestock or savings, or they use social capital to handle or overcome situations of stress.

Rural people maintain their livelihood through a bundle of activities that can be regarded as a livelihood portfolio (Niehof and Price, 2001). These livelihood portfolios are maintained in organized ways by using assets and resources with certain skills (i.e. inputs) to generate livelihood security, referred to as livelihood strategies. Livelihood strategies would include

utilizing all the resources or assets they have access to, such as natural resources (land, water, biological), physical resources (buildings, irrigation canals, roads, tools, and machines and so on), financial resources (savings, access to credit), human resources (labor through education, experience, skills and health) and social capital (see below) (Ellis, 2000). The availability of resources and skills to utilize these properly is crucial in determining the dynamics of household level livelihood security.

Recent debates have identified crucial issues for attaining livelihood security or a sustainable livelihood as centering on resource access (Berry, 1989; Blaikie, 1989), livelihood portfolio (Niehof and Price, 2001), livelihood diversity (Ellis, 2000), asset vulnerability (Moser, 1998), and entitlements (Sen, 1981). I have kept these in mind and used Chambers' (1989) definition of livelihood security as the working definition. Overall, livelihood security includes secure access to land, resources and markets (Boyd and Slaymaker, 2000). Frankenberger and McCaston (2001) suggest that livelihood can be secured through livelihood promotion, protection and provisioning strategies.

The total expenditure of a household as a proxy indicator for household level livelihood security was used in the qualitative component of my research. I focused on how households sustain their livelihoods and cope with critical situations (lean periods of the year) and risks (floods) by using social capital.

3.2.5 Vulnerability

Vulnerability has the opposite meaning of security. The terms vulnerable and vulnerability are relatively new in the livelihood debate. These terms were first used in disaster literature in the early 1980s. At present, poverty literature also uses this term but randomly. Vulnerability is almost synonymous with insecurity. Whenever livelihood is insecure we say that it is vulnerable. The concept of vulnerability is often used as a synonym for poverty, but is not the same (Moser, 1998). Most of the poverty literature shows vulnerability as the ultimate product of poverty. Wisner (1993) argues that vulnerability is sometimes simply poverty, and the state of poverty and vulnerability are closely/inextricably linked (Banerjee and Newman, 1994; Morduch, 1994), while Devereux (2001) argues that livelihood vulnerability or insecurity is not just a symptom of poverty, but is a contributory cause. Poor households are as a matter of course among the most vulnerable while rich households may also be vulnerable due to certain shocks such as the death or illness of the male household head. Vulnerability is a dynamic process (Glewwe and Hall, 1998; Moser, 1998) and people move in and out of poverty due to vulnerability (Baulch and Hoddinott, 2000). But poverty is usually treated in static, non-probabilistic terms (Ravallion, 1996). Poverty is about "not having enough now", whereas vulnerability is about "having high probability now of suffering in future". The poor are vulnerable but both groups are not identical (Baulch and Hoddinott, 2000). Dietz (2000) observes that, due to resource constraints, the poor are often concentrated on the most degraded and fragile lands with a risky environment, making their livelihood even more vulnerable. The poor always identify vulnerability as a decisive dimension of poverty (Kanbur and Squire, 1999).

A widely accepted definition of vulnerability and its indicators are not yet available (Moser, 1996). Different economists and sociologists put forward different definitions from different perspectives. Vulnerability implies the inability to cope with shock or misfortune. Vulnerability can be defined as a high degree of exposure to risk, shocks and stress, and as proneness to food insecurity (Chambers, 1989; Davies, 1996). Vulnerability refers to people's exposure to contingencies and stress, and their difficulty in coping with them (Chambers, 1989). Chambers also argues that vulnerability has two forms: (a) the risks, shocks and stresses to

which an individual or household is subjected; and (b) the state of being defenselessness or the lack of means to cope with risks, shocks, stresses, or demands.

Prichett et al. (2000) defined vulnerability in terms of poverty, seeing it as the risk of a household falling into poverty in the future (2000). Christiaensen et al. (2000) defined vulnerability as “the probability of living standards falling below some reference level in future” (2000: 1). Moser (1996:24) defines vulnerability in the environmental context as “the well-being of individuals, households, or communities in the face of a changing environment”. She argues that vulnerability is due to a lack of assets. However, it is not only the lack of assets, but the management of assets also is a key factor behind vulnerability (Swift, 1989). Vulnerability is sometimes seen as poverty. Huq (2000) argues that the concept of vulnerability maybe too simplistic because of the strong correlation between income and access to resources, and people’s ability to protect themselves and recover from disasters. Ellis (2000) sees vulnerability as a household’s inability to cope with the adverse situation with existing assets and resources. While Devereux (2001) sees vulnerability as a concept that combines exposure to a threat with susceptibility or sensitivity to its adverse consequences.

Different authors have suggested different types of vulnerabilities from different perspectives. Alwang et al. (2001) divided vulnerability into several components of a risk chain: a) the risk; b) the responses; and c) the outcome in terms of welfare loss. Sen classified vulnerability on the basis of risk and rights. According to him, “the first may be called ‘risks-centric view’ whereby vulnerability is typically defined as variability in the living standard caused by consumption or income shocks. The second perspective may be called the ‘rights-centric view’ whereby vulnerability is caused by the lack of social and political rights” (Sen, 2002: 1).

Glewwe and Hall (1998:185-86) distinguished vulnerability on the basis of the socio-economic context as “policy-induced” and “market-induced”, observing that “interdependence within the larger economy, less diversified household income, less stable employment and reduced demand for lower level skills as technology changes” are responsible for economic shocks behind vulnerability. Winchester (1992) relates the level of vulnerability to household characteristics. He includes type of family (indicator of “how people live, assets they share, nature of support network”) and family size (indicator of “labor power and productivity”). He also suggests that fertility patterns and phase in the family life cycle have a significant effect on household size and economic status. Another important characteristic that bears on differential vulnerability is the age of the household members, which points to a relationship between vulnerability and the household life course. People diversify their livelihood to avert future vulnerability (Ellis, 2000).

According to Winchester (1992), vulnerability at the community level is related to the degree of risk due to extreme physical or natural phenomena. He emphasizes the risk related to socio-economic and socio-political factors. Many development practitioners tend to use this description. Sen (2002) adds a gender perspective to vulnerability, arguing that gender vulnerability happens due to gender hierarchies in the development process as part of differential ways women experience marginalization and discrimination compared to men. He argues that social vulnerability originates due to exclusion because of breakdown of social ties, discrimination and harassment experienced by minority groups, and lack of protection against hardship created by divorce or desertion, during widowhood and for the elderly (World Bank, 2000).

About 15 percent of households in rural Bangladesh are female-headed and they belong to an acutely vulnerable group (Islam, 2002). Three-fourths of them are landless, and of these, one-third is farm laborers (Mannan, 2000). These women are generally widowed, divorced, deserted, or with disabled husbands. To take care of the situation of the vulnerable women, the government of Bangladesh is providing a social safety-net by issuing vulnerable group development (VGD) cards with the assistance from the World Food Program (WFP). The elderly are another vulnerable group, and their vulnerability has increased with the breakdown of the extended family (Islam, 2002). The government has introduced a pension system for the rural elderly, though the amount of money provided is very small. Children are also vulnerable with about 29 percent of the boys and 4 percent of the girls having to work to support their families due to the breakdown of the marriage of their parents (Stalker, 1996).

Table 3.1 Sources of vulnerability

Types	Micro	Meso	Macro
Natural/ environmental	Pest attacks Crop failure due to bad seeds	Water logging River erosion Salinity Aridity Deforestation Northwester/tornado Epidemic Arsenic contamination Land degradation	Climate change Sea-level rise Flood Drought Earth quake Tropical cyclone
Social	Illness Injury Disability Old age Death of husband Divorce/desertion Crime Domestic violence Breakdown of social ties Erosion of community level organization Lack of access of women to wage labor Social stigma related to gender	Discrimination and harassment to the minor groups	Ethnic cleansing Skewed land ownership
Economic	Loss of job Decline in wage employment Death of livestock Property loss Access to land	Resettlement Harvest failure	Unemployment Price hike (inflation)
Political	Political violence	Mastanism ¹	Governance crisis Public strike (<i>hartal</i>)

Source: Adapted from Moser (1996) and World Bank (2000)

¹ *Mastans* are local strongmen or hoodlums who engage in undesirable criminal activities including murder (*mastani*). The term *mastanism* is used in the context of the political culture of Bangladesh.

Seasonal time plays an important role in rural livelihood (Niehof, 2004). All rural households have to face seasonality as an inherent feature of their livelihood (Chambers, 1989; Sahn, 1989; Agarwal, 1990). Seasonality means that continuous household consumption needs are not matched by even income flows, and consumption “smoothing” is needed (Ellis, 2000). In rural India, the seasonal calendar explains the timing of seasonal labor migration and helps in determining the crisis period (Lindenberg, 2002). Seasonal vulnerability in rural Bangladesh is an important dimension of vulnerability due to market peaks. Households channel their resources in accordance with the agrarian cycle (McGregor, 1998). Migration to other agricultural zones is an option for coping with seasonal vulnerability (Ellis, 2000), while circular or permanent migration of one or more household members to non-farm occupations are options as well (Alderman and Sahn, 1989).

Vulnerability has been defined in terms of food vulnerability in the quantitative part of this research. At first, the households were grouped into four groups according to the difference in total calorie intake between two periods: total calories increased by >15%, by 0-15%, decreased by >15%, and decreased by 0-15%. Secondly, the households were divided into three groups according to non-staple calorie intake: <250, 250-500, and >500 calories. The two criteria were given equal weight in a combined classification, resulting in the following groups: least vulnerable, moderately vulnerable, and severely vulnerable. Food vulnerability was measured among the young aged 6-20 years, as influence of non-staple calorie intake is more pronounced among this age group. In addition, vulnerability has also been defined in terms of proportion of food expenditure. A household has been considered to be vulnerable if expenditures for food exhaust 80 percent of total household expenditures. In the qualitative part of the research the several dimensions of vulnerability found in the literature are elicited from the case studies.

3.2.6 Household livelihood strategies

The Oxford dictionary defines strategy as a “plan, method, or series of actions designed to achieve a specific goal or effect”. The livelihood system is complex. It is developed through knowledge, experience and belief. As mentioned earlier, to maintain and enhance their livelihoods, households develop a livelihood portfolio. To implement this livelihood portfolio, households have their own strategies, which are termed livelihood strategies. These strategies vary according to historical time, season, and situation. The households determine and design strategies, reviewing the previous strategies and incorporating lessons learned from past experience, sometimes changing their strategies to face a new situation.

Swift and Hamilton (2001: 86) suggested four types of livelihood strategies for the rural household. These are:

- livelihood intensification, where per hectare land or animal production is increased through more labor, capital or technology;
- livelihood extensification, where production is increased by bringing more land or animals into the production system keeping labor, capital or technology at the same level;
- livelihood diversification, where households diversify their economic activities through a wider range of on-, non- and off-farm income opportunities;
- migration, where people migrate temporarily or permanently to seek their livelihood.

Livelihood intensification is the most frequently used strategy by landowners, while poor people who lack land depend on non-farm labor, activities and income sources (Niehof, 2004). Ellis (2000) points to the importance of diversification as a strategy and sees the

diversity of agriculture or on-farm diversification as an important tool for rural development policies. A good example of on-farm diversification is the biodiversity of *enset* (*Ensete ventricosum* Welw. Cheesman) for food security and livelihood security in rural Ethiopia (Negash, 2001). She observed that both poor and wealthy households diversify in terms of enset varieties, but they do so for different reasons and to different degrees.

Diversification is an important strategy for decreasing livelihood vulnerability or enhancing livelihood. People not only diversify or de-diversify their livelihood to cope with the adversity but also to maintain and enhance livelihood (Niehof, 2004). Barrett et al. (2001: 322) noted that “diversification is widely understood as a form of self-insurance”. Ellis defines livelihood diversification as “a process by which rural families construct a diverse portfolio of activities and social support capabilities in order to survive and to improve their standard of living” (Ellis, 1998: 1). He concludes that diversification has an equalizing effect on rural economies (income and wealth) as well as the opposite effect, because there are different mechanisms involved (Ellis, 2000). Ellis (2000) observes three patterns of diversification: a) a linear negative relationship between non-farm income share and either total household income or landholding, found in Asia and Latin America; b) a linear positive relationship between livestock and assets (human capital) that separates the better-off from the rural poor, found in Africa; and c) a U-curve relationship, where the non-farm income share is relatively high for small farms and poor households, declines in the middle-income farm size range, and rises among the larger-income farm sizes. The possibility of livelihood diversification also depends on seasonal time (Niehof, 2004). Moser’s study provides some answers as to how people diversify (Moser, 1996: 2):

The ability of households to avoid or reduce vulnerability and to increase economic productivity depends not only on their initial assets, but also on their ability to transform those assets into income, food, or other basic necessities effectively. Assets can be transformed in two distinct ways: through the intensification of existing strategies and through the development of new or diversified strategies. How – and how effectively – assets are used and what strategies are adopted to cope with economic stress is determined by household, intra-household and community factors. At the household level internal lifecycle events that affect the structure and composition of households – birth, death, and marriage – can affect their ability to respond to external changes. Within the household asymmetries of gender and age translate into differences in the ability to cope with economic difficulties.

Household and individual livelihood strategies might also be thought of in terms of access to different types of capital (Scoones, 1998; Bebbington, 1999). Income, expenditure and the experienced quality of life are all somehow implicit in the notion of livelihood. In their livelihood strategies, people make certain choices regarding the substitution between the different dimensions of poverty (Bebbington, 1999). Livelihood strategies are attempts, in a situation of existing and sometimes severe constraints, at a continuous management and modification of these substitutions, trade-offs and draw-downs on different capital assets. How these tradeoffs are made, and which ones are preferred, varies in the short term and throughout the life cycle. At certain points the resulting strategy may seem sustainable, at other points not. The different types of capital are thus not only inputs to livelihood and development strategies – they are also their outputs. Thus their changing composition ought to be considered not only in terms of sustainability (Serageldin and Steer, 1994) but also in terms of poverty (Bebbington, 1999).

How people make livelihood choices depends on what development, poverty and livelihood mean to them, as well as the constraints under which they make their decisions and the

power relations at play (Bebbington, 1999). We therefore need to be concerned not only with the ways in which assets are translated into income, but also with their impact on peoples' sense of their well-being. In this sense, peoples' capital assets affect poverty status and the quality of life by affecting human experience as well as income.

Crowe (1989: 19) points to the varied ways in which the concept of strategy has been employed, ranging "from sophisticated investigations of some of the tenets of game theory to ad hoc usages of the term strategy in which little or no attention is paid to its theoretical grounding". While accepting that there is nothing intrinsically wrong with this, he suggests that there is merit in taking the term to "imply the presence of conscious and rational decisions involving a long-term perspective" (ibid.). Anderson et al. (1994) argued that strategies are taken through rational decisions and serve medium to long term goals. They also suggest that strategies are more generalized than plans, rather being like general prescriptions that actors take into account when making plans within structural constraints.

Rural households in Ethiopia follow different strategies to cope with food insecurity. These are: diversification of the farming system; exchange or borrowing of food from neighbors, kin or relatives and elites to overcome seasonal lean periods; inter-cropping of early maturing legumes or vegetables; migration to cities or towns; participation in food-for-work programs; wage labor for the sending of remittances; or polygamous marriage as a means to expand landholdings and to increase household labor (Negash, 2001). A study in Sri Lanka shows that, at the initial stage of shock, households try to be involved in alternative income sources to keep the subsistence base of the household intact. They then switch over to austerity measures like increased dependency on credit and exchange within and between households. Only after these sources are exhausted do they dispose of their productive assets, which severely weaken their current and future income potential (Senaka Arachchi, 1998). Similar situations exist in the rural areas of Bangladesh. Helen Keller International (HKI) listed the following coping strategies in Bangladesh after the 1998 floods in Bangladesh: use of savings; taking food loans; borrowing money or borrowing in kind from relatives or neighbors; borrowing money from local lenders; and distress sales of assets (livestock, utensils) (HKI, 1998). Niehof and Price (2001) argue that coping strategies are developed for recurrent and foreseeable situations of stress.

Migration is the strategy taken by the poor as the last resource as part of livelihood diversification. Migration can be classified into four categories:

- Seasonal migration, which refers to temporary migration and occurs during different agricultural seasons. This type of migration occurs during slack or harvesting periods.
- Circular migration, which refers to temporary migration, but which is not related to seasonal factors in agriculture. This type of migration occurs due to opportunity of cyclical needs in non-labor markets.
- Permanent migration, which refers to migration of the whole family to a different location for better opportunities or to avoid a vulnerable situation at the place of origin. Rural-urban migration is the best example of permanent migration, in which case a whole family migrates to the urban center from rural areas.
- International migration, which refers to out of country migration or migration abroad by young family members temporarily or all members of the household permanently. Migration from rural areas of South Asia to the Middle East is a classic example of this type of migration.

Time is an integral element of livelihood strategies because the concept of strategy implies anticipation of the future. Time regulates the use and management of resources. It is neither human nor material, but all activities have a time dimension (Niehof, 2004). "It can not be accumulated or increased but the way it is used can be altered or organized" (Engberg, 1990: 17).

Another crucial issue in livelihood strategies is the gender dimension. Crow (1992) observed that gender roles stand in the way of income-earning opportunities among women in India. A similar situation exists in Bangladesh. Kabeer (1994) reported seclusion of women in Bangladesh from the labor markets due to purdah. Under such conditions, purdah defines the limits of women's opportunities for gender-specific diversified livelihood. Wage discrimination is another factor that affects women the most.

All the issues raised above were considered in the research to gain an in-depth and clear understanding of household level livelihood strategies. I have looked at both household strategies and individual strategies, and the interaction between the two. On many occasions, due to circumstances, individuals may use different strategies when joint decision-making at the household level fails. The factors of gender and age play an important role in this situation.

3.2.7 Decision-making

Household level decision-making is multi-faceted in nature. The needs and goals of the households influence household decisions. Resource availability and the overall environment of the household, community and society play a crucial role in how the household will achieve its goals. Households have to take short-term as well as long-term decisions to satisfy their needs, such as food requirements, cash to purchase other necessary basic consumer goods, shelter, health care, etc. (Huijsman, 1986). Huq (2000: 177) observes "that decisions about livelihood usually generate a 'dis-embedding' and 're-embedding' of existing economic, cultural and political factors, and can create new livelihood forms".

Understanding household decision-making processes is difficult. The 'rational choice approach' is currently the most popular one for studying decision-making. It considers individual preferences and available options. Pennartz and Niehof (1999) argue that such an approach leads to a reductionist view on the everyday life of family households. Aspects such as household strategies, household organization, power relations, and embeddedness in opportunity structures, the temporal perspective, and moral motivations have to be considered in order to fully understand household decision-making processes.

Four dimensions can be distinguished in decision-making: the subject or topic, the decision maker(s), the outcome or the decision, and the process of decision-making. How decision-making takes place, who is involved and what the outcomes are usually depends on the subject that is decided upon (Niehof and Price, 2001). In this research, decision-making was narrowed down to the subject or topic of decision-making, the actors involved, and the outcomes of the process.

Gladwin and Murtaugh (1980) proposed that decision-making can take place in two modes: the attentive mode (conscious) and the pre-attentive (unconscious) mode. During a crisis or in a vulnerable situation, mostly the pre-attentive mode is at work, while during normal situations the attentive mode is used. Once a decision has been made in the pre-attentive mode there is little or no opportunity to reflect on it, but later on the decision may be revised and be made in an attentive mode.

According to Chen (1996), the topics of rural households' decisions are basically of three types. The first type concerns the household economy, such as the purchase of food and clothing, house construction, the purchase of household goods, monetary saving, purchase of furniture, etc. The second concerns social activities, such as selecting a spouse for a daughter or a son, the education of daughters and sons, the amount spent on festivals and religious ceremonies, the carrying out of domestic chores, and so on. The third type of decisions are those that concern farm activities, such as crops to be grown, the use of modern agricultural inputs, joining farm organizations, the health care of animals, purchase of animals, the sale of farm produce, the sale of animal products, the storage of farm produce, etc.

In this research, decision-making focused on issues in rural households that are critical to livelihood and food security. These are issues of the three types listed by Chen. Data was collected and analyzed about decisions on the following issues: borrowing, expenditure on household consumption, investment in production of crops, livestock, food, education and medical treatment, purchase and sale of assets, and sale of produce.

3.2.8 Risk

Douglas (1986: 20-22) defines risk as "a statistical concept as the expected frequency of undesirable effects arising from, [for example], exposure to a pollutant". She notes that risk can be estimated as some sort of product of probability of an event and the degree of severity of the possible harm. She identifies three disciplinary approaches to risk: (1) the engineering approach, extended from the analysis of risk to the analysis of perception; (2) the ecological approach; and (3) the cognitive approach.

Natural disasters or hazards such as floods, cyclones, earthquakes and drought are also a form of risk that causes vulnerability. Households in such risky environments often have no alternative and have to accept the risks involved. Huq (2000) further suggests that shocks may occur within households (e.g. accident, divorce from or death of household head, serious illness, etc.) causing long term changes in the family structure.

Risks can be classified according to source of risk:

- Environmental risks (drought, floods, earthquakes, pests);
- Market risks (price fluctuations, wage variability, unemployment);
- Political risks (changes in subsidies or prices or income transfers from government, civil strife, war);
- Social risks (reduction in community support or community entitlements, divorce);
- Health risks (illness that prevents work, death of husband)
(South African Disaster Monitoring Cell, 2001).

All risks or shocks ultimately affect the economy of the household. According to Glewwe and Hall (1998), households take the following strategies to reduce economic shocks:

- Dis-saving and selling physical assets,
- Increased labor force participation,
- Find new jobs that use existing skills,
- Receipt of inter-household transfers,
- Use of credit for consumption purpose,
- Altering consumption patterns,
- Directly producing consumption goods,
- Schultz's education hypothesis.

The manner in which the resources required for meeting the costs of coping are raised is, perhaps, more important than the magnitude of risk-induced costs per se. Household coping responses can be classified into three broad groups, namely: (a) positive coping (examples are soft credit mobilization at zero or low interest rate, mobilization of kin-support); (b) negative coping (examples are distress sale of assets, borrowing at high interest rate); and (c) dis-saving, which is an intermediate category. In case of the latter categorization would receive a negative rating if the dis-saver is a poor household dispensing with the already very low amount of savings in times of distress being cut-off from the credit market. The same would receive a positive rating if the dis-saver is non-poor with sizable savings to part with in bad times without significant disruption of the household's ability to meet productive needs. Jorgensen and van Domelen (1999) classified risk mitigation strategies into three types. These are prevention strategies to reduce the probability of a down-side risk, mitigation strategies to decrease the potential impact of a future down-side risk, and coping strategies to relieve the impact of the shock once it has occurred. While Devereux (2001) and Webb et al. (1992) distinguished risk mitigation strategies between ex-ante risk mitigation, where people take precautionary measures before the risk falls upon them, which is economically inefficient, and ex-post coping strategies, where people take measures after the risk falls on them though short-term coping strategies.

Households can face any of the five types of risks as described above. This research focused on three types of risk, namely: environmental risks (disasters like floods, drought, and attack of pests); social risks (reduction in community support or community entitlements, divorce); and health risks (medical costs, illness that prevents work, death of spouse).

3.2.9 Social capital

"Social capital, while not all things to all people, is many things to many people" (Narayan and Pritchett, 1997: 2).

Social capital is another concept that gained ground during the past decades (Portes, 1998). The term social capital surfaced after Putnam's study (1993) of civic traditions, democracy and development in Italy. Prior to that study, four types of capitals (financial, physical, human and natural) were distinguished by the scientists. Social capital is not available in cash but is sometimes more influential than other forms of capital, especially when a household is at risk. It has different meanings to different disciplines. It is recognized by development practitioners as a critical resource of the poor (Fox and Gershman, 2001).

The term "social capital" was originally used by sociologists, but receives increasing attention from economists. The concept of social capital has now been exported from 'sociological theory' into 'everyday language' (Portes, 1998: 2). The first definition of the concept by Bourdieu is: "The aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition" (Bourdieu, 1986: 248).

A "glue that holds societies together" is generally recognized as necessary for a functioning social order, along with a certain degree of common cultural identifications, a sense of "belonging" and shared behavioral norms. This internal coherence helps to define social capital. Without it, society at large would collapse, and there could be no talk of economic growth, environmental sustainability, or human well-being – as Somalia, Yugoslavia, and Rwanda painfully illustrate. According to Serageldin and Grootaert (2000) there are three views of social capital that broaden the concept: a) informal and local horizontal

associations, b) hierarchical associations, and c) formalized national structures such as the government and the rule of law. These views have several common features. First, they all link the economic, social and political spheres. They share the belief that social relationships affect and are affected by economic outcomes. Second, they all focus on relationships among economic agents and the ways in which formal and informal organizations of these agents can improve the efficiency of economic activities. Third, they all imply that desirable social relationships and institutions have positive externalities. Since individuals cannot appropriate these externalities, agents tend to under-invest in social capital, creating a role for public support.

The similarities among diverse forms of social capital lead to some key differences between social and physical capital. The key differences include:

- Social capital does not wear out with use but, rather, with disuse;
- It is not easy to see and measure;
- It is hard to construct through external interventions;
- National and regional governmental institutions strongly affect the level and type of social capital available to individuals to pursue long-term development efforts (Ostrom, 2000).

Social capital has different dimensions, such as kinship, neighborhood, horizontal and vertical linkages, and ethnicity (Bastelaer, 2000; Putnam, 1995). Social capital is defined by Moser (1998: 10) as “reciprocity within communities and households based on trust derived from social ties”. To Woolcock and Narayan (2000: 225), “it’s not what you know, it’s who you know”. While social capital to Coleman (1990: 300) constitutes “social relationships which come into existence when individuals attempt to make best use of their individual resources”. In addition, social capital refers to the norms and networks that enable people to act collectively. According to Putnam (1995: 67), social capital refers to “features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit”. The most crucial issues in livelihood are its sustainability and coping with vulnerabilities and stress. One way of coping is the use of social capital. “Social strategies i.e., the sharing of resources within the community through family or clan is also a common practice of coping with food deficit” (Campbell, 1991:145). Social capital also plays a strong role in livelihood generation in combination with the other types of capital: financial, physical, human and natural (Ellis, 2000). As stated above, it also plays a strong role beside other types of capital. It is not available in cash but is sometimes more influential than other forms of capital, especially when a household is at risk.

According to Swift (1998: 8), social capital is “made up of both networks of ascriptive and elective relationships between individuals, which may be vertical as in authority relationships, or horizontal as in voluntary organizations, and of the trust and expectations which flow within those networks”. He adds that social capital comprises the vertical claims, for example, on patron, chiefs and politicians that are expected to be met in times of crisis. Mula (1999) points to the important role of kinship in the coping strategies of rural households faced with continuing disaster.

Social capital derived from social structures is of two types: vertical (based on authority patron-client relations) and horizontal (based on equal social relations). Uphoff (2000) classified social capital into two interrelated categories of phenomena: (a) structural and (b) cognitive. He also explained these two factors from different angles.

Table 3.2 Complementary categories of social capital

	Structural	Cognitive
Sources and manifestations	Roles and rules Networks and other interpersonal relationships Procedures and precedents	Norms Values Attitudes Beliefs
Domains and dynamic factors	Social organization Horizontal linkages Vertical linkages	Civic culture Trust and solidarity Cooperation and generosity
Common elements	Expectations that lead to cooperative behavior, which produces mutual benefits	

(Uphoff, 2000: 221)

Adler and Kwon (1999:3) highlight six crucial issues regarding social capital:

1. Like all other forms of capital, social capital is a resource into which other resources can be invested with the expectation of future, albeit uncertain, return.
2. Like all other forms of capital, social capital is both "appropriable" and "convertible".
3. Like all other forms of capital, social capital can be a substitute or a complement to other resources.
4. Like physical capital and human capital, but unlike financial capital, social capital needs maintenance.
5. Like clean air and safe streets, but unlike many other forms of capital, social capital is a "collective good" in that it is not the private property of those who benefit from it.
6. Some scholars (e.g., Coleman, 1988) have argued that social capital, unlike all other forms of capital, is "located" not in the actors, but in their relations with other actors.

Adler and Kwon (1999) further distinguish three kinds of social capital benefits. First, social capital facilitates access to broader sources of information. In some cases, information beneficial at the focal-group level can lead to positive externalities for the broader aggregate. Second, social capital yields power and influence. Third, it results in solidarity. At the same time, they acknowledge that the use of social capital implies risks. In the first place, there is the information risk of social capital. Hansen's research (quoted by Brydon and Chant, 1993: 9) on the information benefits of social capital shows that project teams with strong ties to other units sometimes took longer to complete their tasks than those with weaker ties. He argues that weak ties are more effective than strong because they are less costly to maintain than strong ones. Second, the power benefits of social capital may in some cases form a trade-off against its information benefits. Ahuja (1998) argues that in many cases the direct contacts of focal actors will be less dependent on the focal actor if they have many direct contacts had few contacts. In the third place, the solidarity benefits of social capital may backfire. Strong solidarity with in-group members may reduce the flow of new ideas into the group, resulting in parochialism and inertia. Social networks and relations sometimes exert a negative influence (Adler and Kwon, 1999). As to this, Moerbeek (2001) observed that social capital can turn "sour".

Berry (1993) points out that the increase in salience of social networks as a means of access to productive resources does not mean that traditional institutions provide a reliable safety net for impoverished or crisis-stricken rural households. Impoverishment and instability often affect whole families and communities, undermining their ability to provide security for any – let alone all – of their members. This implies that there are limits to the use of social capital in

a situation of shared poverty or shared crisis. Serageldin and Grootaert (2000) argue that social capital can have an impact on development outcomes, including growth, equity and poverty alleviation, which leads to sustainable production and permanent income for achieving consumption smoothing, leading to food security.

Credits from formal, non-formal and informal networks are taken by the households to maintain livelihood portfolios and sustain their livelihoods. The formal sector includes commercial banks, the non-formal sector includes local moneylenders and NGOs, and the informal sector includes relatives, neighbors and local elites. When farmers lack assets they are treated as less credit-worthy (Holden and Binswanger, 1999). Commercial Banks usually take documents of land or a house on mortgage as collateral, while local moneylenders provide loans against documents of land, houses, jewelry or other valuable assets. Group trust functions as collateral in the case of credit provided by NGOs. All credit programs that target women use group formation and peer group pressure as collateral (de Groote et al., 1996; Zaman, 1999). Social collateral can replace individual collateral in group-based lending programs (Bastelaer, 2000). In recent years, NGOs in Bangladesh are taking the signature of the husband or son who will use the loan/credit (Rozario, 2002), while mutual trust and social or individual networks help the farmers to get credit at the individual level.

In the quantitative component of this research, borrowing money without collateral was used as a proxy of social capital. In the qualitative research I looked at the importance of social capital as developing over time and as used in household strategies and decision-making processes, as well as at the limits to the use of social capital. I took the role of social capital in sustaining livelihood and food security into account from a longitudinal perspective.

3.2.10 Gender perspective

The concept of gender came up in the 1990s and is linked to food security in a fundamental way (IFAD, 2001). Gender refers to socially constructed maleness and femaleness, which can vary widely across cultures. The term gender specifically refers to the psychological, social and cultural differences between men and women (Giddens, 1994; Williams, et al., 1994). In gender analysis, socially defined roles and relationships between men and women in a particular culture are being explored.

Gender, social norms and assets

Social norms are “gendered” in nature because they rely on a social construction of masculinity and femininity (Kabeer, 1995). Social perceptions of the contributions of women to the household affect the bargaining power of women at the household level (Sen, 1990). Folbre (1997: 266) defines fallback positions as “a non-cooperative equilibrium determined by social norms that dictate a certain division of labor based on separate spheres of men and women”. She also suggests that, due to social norms, family resource allocations are gender specific. South Asian women are supposed to play only a domestic role as wife and mother and are seen as inferior to men (Brydon and Chant, 1993). In rural West Bengal (India), seclusion of women in poor households excludes them from the agricultural labor market (Rogaly, 1997). Ellis (2000) cites Kabeer’s work on Bangladesh where in certain areas the practice of female seclusion or purdah curtails the capability of women to engage in income-generating activities outside the home. However, in recent years due to NGO activities and mass enrollment of women in the garment factories, the practice of *purdah* is in decline. Women are entering the labor force, albeit slowly. They even migrated overseas until 1998. But the Bangladesh government has resitricted overseas migration of women as nurses and domestic workers since 1998 for fear of sexual violence against migrant women (ASK, 1999).

Women's status defines their position in society. Illiteracy and poor education lie at the heart of women's lower status. Prevailing social attitudes towards women and religious teachings play a strong role in conditioning women's economic and political position and social mobility. However, women are said to be more likely than men to spend cash resources under their control on basic household needs. It was also observed that when women diversify and create new sources of income, men sometimes interpret this as an opportunity to reduce or withdraw their financial contributions from the domestic budget (Ellis, 2000). The status of women is an important determinant of child nutrition (Smith et al., 2003).

Social norms also bar women from entitlement over land, asset and resources. Dey Abbas (1997) argues that intrahousehold resource allocations are constrained in three ways due to gender asymmetries. These are: a) women are barred from land rights; b) secluded from the labor market; and c) have limited control over their own income. In Bangladesh, Muslim women rarely inherit land and if they do, they give it up to their brothers (De la Briere et al., 2003), and Hindu women never inherit any land. In the past, women were totally excluded from the male public sphere – fields, markets, roads and towns. Women's roles are limited to female space, having to play the roles of daughter, bride, wife, mother, mother-in-law and widow (Chen, 1990). At present, women enjoy limited access to the male sphere. They are now allowed to sell labor or become involved in employment or income earning initiatives, but they are supposed to hand their earnings over to their husbands. Kabeer (1995: 17) quotes a woman as follows: "As it is, he is letting me work, how would he feel if I also kept the money?" She also argues that women are disadvantaged by the rule that divorced women in Bangladesh, if they remarry, are not allowed to take custody of their children.

The role of women in society is always changing in the context of economic development (Boserup, 1990). In the past, women in Bangladesh were extremely neglected. As result of NGO activities and the mass participation of women in the garment and other industries, women's position and bargaining power at the household level are improving. NGO microfinance programs mostly target women. Pitt and Khandker (1994) observed that as a result of the women-targeted microfinance program in Bangladesh, there is a positive impact on family spending and labor supply. Rozario (2002) reported that though loans are taken by the women, the money is mostly used by their husband or sons. Women borrowers can rarely decide on how to use the loan.

Gender and household

The household plays a key role in gender analysis. The household is the place where gender discrimination starts. Feminists identified the household as an 'arena of subordination' (Brydon and Chant, 1993). Within the household, access to and control over resources is governed by a sexual division of labor (Niehof, 1999), with men and women as well as boys and girls having different roles and responsibilities. This creates conflicts between the household members (men and women). In most low-income households, men's labor is centered within the production sphere that is part of the paid economy, while women's labor is utilized in both reproduction and production in the unpaid economy (Moser, 1996). Sexual division of labor is generated at the household level and the role of women in the production sphere is usually ignored or not accounted for (Brydon and Chant, 1993). Women in Bangladesh participate in some phases of agricultural production and not in others. They mostly participate in domestic-based post-harvest activities (Chen, 1990).

Gender and household food security

Gender and household food security are linked in fundamental ways. Women are the caretakers of household food and nutrition security. In female-headed households, more

resources are allocated for household food security and the nutrition of children than in male-headed households. Female headed households where women control assets and resources spend more on education and health (Hallman, 2000). Women need access to resources, including productive assets, education, organizations and social networks, credit and legal rights, and voice in the political system. Gender equality is crucial for individual food security and nutrition adequacy.

In Bangladeshi society, where there are considerable gender disparities, there is a culture of male domination and an ensuing unequal intra-household distribution of food (Cain et al., 1979). Men in South Asian societies have greater control over material resources, knowledge and ideology (Palriwala, 1990). Their greater control is rooted in basic social, economic and cultural systems (Sen, 1994). Women generally play a crucial role in both food production and consumption. Longhurst (1983: 44) points out that “in rural economies, women are the pivot between production and consumption”. They are literally the gatekeepers to household food security and individual nutrition (Niehof, 2003). At the same time, due to cultural norms, women tend to take less nutritious foods than needed for their caloric and nutritional requirements (HKI, 1994). As it is, individual food security and nutrition is seriously affected by gender discrimination. In Bangladesh, like in other South Asian countries, women are undernourished as a consequence of their low status and weak bargaining power, which is reflected in pro-male biased food distribution (Bouis, 2003).

Gender, livelihood strategy and household decision-making

Women play a key role in ensuring the capacity of their families to procure adequate supplies of food on a sustainable basis. Thus, the role of gender in household decision-making and strategies is of great importance. Niehof and Price (2001) suggest that a gender-based analysis of household members' roles in various activities, access and control of assets and resources, and decision-making is one of the recognized perspectives and tools in analyzing how a household pursues its livelihood strategies. They also note that gender is a strong organizing principle within the household and that the way gender roles manifest themselves in livelihood strategies will intersect with ethnicity, class and other variables such as age and wealth. They also claim that in poor rural households, both men and women are engaged in survival strategies, but that decision-making strategies are along the lines of each gender's domain of responsibilities and the resources he or she can command.

Decision-making in farming households is determined by several factors such as women's and men's education, women's access to land, gender role perception, women's income, women's and men's labor contribution and farm size. Chen (1996), in her research in China, found that husbands make more decisions when their income contribution is higher, and that the wife's highest decision-making index occurs in those cases where the husband contributes 20 to 40 percent of the income, regardless of the wife's contribution.

As said, Bangladesh is a male-dominated society. Decision-making at the household level is rather gender biased. Women's status (relative to decision-making) is extremely low. The decision-making processes at the household level are influenced by power rather than by morality, which ultimately affect the food security and nutritional adequacy at the individual level. Women and girls often suffer from food insecurity and nutrition deficiency.

Gender needs

Gender needs are very important in development planning. Women have needs which are different from those of men. These needs, though common in nature, vary across society and

culture. Women in all societies possess two types of gender needs: practical gender needs (PGN) and strategic gender needs (SGN) (Moser, 1993).

Practical gender needs: These are the needs that women identify in their socially accepted roles and subordinate position in the gender division of labor in society. Women do not challenge, but accept those positions. The PGN are a response to immediately perceived necessities, identified within a specific context such as water provision, health care, and employment (Moser, 1993). PGN in Bangladesh relate to child care, food preparation, fetching water, cleaning of homestead premises, and so on (Chen, 1990). Seclusion of women from production systems and employment opportunities make female-headed households vulnerable.

Strategic gender needs: These are the needs that women identify because of their subordinate position to men in their society and vary according to cultural context. SGN assist women in achieving greater equality, changing their existing roles and thereby challenging women's subordinate position. They pertain to gender divisions of labor, power and control over assets and resources. SGN relates to legal rights, domestic violence, equal wages and women's control over their bodies (Moser, 1993). The husband's kin in many cases control the remittances sent home. Female-headed households have to accept the dominance of the husband's kin in the control of assets and resources (Findlay, 1997). Violence against women is a violation of human rights. At least one in five women around the world has been subject to violence by man at some time in their lives (WHO, 1997). Domestic violence is more or less an accepted phenomenon in Bangladesh. Women rarely acknowledge this problem in public, but rather they take this phenomenon as the husband's right over them. Dowry-related issues are one of the prime reasons for domestic violence against women in Bangladesh (Amin and Cain, 1997).

Gender and social capital

Social capital tends to be gendered in nature, which is also true in Bangladesh. According to cultural norms it is the men who are supposed to maintain the family, but a hidden role of women can be observed, especially in borrowing in kind or borrowing small amounts of money. This practice has increased in recent years. Molyneux (2002) observes that women from low-income groups have the strongest community and kin ties. Development agencies and government programs try to mobilize women using this form of social capital. In view of the development strategy of empowering women, most of the NGO loans are directed towards women, so borrowing from NGOs is mainly a woman's business. Besides, women save their money and lend it to other people on a short-term basis, which is a common practice in the informal economy in rural areas. The income derived from this flows back to the family at the end. Molyneux (2002) also observed that women have less capital and also possess less social capital. Moser (1996) argues that although we hear much about how poverty is alleviated with the help of social capital, poverty also erodes the fabric of social life.

In the quantitative component of this research, borrowing without collateral was the operational definition for social capital. The qualitative component included the collection and analysis from a gender perspective of data on household activities; ownership; property rights; access, control, use, allocation, and management of assets and resources; budgeting and expenditure decisions; food purchase and consumption decisions; impact of benefits; and the dynamics of decision-making.

3.2.11 Temporal perspective

Any issue in social science can be studied from a longitudinal or temporal perspective. When a process that is dynamic in nature needs to be uncovered, then a longitudinal perspective is needed, in which a subject or process is followed through time. "A longitudinal approach is warranted when the researcher is primarily interested in uncovering the dynamics of a process" (Pennartz and Niehof, 1999: 154). Time is an essential element in understanding human behavior as it is rooted in the past and anticipates the future. Hence, there is a temporal dimension to strategies, decision-making, and use of resources. Gender notions also change over time, as do norms and values of the society and the state.

Family household forms develop over time, within a certain context, following norms and values of the society through normative perspectives, obligation and negotiations. Households follow a life cycle or life course, the phases of which are influenced by changes in cultural and historical perspectives.

Time passes and the meaning of that passing is derived from the dynamic associations among human events. Time is not "used" or "spent"; it is paired with action, meaning, and social context to create a meaningful daily time. Time is a proxy for how people allocate effort and experience that effort. Hence its meaning is not uniform or constant (Fenstermaker, 1996: 234).

Engberg (1990) notes that time is an important factor in the use and management of resources. Time is a very crucial factor for households' livelihood sustainability. The time dimension is inherent in the concept of strategy. Livelihood strategies and the livelihood portfolio develop over a period of time and relate to the phase in the household's life course.

Use and management of household resources cannot be assessed by a single look, but require monitoring the process.

The variable of household composition, particularly, plays a double role in relation to household resources, which can only be pictured with the help of longitudinal data. On the one hand household resources have to sustain a household of a given composition, while on the other hand use of labor as a household resource depends on its composition (Pennartz and Niehof, 1999: 153).

Hareven expressed the same view in her classic study: "It is important to realize that a profile of household at a specific point of time obscures the constant movement of family members in and out of different household patterns over their life courses" (Hareven, 1982: 154). She refers to the households in her historical study as "revolving stages on which different members appeared and disappeared, under their own momentum or under the impact of external conditions" (ibid). Pennartz and Niehof (1999) further suggest that insight into household decision-making benefits from a longitudinal view, because decision-making processes evolve over time and the outcomes of former decision-making will influence present and future decision-making processes.

Different sorts of time

Time is generally classified as a non-human resource, but it can also be seen as a dimension of other resources rather than as a resource itself; all activities have a time dimension (Niehof and Price, 2001). Time is socially constructed. It is a basic dimension of individual and social reality. Different societies have different time systems depending on the rhythm of local markets and the regional economic situation (Casimir, 2001).

Different social scientists offer different classifications of time. Hareven (1982) discerns three types of time: individual time, family time and historical time. Elder (1985) notes four dimensions of time that influence the flow of individuals through the life course: life time, social time, family time and historical time. Pennartz and Niehof (1999) argue that there are several sorts of time: historical time, daily time, individual time (age or phase in the life course), and perhaps household time or Hareven's invention: family time.

Family or household time

Family time refers to the ordering of family events and roles by age-linked expectations, sanctions, and options. Hareven (1977: 58) defines family time as the "timing of events such as marriage, birth of a child, leaving home, and the transition of individuals into different roles as the family moves through its life course". Hareven's (1982) discussion of family time and historical time focuses upon transitions within families and attempts to address questions about the timing of transitions (into marriage, childbearing, retirement, and so on). She does this by using two different comparisons: first, the alignment of individual time with family time, and the extent to which individual timetables need to be coordinated; and second, a comparison with timing in different historical periods. This leads her into an argument about the extent to which economic and social structures determine the flexibility available in the timing of family transitions. Family time and individual time are both affected by historical time, the overall social, economic, political, institutional, and cultural changes in the society.

Household time affects labor allocation and consumption as well. Following household time, we can see members ageing, children being born and adult children leaving. Thus, labor and consumption needs change over time as households mature. For farm households the family life cycle acquires its significance particularly in relation to the issue of family labor. Gender plays an important role in household time allocation; men and women are supposed to spend their time on different activities as determined by social norms and values, cultural, political and economic perspectives (Moser, 1993; Niehof and Price, 2001).

Individual or daily time

Individual time is referred to as being made up of the milestones in the life course and is progressive in nature. Individual time and household time are interrelated, as they influence each other. Bruijn (1999) describes the passage of individual time as a biological process with commencement, maturation and decline of physical functions. Individual time is measured by age, marital duration, duration of life, and so forth. Individual time is a marker of stages and transitions in the individual life course (Willekens, 1999).

Daily time

Individual time is also related to daily time, which can be regarded as an individual resource. Daily time includes the labor allocation factor. It is the time that someone has at his or her disposal. The amount of time needed for domestic labor is not only related to the quality of available resources, but also to knowledge, skills and organizational talents. Moreover, if someone does not make use of a certain point of time, it is gone and no longer at one's disposal, as is the case with perishable goods (Casimir, 2001).

Social time

Social time defines the set of norms that "specify when particular life transitions or accomplishments are expected to occur in a particular society or social milieu" (Clausen, 1986: 2), hence, the importance of age at marriage. As Elder (1994: 6) states:

The social meanings of age deserve special attention because they have brought a temporal, age-graded perspective to social roles and events. Social timing refers to the

incidence, duration, and sequence of roles and to relevant expectations and beliefs based on age. Social timing also applies to the scheduling of multiple trajectories and to their synchrony and asynchrony.

Norms and obligations prevailing in society and ruling life change over time. They are crucial for an understanding of the life cycle phenomenon of families. The history of particular relationships and biographical events also shape and restrict the range of choices for a particular course of action (Finch, 1987).

Historical time

Historical time is part of the environment, influencing households. Historical time anchors an individual or family in a social and cultural era. It measures the change across generations and puts family or household time in a historical perspective. In Bangladesh, the political developments since its independence provide the historical context for present-day life.

Life course perspective

The terms "life cycle" or "life course" have been used for several decades in reference to the succession of events or critical stages through which the typical family or household passes during its life span (Glick, 1977). The terms "life cycle" and "life course" are often used indiscriminately – quite surprisingly so in view of the clear distinction most cultures draw between the cyclical and the linear aspects of the experience of time; between rise and fall, birth and death as recurrent events on the one hand, and the irreversible flow of time and life, on the other (Elchardus, 1984).

The family or household life course proceeds along a track of processes leading to the occurrence of a particular life event in a certain context. The life course concept views life as a series of states, transition, events, and processes occurring in life (Willekens, 1992; Berger et al., 1996). Runyan (1984: 82) defines the life course as:

The sequence of events and experiences in a life from birth till death and the chain of personal states encountered situations which influence and are influenced by the sequence of events.

Lives and historical time, the timing of lives and linked lives are studied through the life course paradigm. In short, "life course" may also be seen as a meaningful sequence of events or stages and decisions. The stages of the "life cycle" are influenced by social, cultural, economic, political and historical factors and governed by the norms and values of a particular society. For each stage of a life cycle there usually exist some more or less precise expectations with regard to its duration. The stages of the life cycle are also "timed" or located in time. The passage or transition from one stage of the life cycle to the next is usually subject to some control. The control can have different degrees of severity and can be organized in different ways (Elchardus, 1984; Elder, 1994).

Finch (1987) observes that, in relation to the study of the family, a life cycle approach is too static. A life course perspective is more rewarding because it involves understanding individual and family biographies in relation the specific historical time in which they are occurring. Pennartz and Niehof (1999) see the life-course approach as concerned with the movement of individuals through their own lives and through historical time, and with the relationship of family members to each other as they travel through personal and historical time. The household life course starts upon the formation of household and continues until the exit of the founder.

Gonzalez de la Rocha (1994), using the concept of family cycle, highlights its association with poverty. She distinguishes several stages in the life-cycle of (urban) households: expansion (the domestic unit grows and increases its number of members through birth), consolidation or equilibrium (children are ready to work and participate in the domestic economy) and dispersion (members separate in order to form and organize their own units).

Murphy and Selbey (1985: 352-54) put forward the following model of the domestic cycle:

- Stage 1: Young household heads (age < 45 years) with no children;
- Stage 2: Household in which at least one child under 5 years;
- Stage 3: Households where all children are at least 5 years of age and some are < 15
- Stage 4: Households of parents and adult children (i.e., 15 years of age or over);
- Stage 5: Older people (> 45 years) without children (i.e., raised a family but live alone).

This model shows how the situation in a household changes over the life course. The different stages of the household determine the household livelihood strategies and decision-making and influence the division of labor in maintaining livelihood and food security.

Pennartz and Niehof (1999) distinguish three dimensions of family household: family or social dimension, dwelling dimension and householding dimension. They see household careers developing within each dimension:

1. The family career (family or social dimension),
2. The household composition career (family or social dimension),
3. The housing career (dwelling dimension),
4. The household financial career (householding dimension) and
5. The household economic career (householding dimension).

In this study, the focus is on the household dynamics and strategies as they develop over time, taking into account the time perspectives as described above. I will look at the issues of livelihood portfolio, strategies, decision-making processes and the use of social capital to sustain livelihood and food security from a longitudinal perspective. In this, the household will be the level of analysis. The household dependency ratio was used as a proxy for stage in the household life course in the quantitative part of the research. Murphy and Selbey's model was used in the analysis of the field survey data on the role of the household life course. The issue of historical time was addressed in the interviews with the key informants and in the focus groups.

3.3 Conceptual framework

Based on the theoretical insights from the literature, a model was developed to guide the research and to answer the research questions. It is presented in the Figures 3.3 and 3.4.

The model shows how different environmental factors together with risk factors influence the household livelihood strategies and decision-making processes through time, taking the role of gender explicitly into account. At the center of the model are the household, where strategies are developed and decisions taken to develop and maintain livelihood by means of the livelihood portfolio. Looking at the model from a systems perspective, inputs, throughputs and outputs can be distinguished. Inputs are resources and assets, including social capital, which are impacted by the environment. Throughputs are resource management strategies and decision-making. Outputs are food and livelihood security. The whole framework and the linkages included are placed along a time axis.

Figure 3.3 Conceptual framework for livelihood and food security in rural households

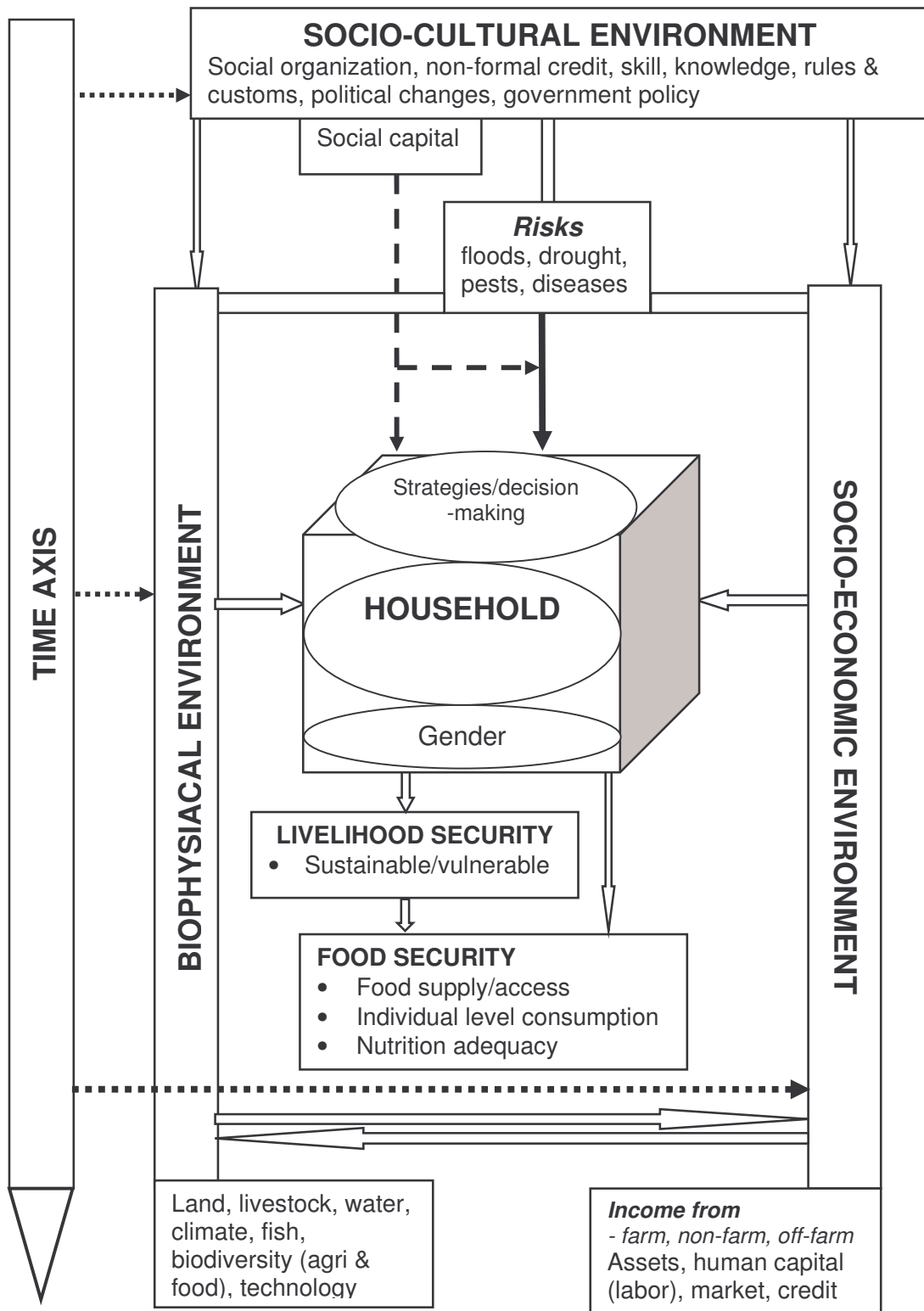
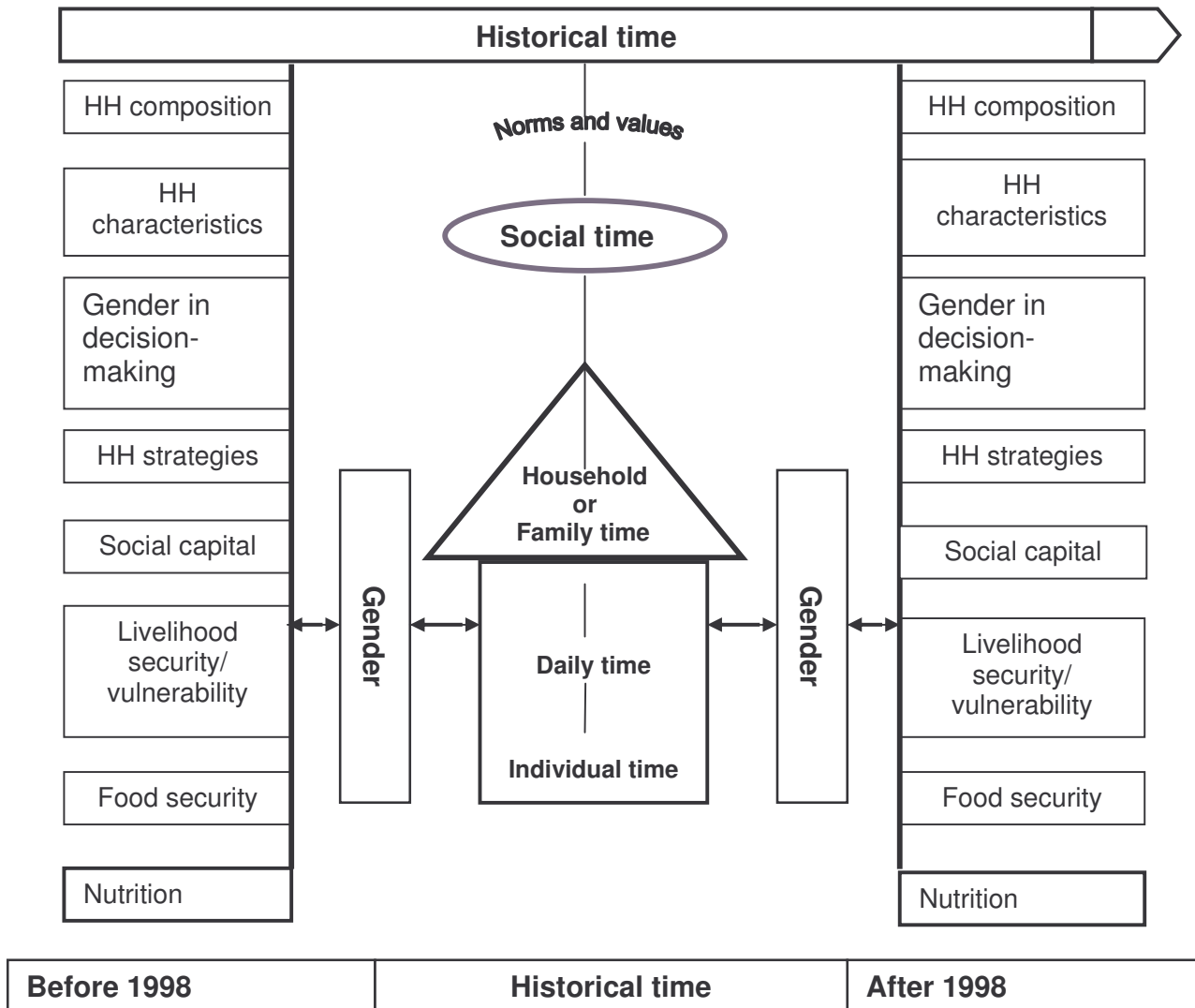


Figure 3.4 Time line analysis



CHAPTER 4

DATA COLLECTION AND ANALYSIS

This chapter first discusses the design of the study. Methods of data collection and analysis are discussed in detail in the following sections.

4.1 Study design

This research uses two types of data: quantitative and qualitative data. The IFPRI panel data that is used is primarily quantitative in nature. This data was collected during 1996-97 (Phase 1) and 1999-2000 (Phase 2). In between these two phases a flood hit the study area. Hence, Phase 1 is termed the 'pre-flood' and Phase 2 the 'post-flood' period. During both phases data can be differentiated into pre-harvest (lean) and post harvest (normal) periods. However, because the periods overlap, the distinction between pre- and post-harvest was not used in the analysis. Data collected by IFPRI will be used to assess daily and household (family) time.

Additional data was collected in the field from November 2002 through September 2003 to complement the panel data as well as to explore in-depth issues relevant to the aims of the research. The additional quantitative data was collected by means of a household survey. The qualitative data was collected through various methods. A qualitative approach consists of four key concepts: flexibility, iteration, triangulation and creation of context (Gittleson, 1996). Flexibility allows for the continuous collection of data to explore and explain the issues as they surface throughout the research period. Iteration is linked to flexibility. It implies increasing refinement and focus in different stages of research. Triangulation allows verifying data collected by different methods using a holistic approach, while creation of context allows the researcher to act freely to switch to different methods as needed (Gittleson and Mookherji, 1997). Methods of qualitative research are: observation, case study, life history, focus group discussion (FGD) and in-depth interview. Observation was conducted to get an insight into the daily and individual time and gendered patterns of time allocation. Collection of life histories provided the dimensions of individual, family and historical time, while individual and family time was highlighted through case studies. FGDs and in-depth interview were used to get an insight into emic perspectives on different issues and historical and social time.

Both types of data will be linked to explain how livelihood strategies and social capital develop over time and what role they play in attaining livelihood and food security or averting vulnerability among the households in the study area.

4.2 IFPRI panel data

IFPRI collected panel data from five *upazils* of four districts in Bangladesh. The *upazilas* are Saturia from Manikganj district, Kishoreganj *sadar* from Kishoreganj district, Gaffargaon and Pakundia from Mymensingh district and Jessore *sadar* from Jessore district. IFPRI surveys covered 1000 rural Bangladeshi households in four survey rounds in 1996-1997 (panel data). The three sites surveyed were: vegetable technology (AVRDC¹/GKT²) in Saturia, group fishponds (ICLARM³/BS⁴) in Jessore, and individual fishponds in Mymensingh (DANIDA⁵/MAEP⁶).

¹ AVRDC – Asian Vegetable Research and Development Center

² GKT - Gono Kallayan Trust

³ ICLARM – International Center for Living Aquatic Resource Management

⁴ BS – Banchte Shekha

⁵ DANIDA – Danish International Development Assistance

⁶ MAEP – Mymensingh Aquaculture Extension Project

Additionally, three rounds of data were collected in Satura *upazila* in Manikganj district during 1999-2000. I used the data collected from 313 households in Satura *upazila* in the Manikganj district, as these households were included in all rounds. The panel data cover a period of five years, including 1998, during which the floods seriously affected all households concerned.

Table 4.1 IFPRI data collection schedule

Phase	Round	Year	Month
Phase 1 (Pre-flood)	1	1996	Late June – mid September
	2	1996	Mid October–end of December
	3	1997	Mid-February – early May
	4	1997	Late June – late September
Phase 2 (Post-flood)	5	1999	Late June – early September
	6	1999	October – End of December
	7	2000	Mid-February – early May

4.2.1 Sampling

Initially, IFPRI conducted a census in the villages in Satura where the NGO GKT had already introduced a technology called the AVRDC technology (called A-villages) and comparable villages where GKT was operating but had not yet introduced the technology (called B-villages). A multi-stage sampling method was followed to select the households.

Three different types of households were selected from two different types of villages:

A households: NGO-member households in villages (A-villages) where AVRDC technology has been adopted and vegetable seeds have been disseminated (technology adapters);

B households: NGO-member households in villages (B-villages) where households are likely adopters of AVRDC technology and GKT (an NGO) will distribute AVRDC seeds in the next phase (technology was not yet introduced but planned to be distributed, i.e., likely technology adopters);

C households: a sample of all other non-adopter households from A-villages (C1 households) and unlikely adopter households from B-villages (C2 households).

A-type of villages were selected from those villages with at least 20 AVRDC adopters. Ultimately, five out of six A-villages were selected. One village was excluded because of the large number of households (576). One hundred and ten households were randomly selected from five A-villages. B types of villages were selected in two stages. GKT gave a list of 14 villages (*paras*) distributed in six unions where they planned to distribute AVRDC seeds. First five unions were selected and then one village from each union was randomly selected (if there were more than one *para* per union). Ultimately 109 households were found to be likely adopters (B households) from these five B-villages. Fifty-five out of 778 non-adopting households (C1 sample households) in A-villages were randomly selected and 55 out of 862 unlikely-adopting households (C2 sample households) in B-villages were randomly selected.

4.2.2 Analysis of IFPRI panel data

Panel data collected by IFPRI were edited and checked for consistency and completeness. Households with incomplete information were excluded from further analysis. In this research, only those households were included of which complete information for all rounds was available.

The statistical program SPSS was used to analyze the panel data. Quantitative data was analyzed by a fixed-effects model (econometric approach). Several statistical measure-

ments such as cross-tabulation, multivariate analysis, and independent sample t-tests were applied. In multivariate analysis, linear ordinary least square (OLS) regression analysis was carried out to elicit the relationship and dependency of different variables on each other. Through independent t-tests the differences between pre- and post-flood situations with regard to resource base, livelihood and social capital were assessed.

The key dependent variables in the IFPRI data, like household food security and individual food security, were measured by taking non-staple calorie intake as the indicator. Individual nutrition of pre-school children (2-5 years) was measured by using the height-for-age Z-score. The variable of social capital was measured by using credit taken without collateral as an indicator. Food vulnerability was defined based on the difference in calorie intake between the two phases and non-staple calorie intake during Phase 2. Determinants of per capita total expenditure and food vulnerability were measured as described below, distinguishing six clusters ($F_1 - F_6$) of independent variables.

Household food security = (Household level per capita non-staple calorie intake)	F_1 (Sex, education, age and age-square of household head, dependency ratio of household, sources of income, average per capita expenditure)
Individual food security = (Individual non-staple calorie intake)	F_2 (Household level per capita non-staple calorie intake, sex, age, height and weight of the household member)
Individual Nutrition = (Height-for-age Z-score for children aged 2-5 years)	F_3 (Sex, age and age-square of the member, dummy for rounds, father's and mother's education, mother's height, Household level per capita non-staple calorie intake, landholding of the household)
Per capita total expenditure =	F_4 (Sex, education, age and age-square of household head, dependency ratio of household, sources of income, social capital and landholding of the household)
Social capital = (Credit taken without collateral)	F_5 (Sex, education, age and age-square of household head, dependency ratio of household, assets, landholding of the household, total household income)
Food vulnerability = (based on equal weight basis by taking the difference in calorie intake between two phases, and non-staple calorie intake during post-flood period)	F_6 (Sex, education, age and age-square of household head, dependency ratio of household, sources of income, per capita total expenditure and landholding of the household)

4.3 Field data collection

Two female field assistants assisted me in collecting qualitative data. The first assistant was a fresh graduate with some working experience in qualitative data collection but she became sick after working for two months. The second field assistant replaced her for rest of the period. She was experienced in working with national and international agencies and with several methods of qualitative data collection. The first assistant later

assisted me as a note-taker during the focus group discussions (FGDs) and during the survey. Four female and two male interviewers were recruited for the survey. Both field assistants were involved in the survey as well as two newly recruited interviewers who were also experienced in administering surveys with national and international agencies. The two male interviewers had a long experience in data collection with BRAC and worked with me in the past. All of them were university graduates.

4.3.1 Observation

Issues like consumption patterns, household decision-making and so on, cannot be dealt with properly by the survey method. Such issues require complementary qualitative approaches, observation being one of them. Observation provides a good opportunity to get detailed and real insight in actual situations including “actions, conversations, and physical descriptions” (Gittleson and Mookherji, 1997). “Science begins with observation and must ultimately return to observation for its final validation” (Goode and Hatt, 1952: 119). Neuman (1997: 361), indicating the importance of observation, writes:

A great deal of what researchers do in the field is to pay attention, watch, and listen carefully. They use all the senses, noticing what is seen, heard, smelled, tasted, or touched. The researcher becomes an instrument that absorbs all sources of information.

My field assistant and I were engaged in systematic observation at the household level on the topics like consumption patterns, resource allocation, management of assets and resources, division of labor, etc. The field assistant followed a household for about seven days to observe the above activities. She followed household members throughout the day using checklists on different subjects. I also made visits to follow up on her observations. Special attention was paid to the gender division of labor, with regard to the household chores as well as farm activities. It was not possible to observe the dynamics of decision-making processes, which is why we addressed the topic through questioning. Daily time use was also recorded during the observations.

4.3.2 Case study

The case study method was employed in the research as well. The case study method is applied specially to answer the “*how*” and “*why*” questions. According to Yin (1984: 23), it is a kind of empirical inquiry which “investigates a contemporary phenomenon within its real-life style context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used.” Livelihood strategies, decision-making processes, use of social capital and so on were issues on which information was collected by using the case study method.

Seventeen case studies were selected with different livelihood situations. These were: households in which the husband had died (two cases); households with a sick husband (two cases); households with a sick wife (two cases); vegetable-cultivator households (two cases); sharecropper households (two cases); a contract laborer; a case of dairy production; a case of crop pest infestation; a case of land mortgaged out; a case of trading and running a grocery shop; a rickshaw puller and a factory worker. The cases were selected to see how the households avert vulnerability and cope with risk and shock through the help of social capital. In addition, issues like vegetable cultivation, sharecropping and cow rearing were included to gain insight into the motives behind taking on these livelihood activities and the role of gender in these activities. The issue of pest infestation was included to see what strategy people take to avert the risk of pest. In all cases multiple interviews were done and follow-up observations were conducted as well.

4.3.3 Life history

The life history method is used to provide the emic temporal perspective. I used the life history method to investigate how social capital is being used to attain livelihood and food security or decrease vulnerability to risks or shocks throughout the life course. Six households from the IFPRI sample (N=313) were selected to provide depth to the IFPRI panel data. Three male and three female respondents were interviewed about their life history. The male participants included:

1. A man whose father died in childhood and who had a long history of hardship (fighting against poverty);
2. A man who is known as lazy and who sold all of his land to sustain his livelihood;
3. A man who increased his wealth over time through the purchase of considerable amount of lands.
4. The female participants included:
5. A widow who is maintaining her livelihood with the help of her children;
6. A widow who has a long history of working and hardship in maintaining her livelihood;
7. A separated woman who has been working for a long time in different occupations, ranging from day labor to factory work, to sustain her livelihood.

To avoid problems, I interviewed the male respondents while a female field-assistant interviewed the female respondents. However, I also briefly interviewed all female respondents in order to check the work of the assistant. As per the rules of life history method we did not interfere while the respondents narrated their life history. All the events of the respondent's life were covered without interference during a preliminary interview. So, at first his/her full life story was recorded, after which I listened to the tape to find out what points should be explored further. Then we asked them to elaborate on the issues that we were interested in. The life narratives were recorded and then transcribed into Bangla. Finalized Bangla versions were subsequently translated into English for analysis.

4.3.4 Focus group discussions (FGDs)

Focus groups are guided but open discussions for about an hour with small groups of 7 to 10 people. A skilled moderator stimulates the discussions focusing on the topic of interest using a set of guidelines. Many issues concern different households in the community, such as women's empowerment (autonomy), social capital, inheritance, dowry, etc. These issues can be discussed in focus groups to elicit the group reaction and general ideas on these vital issues. Eight FGDs were conducted covering the following topics:

1. Kinship (male group and female group);
2. Food security, nutrition adequacy, livelihood security/vulnerability (also a male group and a female group);
3. History of eating (only a female group);
4. Women's empowerment (only a female group);
5. Health and family planning (only a female group); and
6. Gender issues (only a female group).

Focus groups discussions were conducted for 60 to 80 minutes with seven to eight participants. Incentives were provided for the participants and the additional note-taker. When sensitive issues were discussed with the female groups, I left the session temporarily. My assistant then took charge. All FGDs were recorded with a tape recorder and transcribed later, along with the notes taken by the field assistant. All FGD Bangla versions were then translated into English for analysis.

4.3.5 In-depth interviews with key informants

When information is gathered through a series of repeated intensive interviews, using interview guidelines rather than pre-formulated questions, the method is referred to as in-depth interview. In-depth interviews are suited for eliciting perceptions, motivations and feelings (Scrimshaw, 1990). An advantage of the in-depth interviews with key informants was that I could discuss many issues confidentially, issues which could not be discussed in other ways. I used an open-ended checklist. It was not possible for me to judge beforehand whether the key informants were knowledgeable, informed and open to discuss relevant issues. Occasionally, the information provided by key informants contradicted our observations, my knowledge about the society under study, the opinion of other key informants and FGD's outcomes. All the interviews were recorded and later transcribed.

Several key issues were covered by the in-depth interviews. I selected six key informants for in-depth interviews, three male and three females. Male key informants included a farmer, a law assistant, and a retired schoolteacher. Female key informants included one housewife, also working as BRAC health worker, one social worker, and a retired family welfare visitor (FWV).

4.3.6 Qualitative data analysis

Qualitative data collected through different qualitative methods such observations, focus group discussions, case studies, life history and in-depth interviews were subject to contextual analysis. All the data collected through qualitative methods were at first transcribed in Bangla then translated into English.

4.3.7 Additional survey

A household survey was undertaken in July 2003 to elicit data on some crucial issues missing in the IFPRI survey. Background information was needed on different topics such as kinship relations, water and sanitation facilities at the household level, health facilities together with health-seeking behavior, family planning practices, and migration.

A total of 300 households were surveyed in the additional survey. Thirty villages/*paras* adjacent/near to the IFPRI survey villages/*paras* were selected purposively. As I was already working with the respondents of the IFPRI survey villages/*paras* for the qualitative data collection, I skipped the IFPRI villages/*paras* to avoid duplication in data collection. Households with at least one eligible couple for family planning were the criterion for the selection of households. The first household of the village/*para* while entering that village/*para* was the starting household, and then the next household with an eligible couple was taken. In this way 10 households were interviewed in each village.

The survey data collected in the field was edited, coded and entered in the computer. Then the data was checked for consistency and completeness. The SPSS program was used to analyze the data and do cross-tabulations.

4.4 Linking quantitative and qualitative data

Quantitative and qualitative findings were inter-linked at the end of the analysis. Qualitative findings are used to give meaning to the quantitative findings, explain the gaps, and for drawing conclusions and formulating policy options. Subjects covered in qualitative data collection includes long-term intergenerational transfers, the short-term impact of policies, household strategies and coping mechanisms, livelihood strategies, food security and vulnerability, gender roles and the use of social capital. These effects were placed against the background of secondary data on macro-level ecological, demographic, economic, cultural and socio-political changes during the period under investigation. In addition, secondary data was analyzed. These were data from the World

Bank (WB), the Bangladesh Bureau of Statistics (BBS), the Bangladesh Rice Research Institute (BRRI), and the Gono Kallayan Trust (GKT) (comprising publications, leaflets, and discussions).

4.5 Time schedule of the research

The study was initiated in September 2001 and completed in October 2003. As noted, IFPRI panel data was collected during 1996/97 and 1999/2000, prior to my study.

Date	Activities
September 2001 – June 2002	Proposal writing and attendance of relevant courses at Wageningen University and Research Centre.
July 2002	Initial fields visit and visa processing for USA in Dhaka.
August 2002 – October 2002	Stay at IFFPRI, Washington, for analysis of the IFPRI panel data.
November 2002 – November 2003	Field data collection, further analysis of IFPRI data, preliminary analysis of survey data, and writing of the introductory chapters.
1. November 2002 – September 2003	1. Observations
2. January 2003 – September 2003	2. Case studies
3. April 2003 – September 2003	3. Life histories
4. May 2003 – June 2003	4. FGDs
5. May 2003 – July 2003	5. Prepare and conduct additional survey
6. July 2003 – August 2003	6. Data editing, coding, entry of additional survey, and preliminary analysis
7. August 2003	7. Further analysis on IFPRI panel data
8. September 2003	8. In-depth interviews
9. June 2003 – November 2003	9. Writing of introductory chapters
December 2003 – July 2005	Analysis of both quantitative and qualitative data, and writing.

CHAPTER 5

LIVELIHOOD SECURITY AND VULNERABILITY

This chapter discusses the issue of livelihood security and vulnerability in the contexts of time, gender, and social capital. In the first part of the chapter I will discuss the composition of the livelihood portfolios. In the second part I will present a number of cases that illustrate people's livelihood activities and strategies. The third part of the chapter comprises a quantitative analysis of livelihood determinants (IFPRI data). The subsequent section looks at the effects of the 1988 floods on livelihood portfolios. The last part of the chapter deals with decision-making and changes in livelihood strategies in the context of social change.

5.1 Livelihood portfolio

The context of livelihood

Households perform various activities to gain and maintain their livelihoods. The nature of these activities depends on the availability of assets, resources, labor, skills, education, social capital and gender. Within a household, members perform different activities in accordance with their culturally defined gender roles and age. Men in Bangladesh are mostly involved in the productive sphere, while women are involved in both productive and reproductive activities, though their productive role is not well recognized.

Survey data indicate that only 35 percent of the households are involved in farming (crop and livestock) and that in 18 percent of the household members are involved in work such as a farm laborer. During the last decade, livelihood (income) diversification has occurred (Table 5.1). Non-farm activities and new activities related to farming recently came into being. During the last decade an increasing number of people became involved in non-farm labor activities. New activities like rickshaw and van pulling are of increasing significance with the development of road networks. Trade is also taking an important position as a source of livelihood. All this helps to avert the poverty experienced by many of the landless poor families. About one-third of the household heads have a second source of income. These alternative sources of income are very crucial in averting vulnerability and attaining livelihood security.

Household heads are usually the main breadwinner, but other members are also involved in income-earning. Thus, the occupational status of household heads does not necessarily reflect the real economic condition of the household. Sometimes the elder father or grandfather is the household head despite the fact that he is not earning an income, but because his dominance in household decision-making and resource allocation is very crucial. He controls the assets and resources and distributes the duties among the household members.

Farming

Farming is the key to food security as well as livelihood security. Rice is the main produce in the area followed by wheat, vegetables, potato, mustard, onion, pulse, and more recently maize. High-yield varieties of BRRI rice (mostly BR11, BR 29), a few local varieties and hybrid varieties are cultivated in the *upazila*. People usually cultivate their own land but many sharecroppers are cultivating on the rich or absentee land owner's land. Renting in and out is common in the area.

Cultivating on own land: There are three types of farmers in this category. The first consists of rich farmers who never cultivate their own land but leave this to a paid supervisor and hired laborers. The second group comprises those who are physically involved in cultivation along with hired laborers. The third group consists of small-scale farmers who do not have the ability to hire paid labor. Land is crucial for production, but about 40 percent of the households are landless and another 39 percent possess less than half an acre of land. Thus, it is not possible for these households to rely solely on the production from their own land.

Table 5.1 Sources of income of the household head

Occupational pattern	Primary source		Secondary source	
	No.	%	No.	%
A. Depending on agriculture				
Farming (crop)	72	24.0	21	7.0
Farming (livestock)	3	1.0	5	2.7
Sharecropper/mortgaged land	9	3.0	22	7.3
Farm laborer	28	9.3	26	8.7
B. Depending on other occupations				
Trade	45	15.0	6	2.0
Services	30	10.0	-	-
Non/off-farm labor	24	8.0	7	2.3
Self-employment				
Rickshaw/van puller/tempo Driver	49	16.3	4	1.3
Tailor/carpenter/mason/goldsmith/mechanics	27	9.0	8	2.7
Unemployed/retired/disabled/Beggar/jobless	13	4.3	1	0.3
No secondary source of income	-	-	200	66.7
Total	300	100.0	300	100.0

Sharecropping: There are three types of sharecropping. The first type involves production of rice with irrigation. In this case the owner has to share the cost of water and fertilizer, and the produce is divided equally. Alternately, a third party gets involved in irrigation and the owner, sharecropper, and the pump-owner get equal shares. The second type involves cultivation of deep-water rice where the owner does not pay any costs and gets one-third of the produce. The third type is found in other types of crops (fruits and vegetables) where the landowner has to share half the cost of fertilizer and pesticides and gets half of the produce.

Renting-in and renting-out land: In the past, the renting-in and renting-out of land were rare. In recent years, the practice of renting-in and renting-out land has been increasing. There are two types of systems: short term and long term. The short term system involves one crop period only, while the long term system lasts for one to five years. This system is also known as *kot* (enjoying land for money).

Mortgaging of land: Land mortgaging is very common and at times of crisis or need many people have to mortgage their land. Specially collecting money for a daughter's marriage, having to pay for medical costs or overseas migration are reasons for mortgaging land. At present people prefer to mortgage their land instead of selling it because once land is sold it

is difficult to purchase it back as the price of land is increasing. The person who takes the land on mortgage enjoys that land until the mortgagee returns the money. Rich or absentee people or even women take land on mortgage and hand it over to a sharecropper or rent it out for cultivation. The purpose of renting land is to avoid sharecropping, while mortgaging land is to collect more money at times of need.

Assets

Land is the main asset for the people in the study area. In the past, land was the main indicator for livelihood security and well-being. In recent years, the situation is changing; people still see “land” as the basis for livelihood security, but people are now also investing in building houses, preferably a brick-built one.

Livestock rearing

Liquid assets like livestock and poultry still occupy a major role in risk management, as well as being a source of livelihood security. Because of good marketing opportunities due to the presence of Milk Vita and Aarong Milk, livestock rearing is increasing in and around the study *upazila*. Manikganj district meets about 25 percent of the milk demand of Dhaka city. Cow rearing and fattening for sale during the Eid-ul-Adha festival is another reason for the booming livestock sector. Shared livestock rearing is very popular in the study area. Different poultry and livestock have different arrangements for shared rearing.

Shared poultry rearing: Only hens are reared in a shared rearing system. The off-spring is equally divided between owner and rearer. Ducks are occasionally reared on a sharing basis. Women and girls are mostly involved in this type of job.

Shared goat rearing: Like poultry, only female goats are reared. The off-spring is equally divided between owner and rearer. Women and girls are involved in this type of job and sometimes the young boys also get involved.

Shared ox rearing: Many poor people are involved in this type of rearing. Profits are divided equally after deducting the purchase price of the ox. Sometimes the owner also takes a share in the costs for fodder.

Shared cow rearing and dairy production: At present, this type of rearing is rare because of the problem of keeping the accounts of sold milk produce. In this case, the owner purchases a cow with newly born calf. The yields of the produce are equally distributed among owner and rearer. The first calf belongs to the rearer and the second one to the owner. Though shared livestock rearing is still in existence, this system is decreasing with the introduction of NGOs. Many people formerly engaged in shared rearing have stopped because they feel it is less profitable. Instead, they take a loan from NGOs to buy livestock of their own, but there is a risk of livestock becoming ill or dying while the loan still has to be paid back. Therefore, a few poor people still prefer shared rearing to avert this risk.

Money lending

There are several reasons for providing or taking loans. Loans are taken for production, to maintain the family (consumption), to marry off one's daughters, for medical treatment, to bear the costs of migration, etc. Different types of money-lending systems can be observed in the study area, like in other parts of Bangladesh. These are:

Individual money lending: Individual men and women also give loans to a person they know. This person may be a relative or a neighbor. The loan may be with or without interest.

Whether the loan should be made with or without interest depends on the personal relationship. Men give loans openly, while money-lending women sometimes hide their identity. Individuals play a key role in the money-lending business although they are not sufficiently recognized in the literature. Informal groups and individuals provide loans for consumption and production purposes, and to repay the NGO or bank loans.

Group-based informal money lending: Recently, women and men have been organizing separate groups where ten to twenty individuals save money on a weekly basis to raise a fund. This fund is used to provide loans to the group members and non-members of the same village; the group rarely provides loans to non-villagers. This system developed following the activities of NGOs. The groups follow the same system as the NGOs, but they are more tolerant in case of default. They allow additional repayment time for the borrowers during pre-harvest months (March-April and October-November) or in case of adverse circumstances. But the borrower has to pay the overdue as soon as possible. To borrow from the group, the borrower needs to have a good relationship with all group members. The interest rate is about fifteen percent. The number of these groups is increasing.

Money lender: The history of money lending dates back to the Hindu *mahajans* (money lenders) who used to lend money on the basis of collateral. There are some recognized money lenders working in the area. These types of money lenders charge the highest rates of interest, varying from thirty to forty percent.

NGO: in Bangladesh NGOs play a major role in providing loans through micro-finance programs. In the beginning, the NGOs directed their activities at men but later shifted to women. Only women from poor households are eligible for NGO membership. The size of loans ranges from 1,000 to 10,000 taka. Every member has to save money on a weekly basis and only members are eligible for loans. However, the NGOs generally do not cover the very poor (bottom 10 percent) households. At present a few NGOs are running programs for the ultra poor. BRAC recently introduced a program for the ultra poor, providing them with 3,600 taka for free as seed money. The Grameen Bank also provides loans to beggars. Since 1987, BRAC has also run an Income Generating for Vulnerable Groups Development Program (IGVGDP). Through this program only vulnerable women (widows, divorcees, women with a sick husband) are provided with 30 kilos of wheat for 18 months. During this 18 month period BRAC provides them with training in different areas such as stitching, poultry and cocoon rearing. NGOs are also providing loans to small entrepreneurs, varying in size from 50,000 to 500,000 taka. The program aims to develop micro-enterprises and create employment opportunities for the poor.

Bank: Commercial banks provide loans on the basis of collateral, the main collateral being land. These banks cater the middle classes and the rich. Sonali Bank and Bangladesh Krishi (Agricultural) Bank provide loans to people ranging from the lower middle classes to the rich, also taking land documents as collateral. Recently, as a special government initiative, the Agrani Bank has been providing loans for goat rearing that require no collateral.

Duration of loan period: Loan terms vary. Most of the short term loans are for consumption and production (farming). Farmers used to take a loan for one-crop cultivation. For this type of loan the borrower has to pay an interest of 37.5 kg of paddy per 1,000 taka loan. The borrower pays the interest on the basis of the frequency of harvesting.

Rural Industries

Numerous industries (steel industries, brick-fields, tobacco, textiles, garments, NGO-based cottage activities, etc.) have been established in and around Satura *upazila* in recent years. This has offered the people in the research area locally available livelihood options and has opened opportunities for home-based work in these industries in combination with agriculture.

Rural and peri-urban commerce

Due to improved communication with the industrial zone of Dhaka and the district headquarters, people of Satura have been able to build rural livelihoods around commerce. In recent years, commercial vegetable cultivation and poultry industries have grown rapidly. A number of households are involved in trading vegetables to the district headquarters and Dhaka directly. Additionally, the supply of milk and milk-products to Dhaka city by Milk Vita, Aarong Milk and private entrepreneurs is a good example of rural and peri-urban commerce. Around 30 percent of the milk and milk products are supplied from Manikganj district to Dhaka city, in which Satura plays a vital role. Some NGOs provide credit for self-employment which allows people to take up trading.

Migration

People usually avoid migration as long as possible because migration entails leaving home, kin and community. Moreover, they often prefer the calmer and cleaner environment of the rural area where they were born and brought up, though at the cost of a smaller income. Migration in the study area occurs in three forms: seasonal, urban and off-country. Seasonal migration is predominant among the poor, urban migration is predominant among all classes, while off-country migration is predominant among the middle to upper middle class people as it involves a huge investment which poor people cannot afford.

Seasonal migration: Seasonal migration is a crucial way of achieving and maintaining livelihood, as well as a way to cope with natural disaster. Around thirty percent of the household members in the sample tend to migrate temporarily during the harvest season to the nearby *upazilas* of Dhaka district to sustain their livelihood, collecting paddy to attain household food security. They migrate in groups for a very short period of time (15 to 30 days per year), mostly during April for harvesting summer crops. The few who are very needy do this twice a year. Members of the groups are mostly relatives, neighbors and friends. If people do not find suitable persons to accompany them they do not go. Through this type of migration, a person gets about 295 kg of paddy per season on average.

Migration to more distant districts is currently decreasing. Thirty years ago people would migrate to the remote northeastern districts, but now they do not migrate to those areas anymore. Instead, people from the northern districts like Sirajganj and Nilphamari come to the study area to find work during the summer harvest season. One elderly person said:

In the past we did not have enough food production in our area so we had to go to far-away districts like Netrokona, Sunamganj and Sylhet. Now the situation is far better than in our times, so the young people do not bother to go far to earn their livelihood. Now there is a lot of work in and around our upazila and people from other districts are coming to our area for work. Still, many of our people are also migrating to the neighboring upazilas of Dhaka district for work. Our people are getting better returns there so they prefer to work at Dhaka. In the meantime, we are facing a shortage of labor for harvesting crops in our own upazila. People from other districts from the northern part are working in our upazila during harvest.

Simultaneous in- and out-migration is going on in the study area. People from the study area temporarily migrate to Dhaka district, while people from the northern parts of the country come to the study area and work on a wage labor basis. People from the study area migrate and work in the Dhaka district on a contract basis to harvest paddy. This work is more profitable than working in the study area as they can earn much more than the per day labor wage. Besides, they get paddy which they bring home and use for personal consumption.

Labor-market dynamics play a role in seasonal in- and out-migration. People from the northern part do not have access to Dhaka district so they are bound to work in the study area while people from the study area have a good connection with farmers of Dhaka district through long-term networking, which is helping them to take advantage of the labor situation. The food obtained through seasonal migration is all for household consumption, so they are dependent on cash for commodities other than food (rice). Additionally, a few people migrate temporarily to Mirpur, Dhaka, during the flood season to work in sand-digging from boats. Others migrate temporarily to Dhaka during times of crisis or work there during off seasons, when work in the fields is not available.

Urban migration: Many families and individuals have already migrated to the cities, mostly leaving behind their parents. Members from a few households in the study area work at Savar, Dhaka, and other cities. A few household heads work in Dhaka or other districts, leaving their families in the study area. Recently, the migration of young girls has become more pronounced because of the rapid growth of apparel factories and export-processing zones.

Overseas migration: Overseas migration is increasing. Around five percent of the households in the study area have members who are working as unskilled or skilled laborers in countries like Saudi Arabia, Malaysia, Singapore, Korea, etc. These migrant laborers are working overseas for a period of only a few months to ten years. Overseas migration is relatively new to the people of the study area. Most of the migrants are related to those who migrated earlier (chain migration). The remittances sent by the migrants are used for repaying loans, to maintain the family, buy livestock and land, trade, and build houses.

5.2 Livelihood strategies

The quality of life in rural Bangladesh depends on the ability to pursue a range of livelihood strategies. People are involved in different activities to make a living and maintain their livelihood, providing them with a diverse livelihood portfolio. In the following section, different livelihood strategies are exemplified by different cases.

Case 5.1 Crop pest infestation

Mihir is a 46 year old farmer. He is the father of four daughters and a son. His eldest daughter's husband (son-in-law) works in Singapore, his second daughter's husband (son-in-law) and his own son work in Saudi Arabia. His son followed his brother-in-law. Mihir's father passed away and his mother lives now with him. He has 3.50 acres of land. Of this land, 0.20 acre is planted with bamboo bush. He needed 150,000 taka to send his son to Saudi. He managed 50,000 taka through mortgaging a 0.83 acre portion of his land and the remaining 100,000 taka was borrowed from his eldest daughter's husband.

He cultivates 1.16 acres with IRRI rice (BR3) during the January-May season, which he describes as follows:

For this type of rice I do not use any pesticide. During the August-December season I cultivate BR11, which is susceptible to pests. This crop is affected by pests, so I have to use pesticide. Despite the fact that I use pesticide regularly, some of this crop is always damaged. I have to use pesticide after 20-25 days starting from the day of sowing the seedlings, but last year I found those who sprayed pesticide in time were also affected by the insect so I sprayed the pesticides too late (after 35 days). As a result, my field/crop was badly damaged compared to others. I know I had to use this pesticide earlier, but I saw those who used pesticides earlier also got infested with insects so I delayed.

He learned about the use of pesticide from Aziz, who is the pioneer user of fertilizer in the village. Aziz learned all this from the agricultural block-supervisor, who used to visit him regularly and advise him from time to time, as Aziz is one of the big farmers in the village. His house and lands are along the roadside, so the block-supervisor brings officials from the agriculture department to visit Aziz to display/show the supervisor's performance. They never visit people like Mihir. Mihir not only got information from Aziz, but the pesticide and fertilizer dealers also suggested that Aziz use pesticides. Then he added:

BR11 rice need less fertilizer compared to BR3 (BIRRI rice). This rice needs a lot of rain, but rain causes more pest attacks. The more rain, the more pest attacks. In this cultivation we cannot use pesticide twice, as flowering occurs before using. We have to use it once. If we use it twice then it will lead to a decrease in production. We came to know about the use of pesticide for BR11 rice twelve years back.

He also cultivates vegetables on 0.66 acre of land. Five years ago the Gono Kallayan Trust (GKT) approached him and wanted to help him with AVRDC seeds, but they wanted one-third of the production so he refused to take their help. He produces leaf amaranth (*lalshak*), Indian spinach (*puishak*), stem amaranth (*dantashak*), radish, cabbage, cauliflower, etc. He reports the following about the use of pesticides in vegetable cultivation:

In 1989 I grew vegetables for the first time. Then pests attacked my crops but at a low level. The attack of pests is increasing day by day. At present, vegetable cultivation needs a lot of pesticides compared to rice. For green leafy vegetables, like Indian spinach and leaf amaranth, I have to apply pesticides after every seven to eight days. We have to be very careful and alert. If we are a bit lazy and do not apply pesticides in time the whole crop will be ruined. When we cannot control a pest attack by using pesticide we uproot the vegetables that are badly damaged. For cabbage and cauliflower we apply pesticide after every fifteen days. For radish we have to apply pesticides only once. If we do not spray pesticides the wholesalers will not buy our produce and we will loose out.

He also cultivates cucumber, lady's finger, and snake gourd (*chichinga*). For this type of crop he has to apply pesticides after every 15 to 20 days. When any pest attacks vegetable crops the wholesalers will not buy that crop. They then have to sell those vegetables in the local market. For this they have to harvest those crops themselves and they have to sort out good ones from infected ones. He never applies pesticides for chili and Indian spinach. Chili plots are usually not attacked by the pests. Sometimes he uses ash for chili plants but not for Indian spinach.

Case 5.2 Pioneer in vegetable cultivation

Musa is a fifty-five year old vegetable cultivator. He has three sons and two daughters. He has married off both of his daughters. His eldest son is in Korea, the second son is at

secondary school and the youngest son is a ninth-grade student. He had 2.50 acres of land and seven cows. To send his son overseas he sold 0.90 acre of land and five cows. It cost 320,000 taka to send his son to Korea. He had to borrow 200,000 taka. He borrowed 100,000 taka without interest from relatives and repays them by selling land and cows. He took 100,000 taka with interest from other persons. He repaid them after his son sent money from abroad. He is having problems with cultivation as he sold his cows to repay debts. He says: "It is very difficult to plough land without cows. With a tractor, land cannot be ploughed properly like with cows, so I am seriously thinking of buying two cows again for ploughing."

He is the pioneer vegetable cultivator in the study area. He has cultivated vegetables on a commercial basis since 1971. He built his house on agricultural land so he has one acre of land adjacent to his household premises, which stimulated him to go into vegetable cultivation:

I had one acre of land adjacent to my house. Vegetable cultivation needs a lot of labor. Previously my son, daughters and wife helped me in vegetable cultivation. As the lands are next to my house everyone helped me. My wife and daughters helped me, though during those days women did not work in the field. They used to irrigate the land. At first we used a tube well to irrigate the land but later on we used shallow pump. We needed to irrigate by hand during the seedling stage as running water could not be used; rather, we had to sprinkle the water in the field. All of us, including my daughters and wife, did these things.

Recently he has reduced vegetable cultivation drastically as he is suffering from a labor shortage since his daughter got married and his eldest son is in Korea. He is now growing vegetables on a small scale:

In the village, we were the pioneer and grew a variety of vegetables. Now I am getting older, my eldest son is away and other sons are studying. The cost of labor is high and sometimes it is difficult to find labor, while the labor exchange system is in decline. In the past there was no shortage of labor. So I have to reduce vegetable cultivation. I was always in favor of rice cultivation but my eldest son preferred vegetable cultivation. Whenever he sends mail or calls me over the telephone from Korea he urges me to grow vegetables, but this is easy for him to say but difficult for me to do. I told him that when he is back we will cultivate more vegetables again. Earlier I only cultivated some IRRI rice and the rest was vegetables, now I grow more IRRI rice and less vegetables.

Musa cultivated vegetables like cucumber, leaf amaranth, stem amaranth, *jhinga*, and Indian spinach. He knows that vegetable cultivation is twice as profitable as rice. Field workers from the government agriculture department used to visit him and advise him on different issues. When GKT came to work in their village he and his wife became members and received training and seeds from GKT. He won awards at various vegetable exhibitions. GKT urges him to grow more green leafy vegetables like spinach (*palangshak*), kang kong (*kolmishak*), lady's finger, cauliflower, cabbage, etc. Nowadays he no longer cultivates kang kong because of marketing problems. He also stopped cultivating turnip. He continues to grow leaf amaranth, stem amaranth and spinach, and grows carrots, potato, onion and garlic for his own consumption only. He now grows vegetables on a small scale, and no longer receives assistance from GKT. This year he cultivated BR3 rice on 0.70 acre of own land and another 0.60 acre on a share-cropping basis. He cultivated only 0.44 acre of vegetables.

Case 5.3 Recently involved in vegetable cultivation

Rahim is 35 years old. He has two sons. The eldest son is twelve years old and a sixth-grade student and the youngest son is only three years old. His father was a poor man and a farm laborer. It was difficult for his father to maintain his family so Rahim had to work as a *rakhal* (contract laborer) when he was only ten years old. He worked as a *rakhal* for nine years. He then left that work and worked as a farm laborer for two years. While he was working as a farm laborer he was married in 1988. In 1990 he became a *rakhal* again and worked for two years. In 1992 he purchased his present homestead land with 5,000 taka from the savings of his job as *rakhal* and built a house of his own. Then he became a farm laborer. During that time he would migrate seasonally to Dhaka for harvesting paddy for 20-25 days and got 750 to 937.5 kg of paddy per season. In 1994 he purchased 0.07 acre of land with 8,000 taka adjacent to his homestead. He grew vegetables and started his career as a vegetable trader, but his effort failed and after two seasons he worked again as a farm laborer. Beginning in 1992 he would migrate to Dhaka during the flood season to work as a laborer on sand boats. He worked there for four years and saved around 30,000 taka from this work. In 1996 he purchased another 0.05 acre of land with 15,000 taka and took 0.15 acre of land on mortgage with 12,000 taka. He grew both rice and vegetables. He received 563.5 kg of paddy last year.

In 1996 he began cultivating lady's finger on 0.15 acre of land. That was the start of his commercial vegetable cultivation career. Prior to this, however, he cultivated 0.02 acre of land adjacent to his homestead. He was also engaged in cow rearing on a sharing basis. In 1997 he started lady's finger cultivation. Since then he has been cultivating lady's finger except for three years (1999 to 2001) when he was unwell. He was seriously hurt as he fell from a straw heap at his uncle's house during piling straw on the heap. When he was injured he used all his savings and had to sell his two cows.

He has grown cucumber since 1998. The first two crops failed. This year (2003) he has grown cucumber again on a sharecropping basis and the output is rather disappointing. He invested 5,000 taka and got 6,000 taka in return after the division of shares. At present he grows eggplant on a sharecropping basis. He has been harvesting the vegetable since April 2003 and will continue harvesting it for the next year. He has also cultivated lady's finger since May 2003 and will continue to do so until October. Additionally, he has also cultivated BR3 rice in 0.15 acre of land. He prefers vegetable cultivation over rice but he grows rice because of the traditional belief that every farmer should produce rice for his own consumption. This year, for the first time, he has cultivated sugarcane with beans on 0.15 acre of land. He will use the remains of the bean plants as fodder. He is cultivating sugarcane because it is a cash crop. The type of sugarcane he cultivates is eaten raw and not used for producing sugar.

His wife takes care of the cattle and eggplants but not the plots with lady's finger because lady's finger causes serious itching on the hands and body after picking the vegetable. Neighbors help him pick eggplant in return for vegetables but not lady's finger, not even for payment. He uses gloves to pick lady's finger. He prefers vegetable production for various reasons, as he explains:

Vegetable cultivation is more laborious than rice but I do not mind. Vegetables give me two times more profit than rice. It gives a constant flow of income so I can purchase the essentials I need. I have work the whole year round almost every day, so I do not have to go to work for others. While I am weeding I get grass that I can feed to my cattle, doing two things at the same time: weeding and collecting grass for the cattle. Now I am still not fully cured and cannot take heavy weight and work very hard. I grow only those

vegetables that need constant labor but not hard labor, so I can bear constant but less exhaustive labor.

He started vegetable cultivation after observing the neighbors who were doing this. He brought vegetable seeds from GKT once but the terms and conditions of GKT were not suitable for him so he detached himself from GKT. He is not involved with any NGO and has never taken any loan from them because he is afraid of having to pay weekly installments. However, when he was sick he got support from his maternal uncle for whom he was working on the day he got hurt, but not from his brothers and parents, nor from his neighbors, as all of them are poor.

Case 5.4 Sharecropper

Majid is a 57 year old sharecropper. He has three sons and three daughters. All sons are married. The eldest and the youngest sons stay with him. His eldest and second daughters are also married. The youngest daughter is in the fifth grade. He has 0.99 acre of his own, 0.26 acre from mortgage taken, and sharecrops 1.43 acres. His two sons who live with him help in cultivation. They also work as laborers on the land of others and in a brick-field. They also migrate seasonally for harvesting in Dhaka together with their father. He cultivates vegetables on his own land but not on the sharecropping land as the sharing of profit seems difficult to him.

Majid has banana planted on 0.35 acre of land. This land is under contract for four years for banana cultivation. For a banana plantation, the owner has to share half of the cost incurred for fertilizer and insecticides and also gets half of the production. Two years ago he invested 5,000 taka for the banana plantation and last year he sold bananas worth 14,000 taka. This year the price is lower, so he is expecting less profit.

He also cultivates sweet potato on 0.30 acre of land. For this type of cultivation the owner has to share half of the cost incurred for fertilizer and insecticides and also gets half of the production. He produced 562.5 kg of sweet potato this year then cultivated jute on the same land. In this case the owner did not bear any cost but got half of the production. He produced 187.5 kg of jute and 20 bundles of jute stick. He also cultivated BRRI rice (BR29) on 0.78 acre of land. For this type of cultivation the owner did not share any cost. Irrigation is provided through pump owners, so one-third of the production belongs to the pump owner as cost for irrigation. The rest was shared between the owner and sharecropper. He had to spend 900 taka and got 375 kg of paddy. Last year (August-November) he produced BRRI rice (BR11) and the owner did not bear any cost but got half of the production. He spent 600 taka and got 562.5 kg of paddy.

Majid took a mortgage of 0.26 acre of land three years back. He cultivated BR11 last year and jute this year. On his own land he cultivates vegetables like lady's finger, snake gourd, *jhinga*, gourd, sweet gourd, and cucumber. He produces vegetables because they are cash crops. He sells the produce in the market and uses this money to purchase day-to-day consumable goods (like fish, pulse, betel leaf, etc.)

Case 5.5 From sharecropping to mortgaging land

Sajid is a 52 year old sharecropper. His father died when he was seven years old so he was raised at his maternal grandfather's house. Once grown-up, he served as a *rakhal* (contract laborer) at his grandfather's house and then at another house. He worked as a *rakhal* for twelve years and worked as a pump operator at Savar, Dhaka for four years. He married in 1978 while working at Savar and has five daughters. The eldest daughter was married four

years ago and the youngest is one year old. The other daughters are at primary school. His only son was the eldest child but he died when he was only seven years old. His only son was born while he was at Savar. In 1980 he returned to his village. Here he started his career as a sharecropper. He did this because he preferred to work independently rather working as farm laborer. When he started his career as a sharecropper he had no land except for his homestead. Now he owns 0.13 acre of land and has taken an additional 0.50 acre on mortgage. In 1995 he took 0.17 acre on mortgage with a loan of 8,000 taka from BRAC. In 1998 he took 0.33 acre on mortgage with another loan of 8,000 taka from BRAC.

At present, Sajid is more interested in taking out mortgages than sharecropping. For the last five years (1995-2000) he cultivated an extra 0.80 acre, but he gave up those plots in 2001. He says:

Sharecropping is no longer profitable. For example, the cost of paddy grown through sharecropping is 250 taka per 37.5 kg, which is almost the same as the market price. I used to cultivate more land through sharecropping. Now I am leaving this venture because it is becoming less profitable. If I cultivate my own on mortgaged-in land then all crops grown on the land belongs to me. I do not have to share this with others. While practicing sharecropping I have to take laborers at my own expense and that makes sharecropping less profitable. When I cultivate on my mortgaged-in land, all crops grown on the land belong to me but the money invested to take land on mortgage remains intact.

He never grows vegetable on a sharecropping basis. His argument is that it is difficult to share the profits with the land owner as vegetables are harvested over a longer period of time on a small-scale basis and not worth sharing the profits. He cultivates vegetables on one piece of land owned by other people. He gets cultivation rights by providing labor on another piece of land of that person in return for growing rice.

Sajid grows long beans on his own land while he cultivates BR29 rice from January to May and BR11 from June to November on land taken on mortgage from other people. In 2003 he cultivated only 0.42 acre on a sharecropping basis compared to 1.22 acres in 2000. He cultivates his maternal uncle's land on a sharecropping basis. These are low-lying lands so he cannot grow mustard there but grows BRRI rice (BR29 and BR11) instead. Last year he took a 50,000 taka loan from a local money lender and invested it in potato seeds. From this venture he made a profit of 15,000 taka.

Case 5.6 Land mortgaged out

Bashir is 65 years old and a relatively well-off farmer. He owns 2.75 acres of land. He has three sons and two daughters. The daughters are already married. His eldest son Rahman went to Malaysia but failed to stay there. He was back in March 2002. He is not willing to work in Bangladesh and wants to go to overseas again. Bashir tried to convince Rahman to stay but failed. Rahman argues that he is educated and that it is not possible to find a good job in Bangladesh. For him it is difficult to work in the fields because he has never done it. He has the experience to work overseas and it is easier for him to work there. He says that if he can go overseas he will be able to earn money quickly and easily.

Rahman convinced Bashir to allow him to go overseas again. Bashir mortgaged 2.50 acres of land for 125,000 taka. In December 2002 they handed that money over to a person named Nasir from their own village who was acting as sub-agent for a manpower export agency in Dhaka. Three months later they learned that it was a fraud. Nasir fled the village and took shelter in Dhaka. Rahman, along with another person who like him had deposited money

with Masir, ran after him and found him in Dhaka. They settled at a village-level negotiation that Nasir would return 75 percent of their money in installments. Nasir did not have the money because he deposited it with the manpower agency in Dhaka, so all the people who had deposited money with Nasir agreed to give him time to return their money.

Bashir's other two sons are at school. The problem arose that Bashir mortgaged most of his land to collect money for Rahman. Now the whole family is in a deep crisis as they have lost their land temporarily. They have very little land left to work on and support the family. Bashir says:

It's my fate. I tried to educate my sons. I did that but now they do not want to work in the field and want to work overseas. I lost more than 150,000 taka in my first effort to send my son to Malaysia with a hope that this effort would change my fate. But that failed. I tried again and failed again. Now whole family is at risk. I do not know how I will feed my family.

He is now thinking of taking the land on a sharecropping basis from the person he mortgaged his land to. The person concerned has agreed. Rahman feels ashamed and now decided to help his father in farming as they do not have another choice. Until they get back their money from Nasir, they will not be able repay the money and take back their mortgaged land. Bashir commented on his fate: "My son has put me in a very bad situation. Now he has agreed to work on the farm but did not do so before. If he had agreed before then I might not have had to mortgage out my land and end up in this bad situation." Like Bashir, another nineteen persons had deposited their money with Nasir. All the families suffered the same fate and they are all in deep trouble.

Case 5.7 Land selling

Manik is a 58 year old farm laborer. He has three daughters and two sons. All his daughters were given away in marriage. He lives with his eldest son's family. His youngest son works as a tailor away from home near his eldest daughter's house. He is still working but not so hard. He takes care of livestock (cow) and during harvest periods he migrates seasonally (*dawa*). Sometimes he also assists his son in farming. He has sold all of his 1.65 acres of land over a period of 20 years – starting from 1974 until 1987. Now he works as a sharecropper and farm laborer.

He started to cultivate his own land in 1967. In addition, he also took 0.99 acre of land on a sharecropping basis. He continued in this way for two years, when he realized he should do something different, as sharecropping is not profitable plus it requires hard labor, and In 1970 he started a biscuit business. He purchased biscuits from the biscuit factory at nearby *upazila* and sold biscuits at the weekly markets in different places around Saturia. He did not have a shop, but carried the biscuits in buckets. He continued the business for more than one year but had to stop when the Pakistani Army set fire to the biscuit factory during the Liberation War in 1971. At that time it was difficult to move freely so he had to stop his business. While he was engaged in business at that time he only cultivated his own land, then he took 0.66 acre of land on a sharecropping basis. In 1973 he started a jute business together with one of his brother-in-law. They invested 10,000 taka and bought jute worth 30,000 taka on credit from the farmers and supplied the jute to jute mills at Narayanganj. Upon getting payment from the jute mills they repaid the farmers. In the first year they made a net profit of 1,200 taka, but in the second year they drove into a false position. He had problems with his partner, as they did not get their payment of 10,000 taka. As a result, he suffered a loss of 2,000 taka. So he had to sell 0.35 acre of land to repay the farmer's bills. He then went back to farming again. This time he became lazy and did not work hard to take

care of his family. Instead, he started selling more and more land with time to repay his debts to make up the deficits of his expenditures. Then he became engaged in seasonal fruit selling. During jackfruit season he would buy jackfruit from villages and sell them at different markets.

When he started his business in 1973, he had a lot of money with him, which is very uncommon for rural people. He used to visit Dhaka very often so his living standard went up. When he returned to farming again in 1974 his earnings were not sufficient. At first he sold 0.35 acre of land in 1974 to his nephew to repay his loans incurred during the jute business. In 1977 he sold 0.30 acre of land to his nephews and in 1987 another 0.19 acres. Between 1975 and 1980 he sold 0.54 acre to non-relatives. He says:

During that time land was very cheap compared to now. Most of my land was high land not suitable for rice cultivation. In the last five years the price of those lands went up after the introduction of vegetable cultivation on high lands, but when I sold my land I did not get a good price.

However, neighbors said that when Manik was involved in business he got hard cash, which spoiled him. He did not work hard anymore, gossiped with people instead of working, and played cards for money (gambling), which is why he sold his land.

Case 5.8 Dairy production

Mukim is a 70 years old livestock rearer. He divorced his first wife and left her along with their only son Mintu. Mintu was then raised at his maternal uncle's house. Mintu's mother died before Mintu was married, so Mukim gave Mintu a small piece of land beside his tin shed. Mintu built himself a tin shed and lives there separately with his wife. Mukim's second wife has two sons – Chan and Jan. Chan also got married but resides at his father-in-law's house, so Mukim is residing with his youngest son Jan. Jan is only five years old. Mukim worked in the past as both a farm and non-farm laborer. At the same time he also reared cow on a sharing basis. During that time he and his wife would cut grass for the cows in the very early morning before going to work. At that time his eldest son (Chan) also helped him. Chan later started a mango and *gur* (brown sugar) business. Chan left home after marrying.

Mukim was getting old and decided to do something different since he could no longer work as a laborer. He says that cow rearing on a sharing basis is not profitable. The cost of cow fodder is expensive and cutting grass is time consuming. The owner of the cow does not share the cost of fodder and he still has to be given half of the profit, so Mukim decided not to rear cows on a sharing basis and to buy a cow of his own. In 1997, he bought a cow with calf for 9,000 taka. For this purpose he took a loan of 8,000 taka from the local village organization and added 1,000 taka from his savings. That was the turning point of his life. During the first year the cow gave two to three liters of milk per day while at present it gives six to seven liters. For the next one year (1998) he continued his work as a day laborer to repay the loan installments. He used to milk the cow twice a day, in the morning and afternoon. He sells the morning milk at the local market while five neighbors take the afternoon milk. Some milk is kept for his own consumption.

Mukim currently owns four cows. One cow with a calf is giving milk while another cow is expected to give birth soon. He is thinking of selling his lone bullock during next year's Eid-ul-Adha festival for cash. He cuts grass together with his wife after selling the morning's milk. Jan accompanies them to the field. They cut grass until 2 pm., then come back to take care of the cows. He takes a bath after bathing the cows. In the meantime, his wife takes care of Jan. They take lunch together and then feed the cows. In the afternoon he milks the cow and

delivers milk to his neighbors. His wife cooks for them in the afternoon. They take this food for dinner, as well as for breakfast and lunch on the following day.

He sold his first bullock in 1999, two years after he purchased this bullock along with its mother in 1997. He received 4,000 taka for the bullock. He sold the second bullock in 2000 for 3,800 taka and the third bullock in 2001 for 3,000 taka. He gave loans to different persons in the adjacent union, investing 3,000 taka in 2001, another 3,000 taka in 2002 and 1,000 taka in 2003. At present he has invested 10,000 taka in loans. From this he gets 75 kg of paddy per 1,000 taka, i.e. 750 kg of paddy per year. The paddy is paid out in two harvest seasons, the first half during November and the other half during May. This paddy is enough for the family's eight-month rice requirement. He uses the money that comes from selling milk to maintain his daily and seasonal requirements of other essentials, as well as to repay loans.

Last year he took a 4,500 taka loan from the village organization to rebuild his old tin shed. Last November he got only 337.5 kg of paddy instead of 750 kg, so he had to buy paddy for the lean period (March - May). This year he has taken another loan of 4,000 taka to buy paddy. He will repay the loan by selling milk.

Case 5.9 Rakhal (contract laborer)

Jamal is 42 years old. He is the eldest among two brothers and one sister. Both of Jamal's parents died when he was young. He and his sister and brothers were raised by different families (no relatives). Jamal and his sister Moni were raised in the same house. When both of them were grown-up this family treated them like servants. Later he served as a *rakhal*. The foster family arranged Moni's marriage. His deceased biological father had no land or homestead so he stayed on the land where he was raised. He left there in 1985. The family did not treat him nicely and made him work all the time. The man who would become his father-in-law arranged another position for him, where he worked for two years. He handed his earnings over to his father-in-law for saving. After two years his father-in-law brought him back and Jamal married his daughter Jolly. His father-in-law gave him 0.09 acre of land in exchange for his savings but registered it in his daughter's name instead of Jamal's. Jamal also bought a cow.

Jamal now has two sons and two daughters. The eldest daughter Rina, aged fifteen, is in the seventh grade and his younger daughter Selina, aged ten, is in the third. His eldest son Zakir, aged seven, is a Madrasha student, and his youngest son Mohon is one year old.

After marriage, Jamal worked as a farm and non-farm laborer. He also followed seasonal migration during harvest season to work on a contract basis. In 2000 he went to Dhaka and worked in an electric switch factory for three years. There he was paid a salary of 2,500 taka per month. From there he and his co-workers went to work in another factory in Mymensingh. The owner cheated them and did not pay them at the end of the month, so Jamal and other workers fled from there. After fifteen years he has decided to be a *rakhal* again and is now working in the Union *Parishad* (UP) chairman's house. When asked about working as a *rakhal*, which is rare in recent years compared to past, his argument is:

If I work as a farm laborer then half of the year I do not have any work. So it is difficult for me to maintain a family of six members. Now I have a fixed income. From my income I can save some money and enlarge my possessions, like I took on a land mortgage with my saved money.

Jamal gets 1,400 taka per month. He has already saved 4,000 taka and has taken 0.09 acre of land on mortgage where he now cultivates rice. He does not plan to work as a *rakhal* again when his contract expires.

At present his wife Moli works as a maid in a neighbor's house where she receives food but no monetary payment. Additionally, she also works in paddy processing during the post-harvest season. This year she worked for two months and got 112.5 kg of paddy and clothes. This year she has taken a goat on a sharing basis. She has been a member of GKT since 1998 and has taken three loans thus far. In 1999 she took a first loan of 1,000 taka and bought poultry and a goat, but all died. In 2000 she took a second loan of 3,000 taka for consumption purposes. She repaid those by working as a day laborer. She has been working as a maid since 2002 because she cannot work hard after a caesarean operation. She will not work as a laborer for another year. In 2002 she took another loan of 5,000 taka and loaned that money out with an interest rate of 37.5 kg of paddy per taka 1,000 per harvest. This year she got 187.5 kg of paddy for the first harvest.

Case 5.10 Rickshaw pulling

Mafiz is a 27 years old rickshaw puller. He was the fourth among eight sons and a daughter. When he was twelve years old his father sent him to work as a *rakhal*, which he did for about seven years. He returned home to take care of his mother after his father's death in 1991. After working as a day laborer for two years, he was married in 1993. His father-in-law gave him 3,000 taka as dowry and 1,000 taka instead of ornaments. He bought one rickshaw with that money and since then he has been pulling a rickshaw. He has one daughter. He bought 0.05 acre of land with 6,000 taka in 2001 from his savings and a loan from BRAC. He paid back the loan in 2002. His plan is to take some land on mortgage and farm along with rickshaw pulling. In this way he wants build his wealth slowly by rickshaw pulling and farming. In his own words:

Rickshaw pulling is very hard work so I am planning to gradually switch over from this work to farming because I would not be able to pull a rickshaw during my old age. I have a long term plan to do so. The rest depends on my fate. But it is very difficult to buy land nowadays and land is getting more expensive by the day. I am planning to take land on mortgage and continue farming along with rickshaw pulling.

Like other rickshaw or van pullers he dreams of stopping this work and switching over to farming. He farms on a limited scale on his small piece of land. He also follows seasonal migration like others during the harvest season. Having food stored at his house gives him a sense of food security.

Case 5.11 Trading and grocery shop

Nuru is a 50 year old grocery shop owner. He has been married twice. He left his first wife with four daughters and a son at his own village, which is far away from where he is living now. He has a son and daughter from his second marriage. All of his daughters and his son from the first marriage are married and settled. He has a son, Ratan, and a daughter, Lipi, from his second marriage. He had gone through diverse livelihood activities before starting this shop. He served as a *rakhal* while he was very young, then did farm and non-farm labor. In the end he became involved in small trading and now has a grocery shop. He used to sell seasonal fruits and prepare and sell fast foods at different weekly markets. He started the grocery shop some ten years back and it is well established at present. He recounts this history as follows:

I did almost everything to survive: I served as a rakhal, then as a farm laborer and a non-farm laborer. When I was getting older I switched over to vending seasonal fruits and foods in different weekly markets. Then I thought I must settle somewhere and accordingly I started this grocery shop. At the beginning sales were no good and it was difficult to get by. So I continued vending fruits and foods, which I am still doing. I sit when I have time, otherwise my son and wife look after the shop.

Ratan used to look after the shop but not very sincerely. Nuru decided to get him a wife. After marriage he started behaving differently and Nuru had a conflict with Ratan. So Nuru made Ratan leave the business. Nuru tells the story as follows:

In the last months Ratan was not as serious as before in running the shop. I thought that he would become serious when he would get married, but things went wrong. Ratan behaved erratic because he thought that I was dependent on him to run the shop. That's not true. I did not bother to oust him from the shop because I wanted to teach him to be serious with the business if he wants to continue. But it didn't work out and I got him out of the shop. This creates a big work load for me and my wife. But with time it will be okay.

Most grocery shops are run by the owner with the help of a young son or daughter, who take over when the owner has to go to the market to buy supplies. Support from a wife in running a shop is rare in the area. In Nuru's case, his wife is among the few women running shop along with other family members. His daughter is too young (nine years old) to help them.

Case 5.12 Factory worker

Mizan was born in 1984. His mother was separated from his father even before his birth. His father occasionally visited his mother, the result of which was his birth. His mother lives from her own efforts. She was very poor and worked as a maid, day laborer and factory worker. She tried to get him educated but he stopped going to school when he was in grade eight. In 1999, he joined a furniture shop as a carpenter's helper. He worked there for one year and earned 500 taka per month. In 2002 he went to Dhaka in search of better opportunities. After one month he became sick and was back at home. When he was back he met Anis, who was working in the big steel mill nearby their house. They became friends and Anis called his mother "mother" as well and he started staying in Mizan's house. Anis helped Mizan get a job in the steel mill and he has been working there since April 2001. He makes 2,300 taka per month. He saves 200 taka in his office and gives 1,500 taka to his mother to maintain the family. He keeps the rest for his incidental expenses. He has bought a fan, one showcase, and a TV from his savings. He is very happy with his work. He expressed his feelings as such:

I studied up to grade eight so I never thought that I would ever work as a farm or day laborer like my mother. From the beginning I tried to get work in the factories. That's why I started my career in a furniture factory. I worked as a trainee and they paid me so little, not even enough for my expenses. I could not provide any support to my mother. So I went to Dhaka in search of a better job. I fell ill there and returned home. Life in Dhaka is much tougher than here. I was looking for a job where I can stay at home and work. I was very lucky that I met Anis and we became friends. Later on he became a family member. He helped me get this job. I will try hard to continue with this job. The rest is fate.

To get a job in a factory, one needs a connection with a person who is already working there, like a relative or a friend, who is seen as the guarantor for the reliability of the new worker by the factory owner. In this way, getting a job in a factory requires social capital.

5.3 Livelihood security and vulnerability

The asset status of rural communities does not remain static, and the way it evolves is an important determining factor in livelihood vulnerability. In this section we will look at the determinants of livelihood, household and individual security. We will also look at the issues of individual food vulnerability and effects of the 1998 floods on the livelihood portfolios.

5.3.1 Determinants of total household expenditure

In this section we use the total expenditure of household as a proxy indicator for livelihood. Table 5.2 presents the determinants of total household expenditure. Credit taken without collateral (social capital) influenced the total expenditure of the household to a great extent during the pre-flood period. People borrow money to smooth consumption. During the post-flood period credit (with or without collateral) is no longer significantly related to household expenditure, suggesting that available credit amounts were not enough to influence household expenditure, given a situation of narrowing of economic differences between households (as reflected in the overall decline of household income after the floods, see Table 5.4). The influence of landholding on total expenditures during both periods indicates that those who own more land are relatively better off and have more spending capacity. Diversity of sources of income shows in both periods, although there are shifts in the pattern of income sources or – one could say – in the livelihood portfolio. The reversal in the relation of household income to remittances when comparing the pre-and post-flood periods requires some explanation. It seems that during the post-flood period, fewer remittances were received, possibly because households had received remittances just after the 1998 floods and not during the survey period (1999-2000).

The importance of labor after the flood indicates that households may have exhausted their assets during the crisis, which made them dependent on labor also in the post-flood period. The floods caused a boom in the pond-fish production, which is visible in the significant relationship only for the post-flood period. In addition, dependence on rented-in land indicates that households might have had no other choice than sharecropping as a livelihood strategy. Increase in income from dowry in the post-flood period indicates that there might have been more marriages during the post-flood period, which would have increased the households' asset base. Although the age of the household head influences expenditure during the pre-flood period, it does not so during the post-flood period. This might be explained by the fact that, in a situation of loss of assets as a result of the flood, the ability to earn an income by selling labor still governs ways of maintaining livelihood portfolios. Older people are at a disadvantage in selling their labor compared to their younger counterparts.

Table 5.2 Determinants of total household expenditure: regression results (linear OLS)

Variables	Pre-flood period			Post-flood period		
	Co-efficient	SE	T-stat	Co-efficient	SE	T-stat
Sex of the household head	682.417	913.078	.747	-645.428	1378.695	-.468
Age of the household head	214.475	86.440	2.481**	109.779	119.342	.920
Age square	-2.270	.853	-2.661***	-.589	1.124	-.524
Education of Household head	-51.679	60.965	-.848	68.721	81.079	.848
Dependency ratio	11.544	382.694	.030	-158.762	505.042	-.314
Percent of total income from						
• Plot production	-47.026	18.861	-2.493**	-38.448	17.716	-2.170**
• Non-plot production	-41.973	30.904	-1.358	-65.972	61.446	-1.074
• Rented-in land production	39.415	65.474	.602	-233.502	99.956	-2.336**
• Fish farming	-24.164	226.002	-.107	-41.954	17.649	2.377**
• Open water fishing	-40.502	35.398	-1.144	-187.597	731.877	-.256
• Livestock production	-24.692	17.290	-1.428	-29.963	23.995	-1.249
• Labor sale	-36.281	16.948	-2.141**	-39.076	18.820	-2.076**
• Self-employment	-18.275	15.694	-1.164	-14.962	16.762	-.893
• Remittance	118.132	26.781	4.411***	-20.189	26.937	-.749
• Agri-equipment rent	1.327	28.995	.046	40.398	40.941	.987
• Asset sale	-87.924	63.112	-1.393	-49.844	113.153	-.441
• Dowry received	17.054	40.797	.418	88.140	51.035	1.727*
• Social security program	-54.488	231.179	-.236	-59.793	75.090	-.796
• Other sources	236.082	86.778	2.721***	-12.455	29.994	-.415
Social capital (credit taken without collateral)	.138	.039	3.510***	.031	.031	.981
Credit taken with collateral	-.188	.074	-2.538**	-.002	.041	-.037
Landholding of the household	19.858	2.083	9.534***	20.526	3.070	6.687***
Constant	-1539.504	2856.186	-.539	2493.352	3840.294	.649
Adjusted R square	.470	-	-	.280	-	-
Durbin-Watson stat	1.861	-	-	2.151	-	-

Significant at *(0.1), ** (0.05), *** (0.01)

Dependent variable = Total expenditure of the household

5.3.2 Determinants of food vulnerability

Vulnerability was defined in this research in terms of food vulnerability. Both differences in total calorie intake and non-staple calorie intake were taken into consideration. At first, the households were grouped into four groups according to the difference in total calorie intake between two periods: total calorie increased by >15%, by 0-15%, decreased by >15%, and decreased by 0-15%. Secondly, the households were divided into three groups according to non-staple calorie intake: <250, 250-500, and >500 calories. The two criteria were given equal weight in a combined classification, resulting in the following groups: least vulnerable, moderately vulnerable, and severely vulnerable. Food vulnerability is measured among the young aged 6-20 years, as the influence of non-staple calorie intake is more pronounced among this age group.

The determinants of food vulnerability are presented in Table 5.3. The table shows that total expenditure and landholding significantly influence food vulnerability. In terms of individual food security, there is a significant gender difference during both periods. Girls are more food vulnerable than boys, which is due to gender discrimination in food intake behavior. Collateral-free credit (social capital) influences food vulnerability significantly during both periods, though less during the post-flood period. This suggests that in a situation of a natural calamity when the whole community is affected, social capital cannot be mobilized and support from others is difficult to get. Those who sell their assets or depend on remittances or non-plot production (home gardening) seem to be susceptible to vulnerability during the pre-flood situation. Dowry has an impact during the post-flood situation, suggesting its importance to avert livelihood and food vulnerability in the situation of scarcer means after the floods. Income from other sources had a significant influence on food vulnerability already during both periods.

Table 5.3 Determinants of food vulnerability: regression results (linear OLS)

Variables	Pre-flood period			Post-flood period		
	Co-efficient	SD	T-stat	Co-efficient	SD	T-stat
Sex of the member	-.156	.055	2.829***	-.176	.055	3.168***
Log of age	.005	.134	.037	.098	.191	.515
Sex of the household head	-.209	.160	1.306	-.108	.176	.611
Dependency ratio	.053	.060	.872	.044	.062	.715
Percent of total income from						
• Plot production	-.005	.003	-1.635	-.004	.003	-1.330
• Non-plot production	-.009	.005	-1.796*	-.004	.005	-.928
• Rented-in land production	-.010	.010	-.988	-.010	.010	-.925
• Fish farming	-.005	.003	-1.629	-.004	.003	-1.350
• Open water fishing	.002	.005	.314	.001	.005	.278
• Livestock production	-.002	.003	-.731	-.001	.003	-.419
• Labor sale	-.001	.003	-.293	-.001	.003	-.276
• Self-employment	-.001	.003	-.430	-.001	.003	-.255
• Remittance	.006	.004	1.700*	.006	.004	1.530
• Agri-equipment rent	-.002	.005	-.512	-.005	.005	-1.083
• Asset sale	-.018	.009	-1.982**	-.015	.009	-1.598
• Dowry received	.005	.006	.810	.012	.006	1.923*
• Social security program	.012	.010	1.116	.013	.011	1.171
• Other sources	-.008	.005	-1.800*	-.009	.005	-1.889*
Social capital (credit taken without collateral)	-1.366E-05	.000	-2.645***	-6.382E-06	.000	-1.708*
Credit taken with collateral	5.123E-06	.000	.457	-7.030E-06	.000	-1.526
Total per capita monthly Expenditure	-3.191E-04	.000	-3.567***	-1.237E-04	.000	-2.200**
Landholding of the household	-5.250E-04	.000	-1.954*	-8.927E-04	.000	-3.098***
Constant	2.649	.237	11.155***	2.387	.292	8.179***
Adjusted R square	.115	-	-	.095	-	-
Durbin-Watson stat	1.700	-	-	1.171	-	-

Significant at *(0.1), ** (0.05), *** (0.01)

Dependent variable = Total expenditure of the household

5.4 Effect of the 1998 floods on the livelihood portfolio

In this section I will look at how livelihoods were affected by the 1998 floods. This will be done by comparing household strategies before and after the floods. The results show shifts in livelihood strategies between the pre- and post-flood periods (Table 5.4). The percent of total income from different sources declined after the post-flood period, except for income from plot production, labor sale, services, relief and other sources, indicating that the people had no other alternative than selling their labor and relying on relief. A decline in asset sales indicates that either they had sold their assets during the flood or they preferred to hold on to their assets. Other sources of income, though negligible in comparison to the main income sources, also increased in significance. This implies that households diversified their livelihood portfolios. Fish production usually increases after moderate flooding, but because of the devastating nature of the 1998 floods, all fish ponds were destroyed. A decrease in all production spheres indicates a scarcity of resources. The supply of credit without collateral (social capital) increased significantly during the post-flood period. This might be due to the NGOs' policies of supplying more credit to the flood-affected people as well as informal borrowing from moneylenders, kin, neighbors and friends. Credit supply with collateral also increased after the floods, while landholding decreased. Presumably people sold their land in the wake of the floods. The increase in asset value is due to the increase of the price of land. People apparently increased the diversification of their livelihood portfolios after the floods to include various minor sources of income. The households tried to retain their asset base and diversified their livelihood in response to the crisis.

Table 5.4 Differences between pre- and post-flood situations

Variables	Pre-flood Mean (SD)	Post-flood Mean (SD)	t-statistics
Total income	61222.46 (57612.73)	79115.79 (61940.49)	-3.718**
Percent of total income from			
• Plot production	12455.64 (17881.64)	32386.98 (41921.92)	-7.687***
• Non-plot production	4066.52 (4512.11)	2520.20 (3178.71)	4.925***
• Rented-in land production	1152.83 (8081.07)	759.50 (2379.70)	.821
• Fish farming	12.35 (629.54)	-514.02 (9015.30)	1.204**
• Open water fishing	708.6 (5037.06)	74.21 (184.85)	2.213***
• Livestock production	11625.94 (11459.86)	11000.05 (12179.15)	.658
• Labor sale	6640.17 (9383.41)	7168.87 (10912.84)	-.646
• Self-employment	12464.34 (17772.09)	11837.17 (17495.68)	.442
• Service	4471.23 (18403.46)	6050.25 (19332.83)	-1.040*
• Remittance	3240.67	1874.11	.766

	(29429.11)	(10787.60)	
• Agri-equipment rent	2088.23	1491.96	.943*
	(9002.56)	(6521.25)	
• Assets sale	425.66	207.22	1.160**
	(2532.88)	(2131.66)	
• Food for education	47.50	14.30	2.563***
	(209.69)	(88.78)	
• Dowry received	1095.98	775.73	.662
	(6894.70)	(4967.51)	
• Relief received	38.10	42.77	-.248
	(229.15)	(239.76)	
• Other sources	686.14	3274.42	-3.282***
	(1480.89)	(13783.78)	
Credit taken without collateral (social capital)	6646.84	8701.86	-3.545***
	(5468.29)	(8523.08)	
Credit taken with collateral	1202.43	4433.55	-7.706***
	(3052.21)	(6668.38)	
Landholding of the household	94.46	89.70	.486
	(130.32)	(110.15)	
Assets value	10420.09	37946.95	-10.814***
	(16048.88)	(41290.65)	

Significant at * (0.1), ** (0.05), *** (0.01)

5.5 Decision-making

Households use short- to long-term strategies to maintain and, if possible, enhance their livelihood. Additionally, households also develop short-term strategies to cope with adversity and avert vulnerability. In the Bangladesh context, household decisions about strategies are generally taken by the household head. Decisions in the past were mostly made by the household head in consultation with the adult male members of the household. They never consulted their wives or other women in the household. Women were not even allowed to make their own decisions. One woman in the focus groups said:

A long time ago my mother lent some money to one of our uncles. Upon hearing this, my father got very angry and cracked my mother's head. Men never consulted women in decision-making. They never even felt the urge to tell the women about their plans. Now time has changed. At least we know what our husbands are doing. My husband sometimes consults me but he takes the decision. Now we can lend our own money to somebody but we need to discuss it with our husbands first.

Even at present women rarely participate in the decision-making about production. However, the women make decisions about consumption, in which men rarely interfere. In the focus groups, men said: "Women are not involved in production so we do not feel the need to consult them, but we have given them full authority in the kitchen. We rarely interfere with the meals." In the female focus group, women complained:

The men never bother what to cook, but the problem arises when they want food. In the past, many times we could not cook because there was no food at home to cook. Many wives were physically abused for not cooking. How she can cook if there is no food? This also happens even now. The men give us charge of the kitchen but no money. So we

have to depend on them for that. Many times we ask our husbands to buy food but they ignore us.

More recently, young daughters are making their own decisions. Many young daughters ignore their parents' objections to them joining the workforce. One woman said:

My daughter fled from home with her friends to go to Dhaka to work in the factory. She discussed this with me before she left but not with her father as he might not agree. When he looked for our daughter at night I told him that she had gone to Dhaka. My husband got angry with me and even now he does not accept her money [earnings]. She saves her money in her bank account. Now my husband has softened his position and says that her savings will help us to get her married.

At some point women made their own decisions to join the NGOs. At first their husbands reacted furiously but later accepted their decisions. A similar thing happened with the use of contraceptives. Now most women are free to join the NGOs and use contraceptives. One woman in the focus group discussions said:

Look, you have called us here for the meeting. I cooked for my husband and told him that I am going to a meeting so please eat the food when you feel hungry, I will be late. Now we can decide about our things, though we consult our husband, but in the past our mothers were not allowed to go outside home alone.

Even now husbands are still the final authority in decisions regarding the bringing up of the children and the marriage of daughters, though the wives are consulted.

When we asked men and women about borrowing, both told us that it is the men who decide what and when to borrow. Women hand the money over to their husbands or sons to spend. Women rarely decide on the spending of borrowed money. Women in the focus group discussions said:

We borrowed money for our husband and sons. They used the money but we had the responsibility to repay it. When we could not repay, the NGO workers used to scold us but not our husband or sons. Now they have changed the rule. Our husband or sons have to sign as a witness and are held responsible for the loan taken. Now repayment of a loan is not only our burden, but it is that of our husbands or sons, too.

The attitude of women has changed since the NGOs came to work in the area. The NGOs have brought women out of their houses and given them a voice. One key informant said: "Now, sometimes women give more priority to the NGO workers than their husbands. That's why men do not like NGOs, but they need money that NGOs provide, so they have accepted the changing situation."

5.6 Changes in livelihood strategies in the context of social change

Households try to maintain and enhance their livelihood. They tend to stick to traditional livelihood strategies unless they are bound to do otherwise. What type of strategy households will follow depends on time, economic, demographic, socio-political, and ecological changes. New opportunities are emerging over time, but only a few households take the risk to embrace these. Households rely on a variety of livelihood opportunities. In the event of floods or other adversity, people have to choose whether to stick to or shift their livelihood strategies. In the past, most of households were involved with either farming or farm labor. After Independence there was a fundamental change in the socio-political arena,

which also affected the livelihood strategies in the people of the study area. As a result, many people migrated to the cities and were educated, and this influenced the ones who were left behind. The introduction of irrigation facilities and high-yielding varieties of rice brought a dramatic change in their food and livelihood security situation. The opportunities of off-farm labor eased the dependency on agriculture and led to further diversification of livelihood strategies. In the past, people used to migrate seasonally to work as contract labor during harvest (*dawa*), but the improved economic situation provides alternatives. This development results in a labor shortage in the study area which is compensated for by laborers coming from the northern part of the country.

Political disturbances are very common. Frequent public strikes called by the opposition parties create problems for the people in the study area. On the day of a public strike the price of fish goes up as it is imported from outside of the study area, while the price of products that are produced locally, especially milk, drops to almost half or even less, as it cannot be sent to Dhaka. However, the price of vegetables is not affected because the businessmen collect vegetables and send those in the evening or even at night when the strike is over.

5.7 Discussions and conclusion

Livelihood generation and maintenance is an ongoing process, and time is a crucial factor in livelihood security and vulnerability. It is also a crucial factor in determining the livelihood portfolio of a household in relation to its assets and resources. Labor is a crucial resource as well. A household that experienced problems in making a living in the past may follow a different course of action or shift to other opportunities and gather courage to take different strategies. To take a new strategy to diversify livelihood depends on the information and motivation to avail new opportunities. Risks play a vital role in the decision-making process. Households are keen to use new opportunities, but the household's resources-and-assets base will determine whether they are able to do so. Aziz (case 5.1) in the study area is an example of how people are always keen to accept new techniques or use new fertilizers or insecticides. Because of his good reputation at the *upazila* and union level agricultural department, the officers from the department of agriculture always visited him. They know that he is a pioneer in trying out new varieties of crops and technologies. He loves to experiment with new ideas, which is rather exceptional in the community. His access to information through networking is a form of social capital. In terms of vegetable cultivation, Musa (case 5.2) is a pioneer in the area as well. He started his career as vegetable cultivator when no one had ever thought of cultivating vegetables on a commercial basis. He had to fight a long battle to sell the products in the local market, so he had to travel to distant places to sell his produce. Vegetable cultivation is more labor-intensive and thus all of his family members including his wife and children were engaged in it. Now he has become old, his sons are educated and do not want to be involved in the labor-intensive work and his daughters have married. So he had to change from vegetables to the production of rice and other cereals. On the other side, farmers who have labor support from their families go into vegetable cultivation because it is more profitable.

Land is a key factor for production and most of the people have too little of it. In the past, people relied on sharecropping or shared rearing of livestock, but now there is a shift in strategies. Now, people prefer taking land on mortgage or renting-in land rather than sharecropping as the latter is less profitable. On the other hand, absentee landowners prefer to rent-out land over giving it to sharecroppers. Only poor people are involved in sharecropping. People give land to the sharecroppers when they have no alternative. The selling of land is

less preferred by the people as they cannot buy it back once they sold it because of the increasing price of land. This is why they prefer mortgaging their land at the time of crisis. However, when the households cannot cope with the situation they sell part of the land and take the mortgaged land back. At the same time, people who have money prefer to take land on mortgage over sharecropping because through this their money remains intact and they can use the land and get profit from it. Another group of people (including a few women) who have some money also take land on mortgage and hand it over to sharecroppers. Handing land over to the sharecropper and mortgaging-in and -out of land is reliant upon mutual trust, which is a form of social capital. In addition, credit from NGOs or local village-based organizations give households the ability to mortgage land for cultivation and rear livestock independently (case 5.8). Another strategy that people once followed is lending money to farmers in return for paddy (case 5.8). Trust is also a key factor here. Improper management of properties due to bad associates (case 5.7) is the negative side of social capital. Social capital is also needed for getting access to a job in a factory (case 5.12).

The people's aspirations to own land and farm indicate their agrarian inclinations. Though the poor people have to diversify their livelihood to include off-farm activities, they tend to return to farming whenever they can do so. However, the opposite situation exists among educated people. They do not want to stick to farming, which in turn is causing a labor shortage and hampering people's ability to stick to more profitable farming (case 5.2). In addition, because of the decline of the shared labor system, people have to spend time idle, while when they need more labor they cannot ask for support from their fellow farmers. Another point is that people's perception of food security makes them inclined to grow rice, while growing vegetables is more profitable. Similarly, the poor people used to harvest paddy on a contract labor basis (*dawa*) and bring the payment in kind (paddy) to store it in the house, which also gave them a sense of food security.

Several gender aspects to the findings relating to livelihood security and vulnerability are presented in this chapter. Though the cultivation of vegetables is profitable, it creates an additional burden for women. Because it is so labor-intensive and poor households cannot afford to hire labor, women have to work in the field. Livestock rearing is a popular activity that also entails an extra workload for women. The approach of the NGOs towards women to give them some sort of (pseudo-) empowerment in the form of credit does not always work out well. Husband or sons rely on women for getting a loan, but on many occasions they do not want to bear the burden of repayment. Recently, NGOs have introduced a system whereby the husband or son has to sign the loan document as witness and guarantor. This is also not enough to save the women from harassment for loan default. Mostly, women have to attend the organization's sessions for loan repayment. However, many times their husband, son, daughter or in-law comes to the session to submit repayment on behalf of the woman. When women default repayment the NGO workers hold them responsible and put pressure on them to repay as they can easily be reached at home. So this is also a burden on women, who are not using the loan but ultimately have to take responsibility. Women's participation in the economic sphere gives them a double burden. However, the other side of the coin is that NGO credit has raised the position of the women in the household and – in this way – has empowered them. These changes are evident in women's freedom to come out of the house and participate in the activities they like. The young daughter's decision to ignore her father's opinion and take up outside work also is an example of women's empowerment. This is definitely a positive development.

CHAPTER 6

COPING WITH ADVERSITY

"Misfortune never comes alone"
(Anonymous)

People have a vision of the future based on their past experiences and they set their strategies accordingly, taking into account the socio-cultural context. They follow certain short- and long-term strategies to achieve and maintain food and livelihood security. An adverse situation may lead a household to a vulnerable state. People have to cope with such situations, which are idiosyncratic in nature. Thus, it is difficult for them to foresee an adverse situation in advance and difficult for them to take precautionary measures. It is very crucial how households or persons cope with this adversity which was beyond their expectation. People take emergency measures to cope with the situation. This chapter discusses the issue of rural household coping in the study area and how the households concerned overcome their problems by using their assets or resources together with social capital. First, some of the local terms used in the chapter are explained.

***Rakhal* (contract laborer)**

In Bangla *rakhal* means cow-boy or shepherd, but in the study area *rakhal* is a male contract laborer who does of all sorts of work, including herding cows. These are special types of arrangements where a man has to work for one year under contract. According to the system, a *rakhal* has to stay at the land owner's house and work for at least 10 months per year. He enjoys a one month holiday during September-October and another month during other times of the year, but this depends on the owner's wishes. The landowner has to provide food. This type of labor arrangement was once prevalent, but at present it is rare.

***Matbar* (informal community leader)**

In the past, a *matbar* was a generally respected and influential person in the village. He was a village-based community leader, holding power to lead the village. There used to be just one *matbar* who always came from the same family. The *matbar* played a key role in settling disputes between persons or groups and villagers were bound to his orders and verdicts. Failure to obey such orders meant exclusion from society. Nowadays, a *matbar* may be a wealthy person, a political activist with links to the political power structure, or a strongman (*mastan*) with physical power. Thus, there may be more than one *matbar* in a village, representing different subgroups. The *matbar* now is a symbol of power rather than of dignity, and *matbars* possess less power than the past.

Upazila

An *upazila* is equivalent to a sub-district. Beginning in 2002, rural *thanas* are (again) called *upazila*. At present there are 470 *upazilas*. *Upazilas* are the lowest level of administrative unit where government officials are posted. They are headed by an official called an *Upazila Nirbahi Officer* or UNO.

Vulnerable groups development (VGD)

This is a special program to support vulnerable women, like widows, divorced and separated women, and women with disabled husbands and their families. One card is issued for each such woman or family. A fixed number of cards are allotted per union. Members of the union council (*parishad*) select women on the basis of the aforesaid criteria, after which a nominated *upazila* official makes the final list, sometimes with the help of NGOs working in

the area. With such a card a woman gets thirty kilograms of wheat per month over an 18 month term.

Dawa

Short-term seasonal migration of people as contract labor to harvest paddy is referred to as *dawa*. People used to do it at most twice a year, during April-May and during October-November. A trip lasts from seven days to one month. During *dawa* people use to work day and night, as long as they can. They get one-tenth to one-eighth of the harvest. The work of men includes harvesting, processing, drying and packing of the grains, while local women cook for the men. They go in a group of eight to ten people and divide the shares when they are back at home. Sometimes, a poor woman of the village accompanies the group to cook.

Taka

The name of the Bangladesh currency is *taka*. At the time of the survey, one US dollar was equivalent to 57.5 *taka*.

6.1 Women's coping with the death of the husband

Most of the married women in rural Bangladesh are housewives. Their role in society is reproductive but their participation in the production sphere is increasing over time, though at a very slow pace. In rural Bangladesh, the death of a woman's husband is a disastrous event in a woman's life and often leads to a lot of suffering. A woman has to immediately take on a dual role or she will have to depend on her parental family. They remain at the household of the husband when the children are grown and get no support from their parental family. In this section, three cases will be discussed that show how women cope with the death of their husband.

6.1.1 The case of Bela

Bela is 54 years old. During her first marriage her husband's family did not give her enough food and even abused her physically. The marriage broke down. She did not like her second husband either, so that marriage ended quickly as well. No children were born of the first two marriages. Then she married for the third time, to Azad. It was Azad's second marriage. He remarried after his first wife died. When she married Azad in 1976 he was 45 years and she was 25 years old. Azad's two sons Helal and Rahim from his first marriage were working as *rakhal*. At the time of their marriage Azad, was cultivating 0.66 acre of his own land and also worked as a farm laborer. They had a daughter and a son from this marriage. The daughter Joshna was born in 1979 and their son Manik in 1986. At that time they were food secure. Bela said: "Maybe he could not provide me with clothes, soap and oil for my hair, but we could have a full stomach three times a day".

Helal was married in 1985. Azad fell sick in 1986 and died in 1988. While Azad was sick he sold all of his land as he became disabled. The local doctor diagnosed his disease as typhoid but now Bela thinks it might have been tuberculosis. She said: "Before he died, he called his younger brother Azim and asked him not evict me from his house after his death". Bela's parents died before he died. She was an only child. She was unfortunate to get little support from her parents, inheriting only 0.03 acre of land at the time of her first marriage.

Helal left home for Dhaka one month after Azad's death and Rahim took charge of the family. It was very difficult to maintain a family of four on Rahim's income. One of Bela's neighbors advised her to work as a day laborer. Bela joined the other poor women of the village and worked all through the day. Her wages were thirty taka a day. During the 1988 floods, one of

the *matbars* took her to Saturia to prepare *roti* (home-made bread) that was distributed among flood victims. Other women of the village also joined her in that venture. She would work the whole day and in the evening she would return with a few *rotis* given to her for the family. After the flood, Rahim set up his own household. At that time Bela worked as a maid in the neighbor's houses, for which she was paid in food or rice. Sometimes she and the children had to fast. Rahim joined her after one month of separation and then married after six months. Rahim left Bela for good in 1989. A local union member got her a VGD card, which entitled her to thirty kilograms of rice per month. Bela's hut was blown away during the 1989 tornado. One NGO gave her tin-sheet to rebuild her hut and Helal came from Dhaka to help her. She still lives in this house.

Azim initially helped her, but his wife accused Bela of having an affair with a neighbor. Whenever she challenged Azim's wife and sons, they beat her. So with time Azim had turned against her. But Azim's wife said: "Whenever we cook some good food I give it to Bela. She has suffered a lot. So whenever she needs we help her". But Bela denied this.

When Rahim left the household Bela went back working as a day laborer. When there was no work she worked as a maid in Matin's (one of the neighbors) house. Matin's wife gave her food or rice. Matin's wife still helps her during crises. Bela used to sell coconut, lemon or bamboo to meet her other expenses. In 1992 she sent her daughter Mona to work as a maid in Mymensingh. But she was afraid at night and returned home. She came down with a fever and was sick for ten days. Then Bela sent Mona to Dhaka to work as a maid. Because she was just a minor and could not perform all duties, the family she was staying with beat her and she fled. Bela sent Mona to Dhaka again but again she fled. In the mean time (in 1993), Bela got a job in the local tobacco factory and worked there for two years, earning 1000 to 1200 taka per month. After being sacked from the factory she took work in another factory but was sacked after two months. She then worked in another tobacco company for five months before getting sacked again; they preferred young girls to old women. Meanwhile, one of the neighbors enrolled Mona in the BRAC school and her son Manik in the Proshika school. Manik did not continue on, but Mona did and completed the school. Once, Bela started selling coconut to pay for Mona's school expenses, but she was scolded for this by her step-son Rahim and she stopped. In the end, Matin paid all school expenses. Mona continued to the tenth grade but could not sit for the secondary school certificate (SSC) examination due to lack of money. Bela said: "Mona was educated up to the tenth grade because she was afraid to go back as a maid. She was good at school but poverty disrupted her career".

Since 1991, Bela has engaged in *dawa* twice a year, during April-May and again in October-November. She cooks for the men for one month. In return, she receives 187 kilos of paddy during April-May and 94 kilos during October-November. In 2002 she could not go in November but in 2003 she hopes to go. When her children were young she would leave rice with Matin's wife while she was away. Matin's wife usually took care of her children in her absence.

In 1998 she engaged Manik in a tea stall but he left the job in February, 2003. She has to earn for both Manik and herself. Now Manik is 20 years old and beyond her control. She said: "When Manik was young I was anxious about his food. Now I am anxious about how I will control him. He is very unruly; he doesn't listen to me or care about me". When she went to cook for *dawa* laborers in May, 2001, her son-in-law took Manik away with him. Manik worked and gave her new clothes and 200 taka. In recent years, Helal's wife also provides food when she is sick or cannot work and doesn't have food at home. She said:

When my husband was alive I never worked outside the home. But after his death I started working as a day laborer. Most of the time what Manik earns he spends on himself. When he will marry he will perhaps not look after me. Maybe I have to work till my death.

She married off her daughter 1998. The villagers donated all the expenses for the wedding, including 6,000 taka for the dowry. After her daughter's marriage, she no longer works as a day laborer because her daughter's husband's family is not in favor of that. Her daughter sometimes helps her maintain her livelihood. She was never involved with any NGOs and never took out any loan because she is afraid of being unable to pay the weekly installments.

6.1.2 The case of Rima

Rima was 27 years old at the time of the study. She was married in 1993 at the age of 17. Her husband Zaman was 32 years old and worked as *rakhal*. He became a farm laborer in 1995 and started a small grocery shop in 1996. For this, Rima borrowed 6000 taka from the Grameen Bank and her husband borrowed 6,000 taka from Gono Kallayan Trust (GKT). The shop was running at a loss, so in 1997 he tried for a job in Dhaka and took loan of 15,000 taka from different persons and gave it to an agent. They did not provide him with any job and, moreover, did not return the money. To repay the loan, Rima had to sell her cow and borrow 6000 taka from the Grameen Bank again. Then Zaman tried for an overseas job. For this purpose he sold 0.33 acre of land for 35,000 taka, two big trees worth 6,000 taka, and also his grocery shop. Rima did not know the amount he sold the shop for. He also again borrowed 50,000 taka from different people. Altogether, he had 80,000 taka, which he gave to his relative Jabbar (grandfather-in-law) for safe keeping. When he sold his shop he became jobless, so whenever anyone called upon him to do work he would do it. In March 1998, one day prior to the Eid-ul-Adha festival, Musa (a cattle broker) asked him to go to Dhaka to sell cattle. He accompanied Musa but on the way back he died in a road accident near Manikganj. Rima was shattered when she saw her husband's dead body.

Things were already not going very well before Zaman's death. Rima had become sick and her physical condition deteriorated. At that time her husband had an affair with his brother's sister-in-law. She confronted him about his affair and their relation deteriorated. As a result, he did not communicate with her anymore. On the day of his death, Zaman went to Dhaka without informing her. Musa gave 500 taka for Zaman's burial, then Jabbar also gave 1,000 taka for religious rituals. Neighbors provided cooked food for three days. At that time, Rima was a housewife and the mother of a 2 year old child.

The money lenders came to Rima to collect their money. The local UP chairman went to Jabbar, with whom Zaman had left his money. At first, Jabbar denied that Zaman had left money with him. People reported that Zaman had left 80,000 taka with Jabbar, but Jabbar admitted having only about 50,000 taka. Eight days after Zaman's death, Jabbar gave 50,000 taka to the chairman. The chairman then paid all Zaman's debts and gave 8,000 taka to Rima. The chairman suggested that she lend 8,000 taka to three people at an interest rate of eight percent per month.

Fifteen days after Zaman's death, Rima became very sick and was taken first to Sauria and then to Manikganj, where she was given medicine. The costs, 500 taka, were paid by her father. After one month she was taken to the Dhaka TB Hospital. Her father again paid the costs of 500 taka. After three months she fell ill again and was taken to Manikganj. She paid the costs of treatment (300 taka) from the interest she had received, while her father paid her transportation expenses. Then she was enrolled in the BRAC TB program, as the treatment

of tuberculosis needed a longer time and is costly. For the first year Rima was always sick. Her mother-in-law used to stay with Zaman's younger brother but after Zaman's death her mother-in-law stayed with her. Her mother-in-law then took care of her. Even when she visited her father's house her mother-in-law accompanied her.

One month after Zaman's death, the UP chairman gave Rima a VGD card valid for 18 months. After her term was over her mother-in-law was given a card. The first month they consumed the wheat themselves and the second month she sold the wheat in the market for 300 taka. She also received 550 taka interest from her money lending. She used some of the money and saved the rest. She got 0.20 acre of land belonging to Zaman and 0.12 acre belonging to her mother-in-law. She handed these lands over to a sharecropper, for which she received 225 kilogram of paddy in return.

Zaman had built a house with a tin roof and walls made of jute sticks. Nine months after his death, Rima replaced the jute stick walls with tin walls. One and a half years after Zaman's death, she completed the nine-month TB treatment and became well. She then took the land away from the sharecropper and started to cultivate it herself together with her mother-in-law. They harvested mustard (19 kg) and then cultivated rice, harvesting 600 kilos. She sold 187.5 kilos for 1,400 taka and saved the money and consumed the rest of the paddy. Before Zaman's death, she took out a loan from Grameen Bank and bought a cow for 2,500 taka. She sold that cow after two years for 7,000 taka and used 3,000 taka to purchase eight concrete poles to strengthen her house. She bought another cow for 4,000 taka and took one goat from neighbor on a shared rearing basis. She bought the kid of the goat for 100 taka. When she suffered a tuberculosis relapse she took a second TB treatment from BRAC.

Rima withdrew 8,000 taka from her money-lending business in 2001 and took out a mortgage for 9,500 taka on 0.12 acre of land. She sold the goat for 500 taka, making a profit of 100 taka, and invested this money in BRRI rice. That year she harvested 562.5 kilos of BR3 and 750 kilos of Aman paddy. She sold 187.5 kilos and saved 1,400 taka. In 2002 she harvested 600 kilogram of paddy, 112.50 kilos of which she sold for 900 taka. She spent 200 taka to replace pillars in her house and bought one tree with 500 taka and used it to build a veranda on her house. She used the rest of the money to build a cow shed with a tin roof and bamboo walls. In 2003 she harvested 19 kilos of mustard and sold it for 180 taka, using the money to purchase a window for her house. She also harvested 600 kilos of paddy. She and her mother-in-law can sow their own seedlings, but they have to hire a laborer to harvest the crop.

At the time of the study, Rima's son Monir was seven years old and she enrolled him in a *madrasha* (religious school). After Zaman's death she terminated her NGO membership. She was only taking TB treatment from BRAC. She always had a good relationship with her only brother-in-law, Zaman's younger brother, but after Zaman's death the relationship went sour. He wanted to evict her from her house and occupy her land. Neighbors and her mother-in-law support her against her brother-in-law. Her brother-in-law accused her of being a witch and of killing his brother. Her father asked her to get married again but her mother-in-law opposed this. She always supports Rima and wants her to look after her son. Rima doesn't want to remarry; rather, she wants to raise her son. She likes her mother-in-law and wants to be with her as well. She comments: "I have suffered a lot but I don't want my son to suffer. If I marry again he will suffer. I want to educate him properly".

6.1.3 The case of Nazu

Nazu was born in a farmer's house in Saturia. She had one brother and one sister. She is now 70 years old. When she was eight years old she was given in marriage for the first time. One daughter was born in that marriage. But her mother-in-law was not a good lady and was always after Nazu. She scolded Nazu and found faults with Nazu's work all the time. Sometimes her husband would beat her on the advice of her mother-in-law, so Nazu's father took her divorce from her husband. Then Nazu was married again, this time to a widower. They had a happy life and three daughters and one son were born in this marriage. The sons were younger than the daughters. Nazu's husband died after her second daughter was given away in marriage. He went to visit his daughter but he suddenly died at her house.

Her sons were studying in the BRAC school when her husband died. Both left school and became *rakhals* for three years. They were given 200 taka each per month. This was the main source of Nazu and her daughter's livelihood. She also took a goat and a cow on a shared rearing basis. She had only a house for shelter but no agricultural land, just a piece of land adjacent to the house. There she planted some trees and a small bush. During times of need she sold some of these trees. She wanted to work outside the home but her in-laws did not allow that. Because it was so difficult for her to sustain her livelihood, she proposed she find work outside the home, but her nephew said: "You may suffer from hunger but you must not work outside the home. We will be ashamed if you do so". So she never went to work.

At the time of the fieldwork (2003), both sons were married and the daughter was married as well. Nazu used to live with her youngest son. Still she rears a cow on shared rearing basis and raises some poultry as well. She uses this money to support her family as well as for extra expenses like her beetle leaves and nuts or for gifts to her daughter's children.

6.2 Women's coping with divorce

Divorce is not uncommon in Bangladesh. In 1984, one in five marriages ended in divorce (BBS, 1984). The divorce rate is increasing. Divorce leads to a lot of suffering in a woman's life. A divorced woman becomes dependent on her parental family for her livelihood, especially on her father and brothers. She becomes vulnerable, no matter whether she is from a poor or middle-class family. This section shows what happens to women when they are divorced by their husbands.

6.2.1 The case of Jolly

"Men are bad. They use women as slaves. It is very difficult to adjust to that. I could not adjust to my first husband, maybe it will happen again. Besides, I have a son and if I get married again he will suffer, so I am afraid to do so", said Jolly. She is the youngest among four sisters and has one younger brother. She had happy childhood. Her mother died in 1986 when she was only 12 years old. At that time she accompanied her father and brother as all three sisters were married by that time. Her father was blind and her grandfather was disabled when she was young. Her brother was born very late. Thus, there was no male in her family to work. She and her sisters thus had to work in the field when very few women worked in the fields. The sisters had to manage all household and farm activities. She was never sent to school.

In March 1989 at the age of 15, Jolly married Mafiz, who was from an adjacent district. Her husband's family took 8,000 taka as dowry. Her husband was expected to get a job at the local hospital. Unfortunately, he did not get the job, as the person supposed to arrange it for him died. After her marriage, her father married again to a lady who was a distant relative of

her deceased mother. Joly did not stay at her husband's place. She stayed there – eight days for first time, fifteen days for second, and one month for the third time prior to her son's birth. She stayed at her father's house until the birth of her son, Mishu. Her father did not mind as she was his beloved daughter and she helped her stepmother at her work. Her husband visited her frequently while she stayed at her father's house. Her son Mishu was born in November, 1990. Twenty three days after Mishu's birth she went to her husband's house but things did not work out well there.

Jolly has dark skin compared to the wives of Mafiz's brothers. Her father-in-law was always angry with her and he tried to beat her on several occasions. He always scolded her and also urged his son to divorce her, but Mafiz's paternal uncle Mizan favored her and supported her in her anguish. Mafiz's mother and brothers also did not like her. Mafiz's family sent her to work in the field. A local UP member and the chairman made three attempts to settle disputes while she was with Mafiz's family but these failed. She narrated her situation:

After 10 months of my stay with Mafiz's family, one of his sisters-in-law fed Mishu boiled rice with red chili. I objected but she did not pay attention to me. Besides, she warned me that some bad thing was waiting for me after three days. My son got sick with blood dysentery. I asked Mafiz's family to give Mishu medical treatment but they refused. Then Mafiz's uncle advised me to return to my father's house as Mishu's condition got worse. Then I returned home and treated Mishu myself, after which he recovered.

Divorce proceedings started after she returned despite her husband's attempt to save their marriage. She blamed her father-in-law more than her husband for her divorce. She stated: "Mafiz was hesitant at the beginning but it was his father who set him up against me and urged him to divorce me. His uncle tried to save the marriage, but because of his father I was divorced". Both families ultimately agreed to a divorce in 1993. She says the following about what happened after her divorce: "My father paid 8,000 taka dowry to Mafiz's family during the marriage. When I was divorced, Mafiz gave me 13,000 taka - 10,000 taka for raising Mishu and 3,000 taka as *mohor* (bride price)".

When Jolly returned in 1992 to her father's house, her brother Harun was still unmarried. He liked her and Mishu as well. In 1998, she and other sisters formally gave their inherited land shares to their brother, as they were afraid about their stepmother's motives. Jolly kept herself separate from her father and brother from the beginning, maintaining herself independently. Her father helped her build a separate house and her father and brother also promised that she would be provided with a piece of land so that she could live independently with her son. The situation changed after Harun got married in 2000. He married Rina, a relative of her stepmother and received a dowry worth 35,000 taka. Harun's wife is a beautiful lady and her father paid a large dowry, which gave Rina a strong position in the household. Rina became influential in the household's decision-making. As a result of Rina's influence, her father and Harun refused to give her any land, after which she decided to try to purchase a small piece of land in the future and build a house on it.

In 1994 she took on a 0.33 acre parcel of land by lending 10,000 taka on the mortgage, keeping 3,000 taka for farming and consumption. After one year, the landowner returned her the money and took his land back. She then gave 2,500 taka to her father to pay off his mortgage on 0.10 acre of land, lent out 2,000 taka on an interest basis and loaned out her remaining 5,500 taka as *batch* (farming loan) at a rate 75 kilos of paddy as interest per 1,000 taka per year. In 1999 Mishu broke his hand in an accident. She then took back 2,000 taka from her borrowers and used that money for Mishu's treatment. She also took back her money from the *batch* borrowers in 2000, as they did not pay her paddy regularly as

stipulated in the contracts. She then took on 0.15 acre of land on mortgage with 7,000 taka and bought tin sheeting for 1,000 taka to rebuild her house and build a kitchen. Her father helped to repair the wall of the house with bamboo and jute sticks. At the time of the study she was staying in her father's homestead: "Usually I cultivate BR3 during *Aush* season (Jan-May) and BR11 during *Aman* season (June-November). This yields about 800 kilograms of paddy, which is enough for me and Mishu". In 2002 she harvested only 300 kilos of BR3 paddy, 56 kilos of BR11 and 37.5 kilos of mustard. She sold part of the paddy to meet other needs. She rented a tractor for plowing and did the rest of the labor herself, including sowing, weeding, and harvesting. Mishu also helped her. She liked the way Mishu would help her in the field. In 2003 she was not able to cultivate BR3 rice as neighboring farmers did not cultivate rice because the cost of irrigation had increased due to fuel price increases.

Jolly still lives at her father's premises, though separately, together with Mishu. She has a papaya tree with nine fruits on it. She will sell some of them and consume the rest. Prior to Harun's marriage she sowed different vegetables such as beans and pumpkins, but Harun and his wife won't allow her to sow vegetables on the household premises. They also don't like her to have a cow or a goat, though they themselves own livestock. Prior to his marriage, Harun shopped on her behalf but after his marriage he doesn't do this anymore, so she went to market herself. Because of this, Rina condemned her as if she were a bad woman. Her reply was: "Whose fate it is to have to go to the market for shopping has to go, whatever anyone comments". When Rina condemned her she relied on her maternal cousin's husband for her shopping. Now she sends Mishu for shopping. Jolly always took care of her nephew (brother's son), but Rina does not want her to do this anymore due to Rina's negative opinion of her.

Earlier, Jolly was a member of BRAC and Gono Kallayan Trust (GKT) village organizations. She saved money with these NGOs but never borrowed from them. She said, "I don't want to borrow money from them. It's not good to borrow from anyone other than next of kin and relatives. I am afraid I cannot repay my loan in time". She also doesn't like to borrow on her account for other people as she knows about the bad experiences of others. She said: "One of our neighbors Hasina took a loan from one NGO and loaned to another person. Later on that person refused to repay the loan and Hasina had to repay it". Her two maternal cousins help her but her own sisters do not. Each of her cousins gave her a *sharee* (women's garment) and a shirt for Mishu during the Eid-ul-Fitar festival. Whenever she needs to borrow money she borrows it from them.

This year Jolly worked for a female UP member candidate, hoping that if she were elected she would help her, but the woman failed to win the election. The woman candidate provides her and Mishu with food while she was campaigning for her during January and February, 2003. Mishu is in grade five and gets 150 taka per month from the food-for-education program, which is enough for his school expenses and clothes. She wants to educate him as she did not have that opportunity herself. She says: "I had a dream to be educated but never got that opportunity. I will educate him properly at any cost, so that he will never have bad feelings like me". Jolly did not get married again and her comment about a second marriage is: "Maybe I cannot adjust to another husband as I could not with the first. So I have decided not to marry again. Mishu is my dream. He is everything for me. When looking at him I decided not to marry again. He will be educated and will look after me". She has bad feelings about marriage, so she opted to remain single, which is why her sisters and their husbands dislike her. She is committed to Mishu's happiness and future. Jolly never got any help from the government. She does not have good relations with the politicians who provide VGD

cards to vulnerable women in the village. Her father and brother helped her before her brother got married, but the situation changed after his marriage. The negative influence of in-laws on reciprocity and support between kin is a common phenomenon in rural Bangladesh.

6.2.2 The case of Juthi

Juthi is 45 years old. Her mother left her father when she was very young but her father married again, so her maternal uncles raised her. She was first married to Kamal in 1971. The marriage had been arranged by one of her paternal uncles (father's sister's husband). Her father gave her golden ornaments at her marriage which Kamal sold during his illness. The husband died in 1989. At present she has some silver ornaments like earrings and bracelets. She has two daughters from her first marriage, Tina and Dina. Kamal was sick for five long years before he died. He had a small grocery shop in the market that he sold during his illness. In addition, he also sold 0.10 acre of land that he inherited from his father. During his last days of illness he was bedridden. Juthi started to work as a day laborer. Kamal's brother-in-law collected money and rice from the market for the family, and her daughters used to beg in the market place. Kamal left only 0.05 acre of homestead land. Juthi has become helpless with her two young daughters, Tina being ten years old and Dina eight. Two months after his death, Tina started to work as maid. Juthi's father took Dina so her stepmother could look after her, while Juthi remained on her husband's homestead.

After Kamal's death, Juthi continued to work as a day laborer and saved 8,000 taka in two years. She left that money with a neighbor man named Monu for safekeeping. Juthi had an affair with Monu and became pregnant, the affair thus becoming an open secret. This situation made Juthi more vulnerable. Monu did not marry her and refused to return the money he was keeping for her. A village trial was organized by the *matbars* and elderly persons to resolve the conflict. The verdict of the *matbars* and the elders was that they should marry, and the marriage was arranged in November, 1988. Monu had a wife in his own house, so Juthi did not go to Monu's house but stayed in her own place. Juthi's son Ruhul was born in April, 1989, and after fifteen days Monu took Juthi into his house. She stayed there for couple of days, after which Monu divorced her and gave her only 2,000 taka, which was not all of the money he owed her (8,000 taka). Monu let Ruhul stay with Juthi, while according to Bangladeshi law a son belongs to the father. Immediately after the divorce she became mentally ill. She was ill for two years and could not eat anything except green coconut and glucose water as she would vomit immediately after taking meals. Juthi's brother helped her by giving her 500 taka. During Juthi's illness, Dina came back from her maternal grandparents' house to look after her mother and brother.

When Juthi recovered she worked again as a day laborer and built a tin-shed with 1,000 taka. She got a VGD card after the 1998 floods for 18 months and had another card in 2003. She doesn't have a job during the rainy season so she covers her expenses during the rainy season with her savings from the dry season. She also borrows rice or money from neighbors, because her daughters and Kamal's brothers are also poor and they cannot help her during crises. She also reared a goat on a shared rearing basis and repays her loans by selling the goat's offspring.

Both her daughters worked in the export processing zone (EPZ) at Nabinagar, Dhaka, and they both occasionally served as housemaids. Tina stayed with Juthi and her paternal uncle arranged her marriage in 1994. Juthi was a member of BRAC groups and she borrowed 2,000 taka from BRAC for Tina's marriage. Villagers also helped with her marriage. After marrying, Tina stayed in the same homestead with Juthi. Tina bought 0.06 acre of land from

her paternal uncle's share of the inheritance. Juthi's step-brothers arranged Dina's marriage in 1999. Juthi also saved and kept 2,000 taka with her step-brothers but they did not return the money to her. Juthi again borrowed 4,000 taka from BRAC for Dina's marriage. Dina stays with her husband and not with Juthi and they never help Juthi with any money. Last year Juthi also borrowed from BRAC but could not repay that loan. She relies on her income to repay the loans.

Juthi again saved 6,000 taka and deposited it with her brother-in-law Mujib. In 2002, he helped her to take 0.05 acre of land on mortgage. Ruhul is still a minor and is a grade-five student. Neither of them is able to work in the field, so she gave this land to a sharecropper. This year she got 56 kilogram of paddy from her share. She also bought 131 kilogram of paddy from her income. Every year she buys paddy before the start of the rainy season and safe it for the rainy season when she will not have any work.

Her mother married again and had a son. This half-brother works overseas and sometimes helps Juthi with money and rice. He gave Juthi 200 taka and 37.5 kilogram of paddy when he came back. She said: "I was always poor. When my mother was alive she helped me regularly. Before she died she told my half-brother that I am his sister so he must look after me whenever I am in need. Maybe that's why my brother is helping me". Her stepmother and brothers also help her, as she had yet not claimed her share of her parent's land. Every year she gets her share of paddy from them. This year it was 10 kilograms. She says: "If I claim my land share from father's inheritance they will curse me. God has given me two hands. That's enough for my survival. As long I can work I will survive. When Ruhul is grown up he will take care of me". Now Monu wants to take Ruhul back but the boy refuses to go back to his father.

6.3 Women's coping with spouses who are ill

The spouse (either husband or wife) plays a key role in maintaining household livelihood. The household is affected if either of them is ill. The role of a husband in the Bangladeshi household is solely that of a breadwinner, while the role of the wife is equally important since she is responsible for both reproductive and productive activities. In this section I show the plight of women and men who have to care for a sick spouse.

6.3.1 The case of Munni

Munni works as a monthly-paid laborer for Gono Kallayan Trust (GKT). Before her husband Mizan's illness she was a housewife and occasionally worked as a day laborer. Mizan was a rickshaw puller and worked as a day laborer. Munni has four daughters but no son. The eldest daughter Nina (16) left school when she was in grade six and was married soon after her father became sick. The second daughter is a third grade student in the BRAC non-formal primary school, while the third one (seven years old) has yet to enroll in school. The youngest daughter is four years old.

Whenever Mizan felt sick he would visit the *fakir* (traditional healer) for treatment. The last day he felt sick he went to pull the rickshaw but could not continue because of pain. The next day he was taken to the *fakir* again but the pain did not subside. Then he was taken to the Satura *Upazila* Health complex (UHC, cost: 400 taka). They gave him an intravenous (IV) saline and referred him the Dhaka Medical College Hospital (DMCH), but Munni was afraid to go there as she didn't have enough money. She discussed the issue with Mizan's friend Rafiq and his brother Rahim and they took Mizan to the Manikganj district hospital (cost: 1,500 taka). He was admitted to the hospital and was given an IV saline and was x-rayed

twice. His condition deteriorated so the doctor at the hospital referred him again to DMCH. Munni took him to a clinic at Savar (cost incurred for ambulance: 1,200 taka) as Rafiq and Munni thought he may die before reaching the DMCH. In the clinic he had an emergency operation (cost: 18,000 taka). Mizan was released from the clinic after 15 days. For safety reasons she brought him to Satura THC where he was admitted and stayed for another fifteen days (cost: 540 taka). Additionally, as per doctor's prescription, Munni had to provide Mizan with a rich diet of pigeon and chicken soup, the cost of which amounted to about 3,000 taka. Mizan's total treatment costs were around 24,000 taka.

Munni's savings only amounted to 1,200 taka and she borrowed 1,300 taka from her sister, which was spent during their stay at Satura and Manikganj. She borrowed from her relatives and neighbors to pay for the operation. She then sought help from the villagers. Young men collected donations/money on the street for Munni. The villagers donated 3,500 taka and 112.5 kg of rice. She borrowed 2,000 taka again from her sister, 2,000 taka from one of her sisters-in-law, 5,000 from Bacchu *matbar* and 10,000 taka from Mizan's cousin.

She also borrowed 16,000 taka from different NGOs: 7,000 taka from BRAC (paid back 5,000 taka); 3,000 taka from Proshika; 6,000 taka from GKT (paid back 3,000 taka), and 3,000 taka from ASA. Munni paid back Amijuddin's 7,000 taka from this money. She then sold their land for 30,000 taka and Mizan's rickshaw for 3,300 taka. This money was spent to repay loans from different people and NGOs, and for covering family expenses and the dowry of her eldest daughter, Nina (8,000 taka). Mizan's two brothers are also poor, so they could not help Munni with money but they gave rice and moral support. She also bought 75 kilos of rice for 800 taka and neighbors provided her with small amounts of rice from time to time at times of need.

The wives of Mizan's brothers worked at GKT for a long time and they suggested that she take a job there as well. Munni got a job at GKT two months after Mizan's operation with the help of Rafiq, who had helped her from the beginning of Mizan's illness. Her monthly salary is only 1,000 taka. She works everyday from 7am to 5pm. If she takes a day off with advance notice the GKT management deducts 30 taka, but without advance notice they deduct 60 taka. Payment is also not regular. She borrows rice and other things from her neighbors and repays them when she is paid. The local union *parishad* chairman issued her a VGD card. She never buys vegetables but collects them from the GKT premises and grows vegetables around her house. Sometimes Mizan's brothers give her some small fish when they return from fishing. When Mizan became very sick and had to have an operation and could not work the situation deteriorated. She said:

When I took the job our condition was very bad. I didn't have enough food to take for my lunch so I used to fast, but my fellow workers shared their food with me and told me that there is no need to bring my own food. I shared their food for many days. My sister used to provide us with oil and salt. Other neighbors provided me with other necessities. In such a way we passed those tough times. Mizan cannot yet work hard so the whole family is depending on my income. In my absence Nina takes care of her father and the other daughters and cooks for us. During Mizan's illness Nina had to stop going to school. We had a dream to educate her but it turned out the other way. I regret that very much but we had no choice.

Nina was married four months after Mizan's illness but her husband did not take her to his house. Munni will have to pay another 7,000 taka to the bridegroom and 18 grams of golden ornaments when Nina is brought to her husband's house, which was to be at the end of year 2003. Munni expects help from the villagers and her relatives in this venture. Mizan could do

light work and went to Dhaka to work as a mason's helper. Munni thinks that she will repay all the loans taken from the NGOs when Mizan is able work full swing again but she will not give up her job at GKT.

6.3.2 The case of Mili

Mili is a 46 years-old day laborer. She is the fifth wife of Riaz (60 years). This was Mili's first marriage. She married Riaz when she was 25 years old. She married late because her father died and her brothers were too poor to find a husband for her. Her maternal grandfather scolded her mother for not arranging her marriage, so her family arranged a marriage with an old man. They did not have to pay dowry and her brothers gave her a silver chain and earrings. She has only a 15-year old daughter, Rima. Rima went to the BRAC school for a few months but dropped out just one month before Riaz's illness. She takes care of her father since her mother works outside the home. Riaz has two sons from earlier wives but they do not live with him as he married again. Their maternal grandparents took them away with them. Both sons are married now and don't look after their father. Because they don't look after him, Riaz doesn't count them as sons.

Riaz has a small piece of land (0.03 acre) where he has a small tin shed and a kitchen. Beside his homestead he has a small piece of land (0.03 acre) where he has planted bananas. His wife and daughter look after this banana garden. Mili doesn't want to do anything about the house to make it nicer, as Riaz's sons will inherit ownership after his death. Riaz worked as a contract laborer and his salary was 1000 taka per month. Riaz fainted while sowing seedlings in the field in June, 2002. He returned home when he regained consciousness and the following morning he was paralyzed. Mili thinks he was caught by "bad air", which is the work of ghosts or other supernatural forces. She gave him a massage with salt and warm oil. At first she took him to an unlicensed allopathic practitioner. He said he would not be cured with allopathic medicines, so she took him to a *fakir*. Now he is relatively better but cannot yet work normally. His left hand and legs are partially paralyzed. He can walk and perform light work, like weeding, but cannot take heavy loads on his head.

When Riaz became paralyzed they had a reserve of 94 kilos of rice that they had bought with Riaz's salary and savings. They consumed this rice until March, 2003. During Mizan's illness Monu *matbar* gave them 1,000 taka and one of his cousins gave 2,000 taka. His brothers gave them only clothes and his sister contributed 75 kilos of paddy. In March, 2003, Mili took 2,000 taka from the landlord for whom he was working as an advance payment. Riaz will have to work for him when he is well. Monu *matbar* and others helped her get a VGD card. She also borrowed 2,000 taka from two women (1000 from each). She used the money to treat Riaz, repay BRAC loans, and maintain the family. She repaid the BRAC loan on time, hoping that they would give her another loan, but BRAC did not give her a new loan as long as her husband was sick. BRAC feared that she would not be able to repay the installments. She had intended to use the 10,000 taka loan to repay the other loans. The people who lent money to her are now putting pressure on her. She is in an awkward position, saying:

When Monu matbar understood that Riaz would be unable to work soon he wanted his money back. I told him that after I would get a new loan from BRAC I would repay him. But now BRAC has refused to issue a new loan. I don't know how I will manage all these loans I have taken from villagers.

Riaz has been a beggar since November, 2002. He begs in villages other than his own during the post-harvest period. The family consumes the rice earned from his begging and has also sold some part of it to repay the BRAC loan. Riaz can do some light work, like

sowing seedlings or weeding, but this work is not always available and pays poorly. He gets work on a contract basis, not on a daily basis. On average he can earn 25 taka per day. On one occasion he worked two plots and got 95 taka, and another time he worked four days and got 100 taka. He also served as night guard for five nights and got 250 taka, but he prefers to beg because it is more profitable than working in the fields. He says:

I am a disabled person. I cannot work hard so people do not give me normal work as a farm laborer. After I started begging we do not have to buy rice. What I get is enough for us. We have to buy vegetables or other things. During the last post-harvest season (May-June) I got 112.5 kilogram of rice. That is enough for four to five months. As I cannot do normal work, this is best opportunity I have at present. But when I find some light work I also go for that as well.

Prior to Riaz's illness, Mili was a housewife. She was not allowed to work outside the house, although she sometimes worked as a day laborer but only in the village. In 1999 she took a cow on a shared rearing basis for a year, and both mother and daughter look after the cow. After that she did not work for the two years prior to Riaz's illness. After his illness she started to work as a day laborer and she now works regularly. The wife of Riaz's cousin Nazma took her to work as a day laborer, as Nazma had already been doing this work for a long time. Mili works from very early morning until noon. During this time her daughter takes care of her father and sometimes helps neighbors pluck their vegetables, so she gets vegetables from their neighbors and collects wild vegetables as well. Mili works in both road construction and housekeeping jobs, but there are problems with the housekeeping as the employers do not pay her wages on time and she must visit them several times to collect her wages. She says:

Previously, I worked as a day laborer occasionally. It was difficult for me to carry a load of earth on my head which caused headaches, but with time the pain eased away. I work for only half a day so I get 35 taka only. If I can work a whole day I could get 70 taka but it is difficult for me to work a whole day. Besides, work is not available everyday. So I could get work for only half of the month. Since I had to save money to repay BRAC, I often could not take rice with every meal but took other foods, like bread or puffed rice, to save money. We have three stomachs to fill with only 35 taka. Neighbors don't help me. They give me food only when I work for them. Day labor is seasonal; it is only available during the dry season, not during the rainy season. I don't work as a maid because people don't pay me in money but provide food only. Besides, I would have to work a whole day.

Mili cooks rice only once, at noon. They consume this rice at lunch and dinner, and at breakfast the next morning. She cooks vegetables during the afternoon for dinner and for breakfast the next day. They also eat onion and red chili for lunch. She is very worried about her future as well as her daughter's marriage:

Even one taka is very precious for us. My daughter is now grown up and I don't know how I will be able to get her married. Who will help us for our survival and daughter's marriage? I have only 4,500 taka savings in BRAC. Besides, I will get 0.05 acre of land from my parents, which I will sell to get money for Rima's marriage. The marriage will have to be postponed until I have saved enough money for the marriage expenses.

6.3.3 The case of Zohir

Zohir is a 32 year-old farmer. He is the second of four sons. His main occupation is farming but he has small grocery shop at the Golora bus stand. His mother had died three years earlier, so his father was living with him. For most of the time his father runs the shop and

also sleeps in the shop for security reasons. Zohir looks after the shop from 6 to 9pm so that his father can have his dinner at home. Zohir has been married twice. He started his shop with the dowry money from his first marriage twelve years ago. His first wife died in March, 2001. He has a son, Nuru, from the first marriage. The boy is 12 years old now. Zohir married his second wife Meher in April, 2001, just one month after his first wife's death. Nuru is very close to his stepmother and Meher and her parents also love him. Zohir owned 0.30 acre of land he inherited from his father. He then purchased a 0.45 acre parcel of land and cultivates another 0.30 acre on a sharecropping basis. Zohir has four cows – one of these was a gift for Nuru from Meher's father, who can afford it.

Meher was expected to deliver their first child in the last week of August, 2002, but as she did not go into labor then Zohir called for the local doctor who and gave her an injection. This did not help, so Zohir took Meher to a private hospital at Manikganj. She was admitted and had to have an emergency caesarean to deliver the baby. She was at the hospital for another seven days. The hospital bill amounted to 12,000 taka. Zohir wanted to sell his cattle and borrow money from moneylenders to pay the bill, but Meher's father paid it for him and advised Zohir not to sell cattle and borrow money. He proposed Zohir to repay the loan at his leisure, arguing that if he would sell cattle he would get a low price. In addition, if he borrowed he would be under pressure to repay those debts. Zohir had not repaid any money at the time of the study, saying: "It is a loan from father-in-law so I am not in hurry to repay the money". His father-in-law says: "He is my son-in-law. What I spent was for my daughter. It was my moral obligation. I hope he will repay me in time". Zohir's father opines: "I think his father-in-law has spent the money to save his daughter's life so Zohir has no moral obligation to repay this money", while Meher says: "He did not repay anything so far. I am in doubt whether my husband will ever repay it".

6.3.4 The case of Baten

Baten is a 50 year-old businessman. In the past he pulled an ox-cart, then he started a wood-cutting business in Sirajganj. There he met his present father-in-law. They became partners. In the course of time he divorced his first wife and married the daughter of his partner. After this second marriage in 1982, he moved to Satura. In the early days of his business they cut *shimul* trees and supplied them to the match factories at Dhaka. From his first wife he has a daughter, and from his second wife two sons and a daughter. Both daughters are married. The eldest son works in the textile mills at Dhaka, and his wife also works in a garments factory. They do not communicate with him. His youngest son is in grade five. In 1982 he purchased 0.16 acre of land next to his father-in-law's house and still lives there. His father-in-law died six years ago so he now runs his tree-cutting and sawing business on his own. He had also been making doors and windows for one year and selling those in the weekly market.

Baten's wife had been suffering from abdominal pain for two years. At first they thought it was gastric pain. She was taken to a *kobiraj* (traditional healer using herbal medicine) and treated there for three months. When the pain did not subside, Baten decided to take his wife to a specialist. Since there was no specialist in Satura, in November, 2001, Baten brought her to a clinic at Savar, Dhaka, where she had an x-ray. The report showed a case of complicated gallbladder stones. The costs incurred were 1,000 taka for the x-ray and for travel. The doctor advised an emergency operation. Baten mortgaged 0.26 acre of land for 13,000 taka and took his wife to the clinic for an operation. She had to stay there for seven days. The total costs incurred were 20,000 taka, including 17,000 for the operation and 3,000 for travel and other purposes. Fifteen days after her return from the clinic the wound became septic. Baten took his wife again to the Rabeya clinic. The doctor changed her dressing and

advised Baten to let his wife stay in the clinic for another seven days. Considering the costs, Baten brought her to the Satura Upazila Health Complex (UHC). She was not admitted at the THC but stayed in the house of a relative who brought her to the THC every day to have the wound dressed. Still, it cost him 2,000 taka for medicine and other incidental expenses.

Six months prior to his wife's operation his daughter had a caesarean delivery. The total cost amounted to 11,000 taka and Baten had to bear half of the costs incurred. The rest was paid by his son-in-law. He had to borrow money from different people for this, and then again for his wife's operation and follow-up treatments. To meet all these expenses he sold his land for 55,000 taka. He mortgaged land for 42,000 taka and then sold it. He spent 23,000 taka on his wife and 5,500 taka on his daughter, i.e. 28,500 taka in total.

His wife has a different opinion. She said:

Baten spent at most 30,000 taka on us and the rest of the money he invested in his shop. He also spent some money on a lady whom he calls 'sister'. I am member of different NGOs like ASA, Grameen Bank and GKT. I borrowed 15,000 taka for his shop but still he sold the land. Now we don't have any land except the homestead. If the business fails we will be poor. For the last year [in 2002] he allegedly invested a lot of money in the shop, but I believe he is wasting it on this so-called 'sister'.

6.4 Discussion of the cases

Coping with adversity is a situation for which a household cannot foresee in advance and has to take mitigation measures on an *ad hoc* basis. The cases reveal that it is the women who suffer most. The cases described in the preceding sections show that in events of adversity, women are the ones who have to cope with the situation. The death of a husband brings misery into women's lives. Whether the death is sudden or not does not make a difference. As long as the husband is alive he is serving as an umbrella and protects the women from economic as well as social problems. Once the husband dies, women suddenly do not feel secure anymore and fall sick, as is evident from the cases (6.1.1 and 6.1.2). The death of a husband or a divorce forces women with young children to take shelter at the parental house, relying on her father or brother(s). When these cannot give support, the woman has to take charge of the situation herself.

Domestic violence against women is another problem. It is a prime indicator of impending divorce or desertion, as is illustrated by the lives of Bela, Nazu, and Jolly. The violence may be psychological or physical. When women have to live with in-laws the mental abuse is part of their life. Physical violence is not rare, either. It was very common in the past and still is a social problem today. Most women think it is part of life, and that it is the legitimate authority of husband to control his wife.

Widows, deserted or divorced women, and women with a sick husband have to take charge of their family. At first they try to join in the labor market (cases 6.1.1, 6.1.2, 6.3.1 and 6.3.2). If they are barred from joining in the labor market they may force their children to do so (case 6.1.3). Such cases create a child labor problem in society. Nowadays, widowed or divorced mothers may be supported not only by their sons, but also their daughters (case 6.2.2). Re-marrying of young widows or divorced women is common. In these cases, the women's parents often take care of the children (case 6.1.3). The re-marrying of women also depends on the gender of their children. Sons are treated as capital and daughters are seen as burden. If woman has a son she often does not want to remarry but prefers to remain a widow and raise her son, hoping that he will take care of her in the future. Cases 6.1.1 and

6.1.2 illustrate this. However, this is not unproblematic. The women dream about their son doing this but later on they often suffer when their son gets married. Bela (case 6.1.1) fears about her livelihood when her son is grown-up. Sometimes, the in-laws prefer the woman not to remarry again but take care of the children, especially in cases of a son, and prevent her from leaving the late husband's house (case 6.1.2).

In most cases divorce is not a unilateral decision made by the husband but is decided upon by the in-laws and enforced upon the husband (case 6.2.1 and 6.2.2). In all cases, women returned to their parental home, where the women were well received by their parents and brothers. Problems arise when the brothers get married. The sisters-in-law see this as a burden for their own family and create problems with their sister-in-law (case 6.2.1). This also depends on the power of the wives of the brothers in the decision-making process. The in-laws of a divorced woman can make her life miserable. Divorce places women in a vulnerable position. To a large extent the in-laws' attitude governs the magnitude and quality of the kin support system. When women are married off they are entitled to some bride price, which is rarely paid during their married life but only at the time of divorce. Similarly, the bride's parents give dowry to the bride's family which has to be returned on divorce. This money combined provides some security for divorced women (case 6.2.1). Sometimes women even do not have this opportunity (case 6.2.2) and are cheated by their husbands. The case of Juthi (case 6.2.2) is a good example of this. She kept her money with her husband but he did not return it and he did not even pay Juthi's bride price. Unfortunately, this kind of situation is not uncommon.

Women also try to maintain their livelihoods through other means, for example by cultivating land (case 6.1.2 and 6.2.1). Jolly (case 6.2.1) and Rima (case 6.1.2) used to cultivate their own land with help from their son and mother-in-law, respectively. They used to hand their land over to sharecroppers when they could not do the work themselves (case 6.1.2). Sometimes they do so with mortgaged land (case 6.1.2). Additionally, the women also invest in the money-lending business. In such cases they have to rely on men to support them. For instance, for Rima it was the local chairman and for Jolly it was her father who helped them to lend money. It is difficult for women to lend money by themselves.

Women who are in a vulnerable position get a VGD card that entitles them to thirty kilos of wheat per month for a period of eighteen months. With the exception of Jolly, all the women in our case studies got such a card which helped them to support their families. To get it, they needed to have good relations with the *matbars* or UP chairmen. Jolly tried to earn support through a woman who ran for UP elections but failed so Jolly was unable to get a card. However, her son got support from the food-for-education program, which enabled him to continue his education. Rima had very good relations with the UP member and the chairman, so she got the card twice, once in her own name and then in her mother-in-law's name. This helped them to support their livelihood. Women may be barred from working outside the house by kin because of social stigma. In such cases (6.1.3 and 6.1.3) they rear livestock (goat or cattle) on a shared basis. To obtain livestock they need a network of trusted relations. Adult women who work (or want to work) in a factory face the problem that the factory management generally prefers young girls. Even when women manage to get involved in the labor market they usually receive lower wages than men. These problems add to women's vulnerability. In one case (6.1.1), the woman resorted to seasonal migration to sustain her livelihood, which is usually only done by men.

In case of a husband's illness, a woman might get support from her husband's and her own family, neighbors, friends, and the community (case 6.3.1). Some women lack this support

network (case 6.3.2). The women in the cases presented are from the same village, but while one of them got substantial support, the other did not. Support to the poor is of the patron-client relationship type. Patrons expect some sort of return from the clients. When the client fails to offer his/her services the support is withdrawn, as happened with Mili (6.3.2). Initially the people supported her, but when her husband remained sick for a longer period and the chances of him getting better were slim, the support weakened. Mili's husband sold his labor in advance to his landowner, but when the latter understood that Mili's husband would not be able to work he put pressure on Mili's husband to return the money. Mili's husband's kin and neighbors expected the couple to work for them without money, just for food. When Mili failed to do so they withdrew their support.

In times of vulnerability women may get support from the NGOs in the form of credit. The poor may borrow from kin, neighbors, friends or moneylenders first and later on borrow money from an NGO to pay their debts. This was the case for both Munni and Mili (cases 6.3.1 and 6.3.2). The end result of these arrangements was defaulting on their loans. NGO's or village organizations are careful to nominate such women for credit as, ultimately, the members will be held responsible, meaning that women in a vulnerable position lack NGO support when they need it most (case 6.3.2). Mili borrowed money from different sources with the hope that she could repay it after getting the NGO loan. When the loan was not forthcoming the situation deteriorated, forcing Mili's husband to become a beggar which is the last option for a destitute person.

Poor people in rural areas used to borrow money and have the money temporarily kept with the well-off or rich people. But the rich people often cheat the people whose money they keep, as happened in the case of Rima (6.1.2). However, she got the money back with the help of the UP chairman, thus averting a seriously vulnerable situation. This also happened in case of Juthi (6.2.2) when her husband cheated her and did not return her money.

Inheritance of land is crucial to sustain livelihood in an agrarian society. Women are entitled to land from their parents or husbands, but in practice they seldom get it. Even when women inherit land from their deceased husbands the in-laws try to regain it from the widows. This happened to Rima (case 6.1.2), but with the support of neighbors and community leaders she was able to hold on to her inherited land. This is a good example of the use of social capital. On the other hand, social stigma also bars women from claiming their inherited land from their brothers, which brings women in a more vulnerable situation (case 6.2.2). Inheritance laws that favor sons over daughters in obtaining land from their parent's properties are another source of concern for vulnerable women, as in the case of Mili (6.3.2). She even refrained from improving her house for fear that ultimately she may lose it.

Support from the wife's family is common. When the wife's family is well-off, they are considered a good source of support. Problems arise when the husband's attitude is that once he borrows from his in-laws he can delay repayment as long as he wants or not repay at all. This is a serious problem for the wife's parents, because if they put pressure on their son-in-law it might create problems in their daughter's married life (case 6.3.3). Men's misuse of money meant for their wife's treatment is another point of concern. Women can do very little to avoid such incidents.

CHAPTER 7

LIVELIHOOD SECURITY: TEMPORAL PERSPECTIVE

“Time plays the role of father, while nature plays the role of mother”
(Anonymous)

This chapter first discusses the relationships between the life course of households, their livelihood portfolios, and their economic status. This discussion is set against the background of the historical changes in agriculture, food production, socio-political conditions and gender relations, and the impact of the 1998 floods on livelihood. The second part of the chapter looks at how different types of time influence individuals and households. Life histories of people having different socio-economic backgrounds are presented to show and explain how livelihoods are maintained and enhanced, and what people do to dispel vulnerability. These life histories illustrate and explain changing gender relations, livelihood strategies, and the significance and use of social capital.

7.1 Livelihood and the household life course

In this section I look at the influence of household time by using a modified Murphy and Selbey’s model that was discussed in Chapter 3. Table 7.1 presents the relationship between the different stages of the household life course and livelihood portfolios. It seems that there is no clear pattern of a fixed livelihood portfolio in the different stages of the life course. The composition of the livelihood portfolio seems to depend primarily on opportunity and access to resources. Only the proportion of the farming households increases through the life course, while that of self-employed households decreases. Households try to own or gather land to pursue farming for their own production and consumption. A similar trend can be observed when evaluating the life histories. Another reason behind the increase in farming relates to the inheritance of land by young and growing households. Parents usually distribute their land not immediately after the marriage of their children but after a certain period of time.

Table 7.1 Livelihood portfolios at different stages of the household life course

Livelihood Portfolio	Life stages									
	Young ¹		Growing ²		Grown ³		Matured ⁴		All	
	No.	%	No.	%	No.	%	No.	%	No.	%
Farming	12	17.4	22	27.2	11	19.7	39	41.5	84	28.0
Laborer	14	20.3	22	27.2	9	16.1	7	7.4	52	17.3
Trade	11	16.0	8	9.9	10	17.8	16	17.0	45	15.0
Service	2	2.9	7	8.6	7	12.5	12	12.8	28	9.3
Self-employed	27	39.1	18	22.2	15	26.8	16	17.0	76	25.3
Others	3	4.3	4	4.9	4	7.1	4	4.3	15	5.0
Total	69	100.0	81	100.0	56	100.0	94	100.0	300	99.9

¹ households with no children or one child under five

² households with at least one child under five and children of different ages

³ households with children between 5-14 years

⁴ households with children aged 15 and above or old couples

From the focus group discussions and personal observations it is apparent that very young and young households tend to diversify their livelihood. As a result of more diversification options, more young household heads are self-employed than other groups. One key informant explained:

A man who is young and newly married is not experienced in farming. The young men usually assist their father or elder brothers. So the young men are mostly involved in different other types of work. They sell their labor and try to gather wealth for the future. When they are very young they do not work harder than necessary but when children come in their family they have to be more responsible, so they become more involved with the household and also more active. Activity levels increase with time but later on decrease because of age.

As can be seen in Table 7.2, the stage in household life course has little or no influence on the economic status of a household. Participants in the focus group discussions opined that it is the parents' economic status rather than the stage in the household life course that determines the economic status of the household. One key informant expressed this in the following way:

The son of a rich person usually gets assets and resources for his family life to start with. Still, due to bad management, many a son becomes poor. A person originating from a poor family to become rich is rare. It takes a generation to become rich. Because of a poor asset base from the start, a person who is originally poor usually suffers all through his life.

People coming from poor families usually lack education and other assets to start a promising life. They suffer an initial setback due to their parents' economic background. People coming from rich families can become poor due to poor resource management and bad habits (see case 5.11). Gender is another factor that determines the fate of a household. A female-headed household lacks entitlements and support from the community. This is why these households become vulnerable. A poor woman is usually married to a poor man, which is crucial for the future economic status of the household.

Table 7.2 Economic status at different stages of the life course

Livelihood portfolio	Life stages									
	Very young ¹		Growing ²		Grown ³		Matured ⁴		All	
	No.	%	No.	%	No.	%	No.	%	No.	%
Poor	33	47.8	24	29.6	20	35.7	25	26.6	102	34.0
Just solvent	31	44.9	34	42.0	21	37.5	46	48.9	132	44.0
Solvent	3	4.4	19	23.5	10	17.9	17	18.1	49	16.3
Rich	2	2.9	4	4.9	5	8.9	6	6.4	17	5.7
Total	69	100.0	81	100.0	56	100.0	94	100.0	300	100.0

¹ households with no children or one child under five

² households with at least one child under five and children of different ages

³ households with children between 5-14 years

⁴ households with children aged 15 and above or old couples

7.2 Livelihood changes over time

7.2.1 Changes in agriculture and food production

Saturia lies on the east side of the Jamuna river. The Dhaleshwari, a tributary of the Jamuna running west of Saturia, is nearly completely dry during the dry season. Only the Gazikhali canal is still in existence but almost dead. In the past the agriculture-based economy was heavily dependent on rain. Drought in the dry season and flooding in the rainy season were annual phenomena. The last drought to hit Saturia was in 1989. On the day people prayed for rain, a tornado hit Saturia and about a hundred people died. Main varieties of rice such as *Aush*, *Aman* and *Boro* were once grown in the study area. Additionally, wheat, sweet potato, potato, sorghum, millet, mustard, sesame, pulses like lentils and blackgram, and spices like onion, garlic, ginger and turmeric were also grown. Jute was the main cash crop and cultivated on 60 percent of the land. Nowadays, BR3, BR11 and BR29 are the main rice varieties grown in the area. Hybrid varieties of rice and maize have been introduced in recent years. Vegetables were grown at the household level for household consumption. Commercial vegetable-cultivation was introduced and more people are taking up vegetable production. Poultry production was almost entirely home-based, but commercial poultry production has boomed in the area during the last six years. There was a large fishing community in the area but fishermen are now more involved in fish trading than fishing. In the past, fishermen fished in the Jamuna and Dhaleshwari rivers and in low-lying swamp areas. Now, the low-lying areas are used for BRRI rice cultivation. Cattle rearing has increased rapidly over the last two decades due to the presence of dairy companies like Milk Vita and Aarong Milk. Private entrepreneurs also play a vital role in the marketing side of dairy production.

Saturia is known as a food-deficit area where household food security was a serious problem for a long time. The area has been deficient in food for a long time, though less so after the introduction of irrigation and high-yield rice varieties.

7.2.2 Changes in livelihood

Women's economic activities depend on their socio-economic status. Particularly, women from landless households and female-headed households are engaged in economic activities. Table 7.3 presents the range of economic activities undertaken by women at present and in the past. Paddy husking, boiling paddy, and selling it after processing at the local market once was a prime source of women's employment, but the introduction of rice mills caused this employment opportunity to be lost. Women in the focus group discussions commented on the reasons behind the loss of the work opportunities:

Thirty to forty years ago there was no rice mill and no mobile paddy-husking units. Poor women used to husk paddy by traditional means (dheki) to maintain their livelihood but that type of work does not exist any longer. Now you cannot find a dheki in the village anymore. Afterwards, poor women bought paddy from the market and boiled those to produce parboiled rice, which is the staple for the people. They used to husk this boiled paddy to produce parboiled rice to be sold in the local weekly markets. This type of work was very common, but with the introduction of rice mills, this business of boiling paddy is now almost non-existent. Some of us were involved in this type of work but we are not doing it anymore.

Table 7.3 Women's livelihood portfolios

Livelihood activities	In the past	At present
Household work as maid	Common	Less common
Paddy husking	Common	Rare
Boiling paddy and selling it after processing	Common	Rare
Gleaning	Common	Less common
Sewing quilts	Common	Common
Embroidering and stitching garments	Absent	Common
Craft manufacturing (rope, containers, hand fans, mats, etc.)	Common	Common
Cooking for laborers during harvest and processing	Common	Common
Earth-work labor sale	Rare	Common
Running a small grocery store	Absent	Less common
Sowing seedlings	Absent	Less common but increasing
Weeding	Absent	Less common but increasing
Irrigating commercial vegetable plots	Absent	Less common
Harvesting commercial vegetables	Absent	Common
Harvesting root crops	Common	Common
Post-harvest processing	Common	Common
Working in the factories such as garments, tobacco, textile mills, etc	Absent	Common
Working in NGOs	Absent	Common
Regular government service	Rare	Common
Regular private jobs	Absent	Common
Full/part-time jobs in NGOs	Absent	Common
Traditional poultry, goat rearing	Common	Common but decreasing
Traditional cattle rearing	Less common	Common
Small-scale poultry hatching, raising and rearing	Absent	Common
Cocoon rearing	Absent	Common
Vending foods at markets	Absent	Common
Vending women's and children's garments at the village level	Absent	Less common
Pottery	Common	Less common
Begging	Less common	Rare

As Table 7.4 shows, changes in the economic activities of men can also be observed. In the past, women, young boys and girls or even men from poor households gleaned rice, potato and millet after harvest. Nowadays, only potatoes are gleaned by children. Gleaning of other crops is rare due to new varieties of rice and also is not economical anymore. With the introduction of commercial vegetable cultivation, women and young children who used to help harvest in return for vegetables now do so for money. After collecting the harvest, good vegetables are sold at markets while infected or bad quality vegetables are distributed among those who helped with the harvest. Women and girls still glean wild vegetables like

jute leaves, kang kong, *helencha*, amaranth, water lily, fruits of water lily, etc., but it is less common than in the past.

Table 7.4 Men's livelihood portfolios

Economic activities	In the past	At present
Farming on own land	Common	Less common
Traditional ploughing	More common	Common
Mechanized ploughing	Absent	Increasing
Farming on rented in land	Less common	Common
Farming on mortgaged land	Less common	Common
Sharecropping	Common	Less common
On-farm (agri) day labor	Common	Less common
On-farm contract labor	Common	Less common
Non-agri (off-farm) day labor	Less common	Increasing
Non-farm (rickshaw/van pulling)	Absent	Common/increasing
Non-farm (ox cart pulling)	Common	Rare
Non-farm (boat rowing)	Common	Less common
Factory/industrial worker	Rare	Common
Mechanics	Rare	Common
Motorized three-wheeler	Rare	Common
Bus/truck driving	Absent	Less common
Fishing	Common	Less common
Grocery shop in the village	Rare	Common
Small business (vending)	Less common	Common
Medium business	Less common	Common
Service in government offices	Rare	Common
Service in NGOs	Absent	Common
Service in private offices	Rare	Common
Part-time service	Absent	Less common
Seasonal	More common	Common
Circular migration	Common	Less common
Off-country migration	Absent	Increasing
Cattle rearing	Less common	Common
Cattle fattening	Absent	Common
Commercial poultry rearing	Absent	Common
Commercial vegetable production	Absent	Common
Cutting of date palm trees for brown sugar	More common	Common
Cutting of trees for timber and fuel woods	Common	Common
Nurseries	Absent	Common
Goat rearing	Common	Less common
Dairy production	Common	Increasing
Crafts production	Less common	Common
Pottery	Common	Less common
Begging	Less common	Less common

7.2.3 Changes in the socio-political conditions

Saturia was once a Hindu-dominated area, but after the partition of India and Pakistan in 1947, many Hindus migrated to India. As a result, Saturia became a predominantly Muslim area. Another round of mass Hindu out-migration occurred after the communal riots of 1964. The 1992 demolition of the Babri mosque in India caused communal tensions, and Hindus moved to more secure areas. Despite these mass migrations, business in Saturia still is controlled by the Hindus. Hindu culture still has an influence on local culture, although it is weakening. In the past, most Hindus were educated and controlled the economy and access to education. Now Muslims have replaced them. Before Independence there was only one college in Manikganj and three secondary schools. Now there are two colleges and twelve secondary schools in Saturia. Female education has risen as result of government and NGO initiatives.

The Pakistan Muslim League (PML) had mass support in its early days. In the 1970 and 1973 parliament elections the Awami League (AL) enjoyed mass support from the people, but in 1979, people supported the Bangladesh Nationalist Party's (BNP). However, the Bangladesh Jatiya Party (BJP) took the lead in the 1985 and 1988 elections as BNP did not participate. BNP candidates have won all three parliamentary elections since 1991. People resent the AL because of its past activities and support the BNP. At present, people are fed up with the BNP, but there is no alternative. The BNP is currently in power and the present MP is also from the BNP. There is less development work in the area now. Delays in the reconstruction of three bridges damaged by the 1998 floods reflect this slowdown. Direct communication between Saturia and district headquarters was disrupted during the field survey as the diversion roads were flooded. The effect of the 1998 floods on the livelihood portfolios has been discussed in Table 5.4.

7.3 Social time

Formerly people were closely bound by social norms and values, but this is becoming less so in the changing socio-economic and political context. Once, community leaders were very influential and most disputes were brought to them for resolution, but the influence of community leaders has weakened as a result of socio-political changes. People once shared their labor and allocated time for consultation, but this is no longer the case. Formerly, there was food exchange and Muslim festivals like Eid-ul-Fitar and Eid-ul-Adha were celebrated collectively under the guidance of community leaders, which is rare at present. In the past people used the *hukka*, a special way of smoking. In the evening or during leisure time they would sit in a circle, smoke and share their views, but now *biri* (local variety of tobacco) and cigarettes have replaced this traditional custom. It is now less common to sit and smoke together, exchanging views. During past elections, people consulted community leaders and voted in a group, but not so anymore. Now people exercise their own vote. Even different members of a single household may have different opinions and support different candidates, which was unheard of in the past.

In the past women were hardly organized. Nowadays, they are organized through NGO activities and form their own organizations at the village level. The women used to gather on weekly basis for their village organization (VO) meetings. Men are now also forming organizations at the village level and in business circles. Social time used to have a seasonal rhythm. After harvest men would relax and gossip while women kept themselves busy with post-harvest processing. During leisure time, especially after lunch, women gossiped in a group and exchanged views and information. There are pros and cons for women's

gatherings; sometimes gossiping brings about quarrels among them and, as a result, exclusion from the group.

7.4 Daily time

Table 7.5 and 7.6 presents information on daily time use of women and men during normal time and harvest time. Daily time use by the women and men has different dimensions. Men are most busy during harvest time and take rest during post-harvest time, while women are busy during harvest as well as post-harvest time. During post-harvest time men from poor households support women in post-harvest work. In well-off households harvest and post-harvest activities are mostly done by paid laborers, but the women have to prepare their meals. Daily time use follows seasonality and the Islamic calendar, while the daily time use pattern of both men and women varies according to economic group. Men in the well-off group supervise the poor working for them in the field. During the summer, men go to the field in the very early morning, even before sunrise, work until noon, and go back home to rest. They go back to the field in the afternoon and work until evening. In the winter they go to the field in the late morning and work until afternoon, but during harvest time they work

Table 7.5 Daily time use of women during normal and post-harvest time

Activity	During normal time (N=150)	During post-harvest time (N=150)	Average (N=150)
Strenuous work (own farm plus off-farm employment)	1 hr	5 hr	3 hr
Non-strenuous work (off-farm employment)	1 hr 30 mins	1 hr	1 hr 15 mins
Household chores	6 hr	5 hr	5 hr 30 mins
Childcare	3 hr	3 hr	3 hr
Total work day	11 hr 30 mins	14 hr	12 hr 45 mins
Time to one's self including eating and leisure time	5 hr	4 hr	4 hr 30 mins
Sleep	7 hr 30 mins	6 hr	6 hr 45 mins

Source: Additional survey

Table 7.6 Daily time use of men during off-season and harvest time

Activity	During normal time (N=150)	During harvest time (N=150)	Average (N=150)
Strenuous work (own farm plus off-farm employment)	5 hr	11 hr	8 hr
Non-strenuous work (off-farm employment)	2 hr 30 mins	2 hr	2 hr 15 mins
Household chores	30 mins	-	15 mins
Childcare	-	-	-
Total work day	8 hr	13 hr	10 hr 30 mins
Time to one's self including eating and leisure time	7 hr	5 hr	6 hr
Sleep	9 hr	6 hrs	7 hr 30 mins

Source: Additional survey

continuously from early morning until evening. We found that men have more leisure time than women. In the afternoon or evening, when men return from the field and take a rest, women have to cook dinner. However, women usually rest after lunch. Women from poor families also assist their husbands in the field besides attending to their household chores. Men support women only in household work that women cannot perform. Men are rarely involved in childcare.

Table 7.7 presents information based on a 24-hour recall of time use by women. It shows that different groups of women follow different time schedules. The women's workload does not seem to vary much between the different groups. The situation of lactating and pregnant women is worst as they have to continue with their routine household chores and have little time for childcare.

Table 7.7 Daily time use of different groups of women

Activity	Normal women (N=1240)	Lactating women (N=271)	Pregnant women (N=49)
Strenuous work (own farm plus off-farm employment)	3 hr 11 mins	2 hr 42 mins	2 hr 32 mins
Non-strenuous work (off-farm employment)	58 mins	38 mins	1 hr 21 mins
Household chores	5 hr 54 mins	6 hr 6 mins	5 hr 59 mins
Childcare	47 mins	1 hr 57 mins	38 mins
Total work day	10 hr 50 mins	11 hr 23 mins	10 hr 50 mins
Time to one's self including eating and leisure time	5 hr 10 mins	4 hr 37 mins	5 hr 10 mins
Sleep (estimated)	8 hr	8 hr	8 hr

Source: IFPRI survey

7.5 Life histories and livelihood

The changes in economic conditions discussed in the sections above are reflected in the life histories of five people. Interviews were conducted with these people in the course of the research and are presented in their own words in the following sections.

7.5.1 The life of an orphan

Reza lives in Satoria. In 1971 his maternal grandfather gave his mother a piece of land to build a house on. This is where Reza and his younger brother Kamal currently live. Reza's father was the third among six brothers and one sister. Prior to his father's birth, Reza's paternal grandfather divided his property among his sons. Reza's father got 0.27 acre of land from his father. Reza's father was an agricultural day laborer. The land Reza's father owned was not enough to maintain his small family. Reza's is discussed below:

Childhood

My father was a poor man. He tried to educate me. When I was ten years old and a student in the first grade my father got sick. He had a gastric ulcer. He could not eat anything. He needed an operation but could not go through with it because a lot of money was needed for this surgery. After two years he died. At that time I was a student in the third grade. I was only 12 year's old and my brother Kamal was 3 years old. I had to stop going to school due to father's sudden death. I had no choice but to work as a

day laborer. I became a child laborer. What I earned was not enough for us, however. My maternal grandfather also gave us monetary assistance. Initially my paternal uncles helped us but it was difficult for them to continue their support. At that time my mother could not work outside the house. It was very difficult for me to maintain the family. The situation deteriorated by the day. We were thinking of selling our father's property. My maternal grandfather was a rich man. He had several *rakhals* [contract labors] to look after his farm. My paternal uncles [father's brothers] said to my maternal grandfather: "You are a rich man. Many people are working in your house. Take your daughter and her sons to your house. Reza will serve as *rakhal* and his mother will look after the kitchen and food processing work".

One year after my father's death my maternal grandfather gave us shelter at his house. There I served as a *rakhal* like others. My grandfather gave us food and shelter in return for my labor. He did not pay us like other *rakhals* and women laborers, but gave my brother Kamal the opportunity to continue his education. Kamal studied up to grade six. My grandfather and I wanted Kamal to continue but my maternal uncles did not allow this, so he left school and joined me in looking after my grandfather's property. My eldest maternal uncle was my step-uncle. My grandfather divorced that uncle's mother and married my grandmother again. My grandmother had two daughters and two sons. In the meantime my maternal uncles wanted their sister to be married again. My grandfather also agreed but my mother did not agree because of us. She felt that if she would get married again we would become parent-less, so she did not.

Marriage

When I was grown up I had to take care of all of my grandfather's property. My own two uncles never looked after their property. One of them was an undergraduate student whereas the other brother was busy with village leadership. Their wives also did not look after the household chores and kitchen. My mother had to look after the kitchen. She was working like a maid in her own father's house. My grandfather had a household of sixteen members including *rakhals*. It was difficult for my mother to look after the big family so my grandfather decided to arrange my marriage. They chose my wife from a nearby village. In 1967 I got married at the age of 25 years. I did not take any dowry but paid a bride price to my wife.

Children and their education

My wife was also treated like a maid, like my mother. They together had to perform all household activities from food-processing to cooking. In 1968 my first daughter Maya was born. She died in 1974 when she was 7 years old. I took her to a doctor but he could not diagnose her disease. My second daughter Sony [now the eldest] was born in 1971. She is illiterate and never went to school. My third daughter Nahar was born in 1973. My fourth daughter Rafia was born in 1975. These daughters completed fifth grade [primary school]. My eldest son Alim was born in 1978. He also completed fifth grade. He helped me in maintaining the family. My second son Zaman was born in 1981. He could not pass the secondary school certificate [SSC] exam. My youngest son Kayuun was born in 1988. He completed only the third grade and then dropped out.

Land

My brother Kamal and I were very loyal to my mother as she sacrificed her life for us. We owned 0.27 acre of land from my father's share, which my mother gave away for share-cropping. Every year we got some crops from that land. My mother sold the produce and saved the money for us. In such a way she saved 1,800 taka. In 1968, my paternal uncle

sold his 0.19 acre of land worth 900 taka to my mother. Then that uncle's father-in-law wanted to sell his 0.19 acre of land, which my mother [the next year] also bought for 900 taka. When my mother had purchased the 0.38 acre of land my maternal uncles [her brothers] thought we might have stolen their money to buy those lands, so they got very angry with my grandfather and us. My uncles wanted to kick us out of their house. Then my grandfather gave us 0.40 acre of land to build a hut [where they live now]. We stayed at my grandfather's house for nine years. In 1971 we moved to our present house. My grandmother also gave us cooking utensils and two kilograms of rice to start our independent household.

Most of the property of my grandfather belonged to my grandmother. She inherited it from her father. My younger uncle is a schoolteacher. In 1988 my uncles paid for an eye operation for my grandmother at the local school. When she was unconscious they put her finger print on a deed indicating that she had given all of her properties to her two sons not to her daughters. Guards at the school saw the incident and informed my mother's sister and me. My aunt's sons and I sued our uncles, and then the police investigated the matter. My uncles gave a statement to the investigating officer that the allegation was wrong. The officer warned them that if such deed would surface they would be punished. They agreed to give both sisters 1.20 acre of land each instead of 2.40 acre as per Muslim inheritance law. We got 0.40 acre of land for a homestead and 0.80 acre for cultivation.

We owned 0.27 acre of land from my father's share, 1.20 acre from my mother, purchased 0.43 acre [0.19 acre in 1968, 0.19 acre in 1969 and then 0.05 acre in 1973]. We purchased the last portion of land with 550 taka. In 1986 I sold 0.08 acre to give for my first daughter's marriage. In 1994 we bought 0.08 acre and 0.05 acre in 1998. In 2001 we sold 0.38 acre of land that purchased in 1968/69 and purchased 0.34 acre nearby our house. At present we own 1.91 acres of land.

Kamal's marriage

My mother-in-law [wife's mother] sent my wife's sister to my house in 1980 when my wife was pregnant. At that time she cooked on my wife's behalf. After my son's birth she stayed with us for six months then went back to her mother. In 1981 we were looking for a wife for Kamal. Our neighbors suggested that my wife select her sister for marriage with Kamal. My wife proposed her sister to me for Kamal. Kamal also liked her, so I agreed. Kamal got 1,000 taka as dowry. My wife's brothers gave their sister golden earrings, a silver chain and bracelets.

My family was bigger than my brother's family. I had three daughters and three sons, while he had only one daughter and one son. A couple years after his marriage Kamal wanted to divide our property. His wife urged him to. At first I did not like his proposal. I had a heavy burden but he didn't want to share it. My wife argued: "If they are happy let them be separated from us. Both of them are close to us – one is your own brother and the other is my own sister. So I don't want any bad relation with them. If they don't help us then Allah will help us".

In February 1990 I accepted Kamal's proposal and my mother arranged the division of our properties. After the separation she stayed with both of us alternately; half of the time she stayed at my house and the other half at Kamal's house. After one year she died.

Marriage of the children

In 1988 I gave my eldest daughter Sony in marriage, who was then 17 years old. I sold 0.08 acre of land worth 7,000 taka. I gave 5,000 taka in cash to my son-in-law as dowry and a silver chain and bracelets worth 700 taka to Sony. Other costs were about 2,000 taka. At that time my son-in-law had a tea stall. Before marriage, Sony worked in the Akij Biri [local brand of tobacco] factory and supported the family with her income. In 1992 my youngest daughter Rafia got married before my second daughter Nahar. The bridegroom's family came to see Nahar, but they preferred Rafia. We liked the bridegroom so we did not object. I gave 2,500 taka as dowry and a silver chain and bracelets worth 700 taka to Rafia. Other expenses incurred were 2,000 taka. Rafia also worked in a local tobacco factory for four years before her marriage. So she bought herself golden earrings and also paid part of her marriage expenses. She also took a loan of 3,000 taka from BRAC lest I had to spend anything on her marriage.

When I married off my first daughter, Sony, I had to sell my land, so I was very much concerned about the other daughters' marriage. My second daughter Nahar asked me not to worry about money as she is involved with BRAC. In 1989, Nahar took a loan and bought a cow. After a year I sold it to save the money for Nahar's marriage, but I actually used it for family expenses. In 1996, I married off my second daughter, Nahar, for the first time. I gave 4,000 taka in cash as dowry and a silver chain and bracelets worth 700 taka, like for my eldest daughter. Other expenses were 2,000 taka. I took a loan of 4,000 taka from BRAC and gave land on mortgage for 5,000 taka. After two years I arranged for a divorce because her husband was no good. Before marrying my daughter he had married twice before. We did not know that earlier and he was trying to marry again. In addition, he also abused my daughter. When I came to know this I decided for a divorce. My son-in-law returned the dowry [4,000 taka] when the marriage broke up. With that money I purchased 0.05 acre of land. One year after Nahar's divorce I arranged for her to marry again. My eldest son-in-law helped to find this husband. I gave 5,000 taka as dowry and a silver chain, earrings and bracelets. Other expenses amounted to 2,000 taka. I took another loan of 4,000 taka from BRAC for this marriage.

My eldest son had not yet married. I was looking for a bride for him and building him a new tin shed. In 2001 my second son suddenly fled to Dhaka with a minor girl from the adjacent union. That girl was a class-mate of Kamal's daughter. She was a student of grade six. They had loved each other for the last two years, but we did not know. They got married in Dhaka. The bride's father is a member of union council and a rich man as well. He sued seven members of my family. Kamal, the husbands of all three daughters, my eldest and second son and me was included in the charge-sheet. Then I sent different people to Dhaka to find my son and his bride. My wife said: "If the case continues you will be put in jail and we will have to sell all of our lands to continue the case. Then we will become poor. So I went to the *matbars* and asked them to settle the issue".

The *matbars* talked to the bride's father and settled the matter. I had to register 0.30 acre of land in the bride's name. The registration procedure cost me 2,200 taka. It took two months to settle the issue. I had to spend 30,000 taka for this purpose. In the meantime, I had to sell a cow worth 9,000 taka for 7,000 taka. Besides, I had to give 0.60 acre of land on mortgage, for which I got 30,000 taka. Up till now I have not been to repay that money and take my land back.

Working daughters and the role of NGOs

All three of my daughters had a job prior to their marriage. Sony, the eldest, worked in a tobacco factory for four years prior to her marriage in 1988, which earned her 20 taka per day. My second daughter Nahar worked in the Akij Biri factory for more than seven years before her marriage. The youngest daughter Rafia, however, worked in the Akij Biri factory for only two years before her marriage, as she got married early. Once my eldest daughter got work it was easy for the other daughters to get work because of Sony's good relations with the factory management.

My daughters were involved with BRAC since 1986 but I did not know that. Initially I did not like NGOs, so my second daughter did not inform me when she became involved with BRAC. When I was worried about getting my two daughters married, my second daughter disclosed their membership in BRAC. Nahar told me not to worry about their marriage, saying: "Father, do not worry about us. I am a member of BRAC. If we need money we can borrow it from BRAC".

In 1989, I took a first loan of 2,700 taka and bought a cow, which I sold for 4,000 taka after one year. It seemed very lucrative to me. At that time my second daughter was working at the Akij Biri Factory. She paid the installments. I did not have to bother but got 4,000 taka within a short time. In 1991 she took another loan of 4,000 taka and bought another cow. I sold that cow for 7,000 taka after one year to bear the costs of Nahar's marriage. In 1992 she borrowed for the third time, to pay for my youngest daughter's marriage. In 1996, Nahar took a fourth loan of 4,000 taka for her own marriage. In 1998 I took a fifth loan and used that money to repay on land that I mortgaged earlier.

In 1991 GKT came in our village. Rafia joined it, but Nahar arranged her membership in the name of Rafia. In 1994 I took a loan of 8,000 taka from GKT through my second daughter. Though she was married, she still maintained her NGO involvement from our village. I purchased 0.08 acre of lands worth 24,000 taka. From this loan I paid one-third of the price. The rest I managed through cow selling and borrowing from the neighbors. In 2001 I took another loan of 8,000 taka from GKT again through my second daughter. I sold 0.38 acre of land [joint share] worth 105,000 taka at a distant place from our home to purchase 0.34 acre of land nearby our house. Both Kamal and I will share this land. The land cost us 118,000 taka, so to make up for the deficit I had to take a GKT loan. Both brothers helped in repaying the installments.

Present situation

At present I have mortgaged most of my land. Only 0.23 acre of land is with me. I cultivate vegetable on those plots. I cultivate lady's finger on 0.18 acre of land and ridge gourd in 0.05 acre of land. The eldest and the youngest sons help me in cultivating these lands. We consume part of the produce and the rest we sell to get the cash for daily expenses. I also work as a day laborer. This year my eldest son went for seasonal contract harvesting twice, for which he got 412.5 kilograms of paddy. Nowadays he also works as a vendor, selling squash at the Manikganj bus stand, which earns him 50-60 taka per day. Besides, he also works as a day laborer. My youngest son doesn't work outside our land. Besides working in the vegetable plots, he also rears a goat and looks after the cow I own. My second son is working in the local steel mills, earning 70 taka per day, of which he gives me 50 taka. The remaining 20 taka he keeps for himself and his wife.

7.5.2 The life of a farmer who became well-off

Monir is sixty-nine years old. He is one of the well-off farmers. His wife gave birth to six sons and four daughters. Four sons and three daughters died, so now he is the father of two sons and a daughter. He is the head of an extended family. When he separated his household from his brother's in 1974, he got 1.98 acres of land. Now he owns 4.87 acres, while his brother's family sold some of their land instead of increasing their property. His two elder brothers died before reaching their first birthday, then another brother drowned when he was 7 years old. Another brother also died when he was only three. All of his sisters were junior to him. His younger sister Sony is alive, while three other sisters died of cholera. The life of Monir is presented below.

Childhood

My father's name was Zohir. I was born in 1934. My brother Mojnu was married in 1944. At that time I was very young and we were in an extended family. At the time of the India and Pakistan partition in 1947, I was thirteen years old and a third-grade student. During that time people would start their education career late. My elder brother Mojnu was illiterate. I read up to grade five and then was admitted to the sixth grade in high school but could not continue my education. By that time my father's elder brother bought 0.66 acre of land for his son-in-law, but in the dispute about the land two people were murdered. The opposing group filed a case against our family that caused the end of my education career. The case continued for 14 years and my uncles were released from the case after a verdict was given in favor of them by the High Court. When the case started we were in an extended family. In 1949, my father and his brothers were separated. They were separated because of the case suit filed against them. My father and elder brother accused their eldest brother and said: "You purchased land for your son-in-law. We are not involved but still we are charged in the case because of kinship. You have expenses to fight the case, so why should we bear your burden?"

When our family was separated my maternal uncle planned to take me into his house because he had no children of his own. My brother Mojnu said: "Uncle, look if you raise him at your house you have to give up your land on his behalf". But my uncle did not want this and so did not take me to his house. I was a good student, so my uncle wanted to educate me. When my father was separated from his brothers he got 1.50 acres of land. We took another 1.50 acres of land on a sharecropping basis, so at that time we were cultivating 3.0 acres of land. Since 1950 I have been involved in farming along with my father and his elder brother.

Marriage and children

I was married in 1953 at the age of 19. My wife was my cousin. She was my paternal uncle's brother-in-law's daughter. I did not take any dowry nor did I pay any bride price. One of my father's cousins negotiated our marriage. After four years of marriage, my first son Amir was born in 1957. He studied up to grade two. My second child was born in 1960 and was my only daughter, Ruby. She is illiterate. My second son Adel was born in 1963. He studied up to the third grade. My third son, Moin, was born in 1966, the fourth, Miju, in 1971, and the fifth, Fazlu, in 1973. Then my second daughter Poly was born in 1974, but died before reaching age one. My youngest son Reza was born in 1976. Moin passed SSC but Reza failed in this. Miju studied in college but did not pass the HSC examination, while Fazlu studied up to the fifth grade.

Family crisis

In 1973 there was a cholera outbreak. I lost several members of my family. First my younger brother Nasir, then in grade six, died of the disease. After five days my sister aged 25 years also died of cholera. After a week, my father and one of my younger sisters passed away due to the same disease. It was a very sad year for us. That year many people died of cholera. In 1975, two years after my father's death, I decided to separate from my brother. My brother Mojnu had five daughters but no son. Two of them were given away in marriage. He was partly blind and did not work hard. We were seven members while my brother's family had five members. Whenever I complained he said: "When Monir was young, I maintained my whole family. Now I am old and disabled. I cannot work like before. Besides, I have only three daughters. When I will give them in marriage my family will be small. In addition, my daughters don't eat like your sons. So I don't need to work hard".

At that time two of my sons were also working with me, but my brother's family still blames me for the separation. We had a big joint family, which was difficult to maintain properly. So I decided to split up the family. I think my decision was good for me, as I improved my situation. My two sons and I worked hard to maintain my family. I worked on my own 1.98 acres of land. At the same time I also worked as an agricultural laborer, pulling an ox cart, and was involved in sharecropping as well. My sons also worked as agricultural laborers and sharecroppers, and worked on their own lands like me. My brother's condition did not improve because he had to arrange the marriages of his four daughters.

Children's marriage and family deaths

In 1975 I married off my eldest daughter Ruby. One of my relatives negotiated this marriage. Her husband was from the adjacent Tangail district. I paid 700 taka as dowry and another 900 taka instead of ornaments. I spent 2,000 taka on this marriage in total. I sold a cow worth 900 taka and the rest I managed from my savings. I arranged her marriage ceremony at my old house. My eldest son Amir was married in 1979. At that time he was 22 years old and his wife was also from Sauria. I arranged this marriage myself. Amir's father-in-law gave 700 taka as dowry and 1,000 taka instead of ornaments. I spent 2,000 taka for Amir's marriage. Amir has three daughters and two sons. My second son Adel was married in 1989 at the age of 26. A matchmaker mediated this marriage. Adel got 4,000 taka as dowry and 3,000 taka instead of ornaments from his father-in-law. Adel invested it in the moneylending business at a rate of five percent per month. At present his capital amounts to 35,000 taka. He is still running this business. Adel's only son is in grade four and his daughter is in grade one. He also worked as a seasonal day laborer in a sand boat in Dhaka. Between 1983 and 1993, six years before and four years after his marriage, he worked there for six months in a year, giving me 3,000-5,000 taka per year.

My sister Sony died in 1990. My mother died in 1991. My mother lived alone in our old homestead for ten years before she joined me two years prior to her death. She dreamt that my father advised her to stay with me, so she did. She was a very adamant lady, who was often angry with me. She did not like her sons' wives to dictate to her so she did not like staying with either of her sons. Me and my brother Mojnu paid all her expenses. Her grandsons always visited her so she never felt lonely. Before her death she was very sick, almost bed ridden. I took care of her as well as I could.

Overseas migration and granddaughter's marriage

In 1996 my third son Moin went to Saudi Arabia. He is still working there. I paid 105,000 taka to send him there, which I collected by selling paddy [20,000 taka], borrowing from BRAC [10,000 taka], mortgaging 1.20 acres of land [35,000 taka], mortgaging from the Sonali Bank on 1.00 acres of land [25,000 taka], and by support from my eldest and second sons, and my wife's brother [5,000 taka each]. So far Moin has sent 150,000 taka and goods worth 15,000 taka. With that money I purchased a ploughing-machine [7,000 taka], paid for the expenses of the marriage of Amir's daughter [10,000 taka], repaid loans, took the mortgaged lands back [70,000 taka], and purchased 0.27 acres of land for 65,000 taka. I spent the rest of the money and my savings for the registration of the land. In January 2001, Fazlu went to Saudi Arabia. Moin sent a no-objection certificate [NOC]. I spent 40,000 taka for air fair and other expenses. I took a loan of 22,000 taka from Sonali Bank and gave 0.46 acre of land on mortgage. When Moin sent money I repaid the bank loan. So far Fazlu has sent 115,000 taka and goods worth 10,000 taka. I added another 10,000 from my savings and with that money I built three tin-sheds.

Careers

My elder brother Mojnu was an ox-cart puller. Immediately after my marriage he got an eye problem so I took over and started my working-life as an ox-cart puller. This work is done during the dry season [October-May], and is done on a sharing basis. I got a share of one-fourth of the goods carried. When I stopped in 1988 I had done this work for 35 years. At present my sons use the cart to bring paddy from the field after harvest. Sometimes other people also rent my cart to carry their paddy. During July to October I purchased jute from the villages and supplied those to the jute businessmen [brokers] at the weekly markets. I bought the jute partly on credit from the farmers at the village level. But we had to supply it to the brokers on credit ourselves. They sold it to the Jute Mills at Narayanganj. When the brokers had been paid their bills they would pay us, after which we paid the farmers back. Since this caused problems at the later stage, I stopped the jute business.

In 1975, after 20 years, I was forced to stop the jute business, as it was no longer profitable. In December, 1975, I moved to my new house. The old house was too small; I bought this homestead of 0.24 acre of land with two houses from a Hindu family who had migrated to India. I paid 16,000 taka for the house. I had savings of 6,000 taka from the jute business, sold two tin-sheds of the old homestead for 4,000 taka, sold a cow worth 500 taka, gave 0.28 acre of land mortgage with 1,500 taka and borrowed 4,000 taka from a jute businessman [broker]. At first I sold my tin-shed to a jute businessman [broker], but later on he did not take the tin-shed which he had already paid. I am repaying him slowly over a two-year period from the savings from cart pulling. My fifth son Reza was born immediately [January, 1976] after I arrived in this new house. I have the strong belief that my fate changed because of Reza's birth. In 1976, after I stopped the jute business I became separated from my brother Mojnu. Then I started the paddy business. As in the jute business, I also bought paddy from farmers in the village during May to sell it during August and September. In this business there is no provision of credit. I continued this business for five years.

I have been growing vegetables on a commercial basis since 1977. I have my own transport so it is easy for me to sell my produce at weekly markets. I grow vegetables, like lady's finger, ridge gourd, and pumpkin, on 0.25 acre of land. I am still growing vegetables. In recent years I can make a profit of up to 4,000-5,000 taka per year. I

started IRRI rice cultivation in 1985 but I had to rely on others for irrigation, which I did not like. Besides, it cost me too much. So I purchased an old ploughing-machine for 7,000 taka from Mojnu's son-in-law. The old machine was out of order in 2000. I sold the old one for 4,000 taka and purchased a new machine for 11,000 taka, using the money sent by Moin from Saudi Arabia to make up the difference.

Land

In 1972 I bought 0.35 acre of land with taka 1,000. I collected that money through mortgaging 0.50 acre of land. I cultivated those mortgaged lands on a sharecropping basis. I saved money from cart pulling and repaid the money to take my land back from the mortgagee. Upon separation in 1975, I got 1.98 acres of land and 0.33 acre belonging to my sister Sony. In 1975 I purchased 0.80 acre of land. For this purpose I sold 0.43 acre of not very fertile land and mortgaged 1.20 acres of land for 25,000 taka. I also cultivated those mortgaged lands on a sharecropping basis. I saved money from cart pulling, the jute business and selling paddy, and paid the mortgagee back to get my land back. In 1976 I bought my new house for 16,000 taka from the Hindu family. I collected the money by mortgaging land, selling my old house and savings. Later I purchased more land: 0.44 acre in 1988 for 52,000 taka. I took a mortgage at the Sonali Bank [10,000 taka for 0.46 acre] and took another mortgage [42,000 taka] for 1.20 acres. I cultivated the mortgaged lands on a sharecropping basis.

In 1992 I purchased 0.23 acre of land for 25,000 taka. To collect this money I sold a cow worth 5,000 taka, took a loan of 5,000 taka from BRAC, used income from Adel's sand-boat work, and used the rest from my savings. In 1993 I bought 0.33 acre of land for 52,000 taka, for which I took a 10,000 taka loan from the Sonali Bank again, giving 0.46 acre on mortgage for 35,000 taka and the rest from my savings. In 1994 I bought 0.40 acre of land for 53,000 taka. To collect this money I gave 0.70 acre of land on mortgage with 35,000 taka, took a loan of 7,000 taka from BRAC and Adel gave me 5,000 taka from his sand boat work. In 1995 I bought 0.25 acre for 52,000 taka. I took a loan of 10,000 taka from the Sonali Bank again, giving 0.40 acre of land on mortgage for 20,000 taka, took a loan from BRAC [7,000 taka], and used my savings [5,000 taka].

Moin sent 150,000 taka from Saudi Arabia. I used around 100,000 to repay loans incurred on his behalf. With the rest of the money I purchased 0.14 acre of land in 1999 with 56,000 taka. I took a 10,000 taka loan from BRAC, sold a cow for 6,000 taka, used Moin's money [25,000 taka], and the rest was from my savings. In 2000 I purchased 0.11 acres of land for 40,000 taka. For this purpose I took loan from BRAC [10,000], mortgaged 0.50 acres of land for 20,000 taka, and used the money sent by Moin [10,000 taka] and the rest from my savings. In 2001 I bought the last piece of land [0.13 acres] for 52,000 taka, for which I took a 10,000 taka loan from BRAC, used Moin's money [15,000 taka] and the rest from my savings. I built two new tin-shed houses with 80,000 taka for the two sons. Fazlu sent this money. I also installed electricity and all my sons' families are now using electric fans. I have now six cows with two calves.

NGO involvement

My eldest son Amir's wife Moni has been involved with BRAC since 19991. She regularly drew loans from BRAC for me. She took her first loan [2,000 taka] in 1991. I bought a cow with that money. In 1992 she took a second loan [5,000 taka] to purchase 0.23 acre of land, a third loan [7,000 taka] to purchase 0.40 acre, a fourth loan [7,000 taka] in 1995 to purchase 0.25 acre and a fifth loan [10,000 taka] in 1996 for Moin's migration to Saudi Arabia. In 1997 and 1998, she took a sixth and a seventh loan of 10,000 taka each to

take back the mortgaged land. In 1999 she borrowed 7,000 taka to buy 0.14 acre, and after that 10,000 taka to buy 0.11 acre of land. In 2001 she took a last loan of 10,000 taka to purchase 0.13 acre.

Present situation

Now, I control all the resources of my family. My sons are engaged in work and have to surrender all their income to me. I told them that if they do not follow my orders I will not give them any share from my assets. Problems with the sons' wives never arise in my family. My wife controls her daughters-in-law with a firm hand. My wife controls consumption and I control production, and I will do so as long I can.

7.5.3 The life of a deserted woman

Nadira is 45 years old. Her house is in Kamta union and her father's house is in Janna. Her maternal grandfather's house is also in Kamta. She lives with her mother and son. She has one daughter and one son. She works at a local tobacco factory for six to seven months each year. The rest of the year she is unemployed or works as a day laborer. She has a lot of experience in her working career. Below the life of Nadira is presented in her own words:

Childhood

I was born in my maternal grandfather's house. My mother left her husband and went to her father's house when she became pregnant. My father had a problem in one eye. My mother did not like her husband and did not want to stay in his house. My father tried several times to take my mother back but she refused. Her husband visited her every eight to ten days. This situation continued for three years, then my grandfather asked my father to divorce my mother, so my father divorced my mother and married again. I saw my father when I was ten years old. My mother had two sisters and two brothers. She was the second daughter. Her brothers were younger than their sisters. My grandfather was a poor man. He was landless and worked as a day laborer in a rich man's house. My mother used to work there as a maid, in return for which we were provided with food three times a day. She had also worked in that house before her marriage. As my mother was not healthy, I helped her, even though I was only five or six years old. When I was three years old my grandmother died. My grandfather did not marry again, so my mother also cooked for my grandfather. My mother maintained my grandfather's family. When both of my uncles married they no longer required my mother. They started behaving differently. We had to leave the household but my uncles allowed us to stay in a small hut on their household premises. My mother then started working as a day laborer.

Marriage and in-laws

I was married in 1973 when I was 14 years old. My father-in-law came to a neighbor's house to see a girl for his son. He did not like that girl. On the way back he saw me. On that day he met with my grandfather and told him that he wanted me for his son, and then my husband also came to see me. My husband was handsome and my grandfather liked him. After a few days they settled the date of marriage. They wanted 500 taka as dowry but my grandfather gave them 250 taka and a silver chain necklace. My mother bought an old *sharee* [traditional women's dress] with 30 taka for my marriage ceremony. I was married during the flood period [the rainy season]. My father-in-law's house was 12 km away from our house, so they took me to their house by boat. I had a step-mother-in-law. She was my father-in-law's third wife. For breakfast she gave me water-rice with green chili. During lunch she gave me rice and a small fish. I did not expect such treatment as a new bride, so I left that house in the afternoon by boat. When my father-in-law saw me that [first] time I wore my aunt's [uncle's wife] *sharee*. That was a costly

one. When he saw me wearing an old *sharee* in the marriage ceremony he scolded me for that. This continued for a long time. When my father-in-law or his brother visited our [grandfather's] house at that time, my mother served them only rice and an egg. For that they also scolded me. However, my husband did not say anything about those things.

Children born and family life

My daughter Moina was my first child. She was born in 1975, after two years of marriage. When I was pregnant I could not eat anything. Whenever I ate, I vomited. At that time my father and mother-in-law went to mother-in-law's father's house for two weeks. My mother-in-law left only wheat for me but no rice. My husband got angry with them and left that house. We came to our grandfather's house and cooked separately for ourselves. Fifteen days after Moina's birth, I went back to my father-in-law's house. I then started cooking separately from my father-in-law. My second child was a son. He was born in 1977 and his name was Rahim. He died when he was only five years old. My youngest child was Mizan. He was born in 1984. Moina is illiterate but Mizan studied up to the ninth grade. It was difficult for me to pay his school expenses. I had to pay fines as I always paid his tuition fees too late. Still, I tried to continue his education but he stopped going to school. Mizan started assisting an illiterate rich person in managing his accounts.

Divorce

When Moina was about ten months she got scabies. One night Moina was restless because of her scabies. I could not control her so I slapped her and she started crying. In the meantime, my husband was back at home. My husband's brother's daughter complained against me for slapping Moina. My husband got angry and slapped me. I also started crying. Then my husband's elder brother said that I should be beaten and then tied to drown in the river, after which they would let my maternal uncles know that I am dead and then hand over my dead body.

I left my husband's house and went back to my grandfather's house. When my husband came to visit me at my grandfather's house my mother scolded him. He informed his father and brothers about this incident. They all decided that they would not take me back. After three months I came to know that my husband had divorced me and married again. When I came to know this I cried all the time. One of my mother's brothers-in-law went to my father-in-law's house and found my husband with a new wife. My father-in-law told him that my husband had divorced me. My maternal uncles and cousins went for a settlement but my husband's brother said that they did not want any settlement, that his brother had divorced me and that the decision was final. If we did not accept it, we could go to court. They thought I would not have enough money for a court case. Then my relatives went to marriage register's office to check whether my husband had really divorced me. They found that my husband had divorced me but had not sent me an official notice. I discussed the issue with our *matbar*. He advised me to bring the case to court and helped to file a case in court. I filed two cases: one for my bride-money and living expenses, and the other for marrying for the second time without prior approval from the first wife. I sued against twenty people from my husband's family. The case continued for more than a year. I got the verdict against them. Then my father-in-law told the judge that they were ready to take me back. I went back to my father-in-law's house. For five days I stayed in my husband's second brother's house. Then I stayed with my husband and got pregnant again and went back to my grandfather's house, where my son Rahim was born. Forty days after Rahim's birth, I returned to my husband's house.

After one year I was back in my grandfather's house again, as my husband abused me and did not take care of my son and daughter properly.

Stay at the uncle's house and independent life

Finally, I left my husband's house in 1978 and I stayed at my uncles' place with my two children. At that time my mother was also staying with them. For some time I worked as a day laborer. My uncles' wives did not like me and my two children to stay there, so occasionally I sent my daughter to my husband's house. I told him that my uncle's wives did not allow my children to stay with me. Initially we gave them a kilogram of rice but my aunts said: "You eat not only rice, but also vegetables and curries of fish or meat, but you give only rice. You better eat separately with your own [family]".

In 1979, when Rahim was two years old, my uncles separated me and my children from them. I still can remember the first day's experience of our cooking separately, even today. I collected amaranth stem and cooked those as vegetables. While I worked as a day laborer, my mother took care of my children and cooked for us. My mother stayed with my uncles' family and would eat with them. Then they objected about my mother taking care of my children and cooking for us. My grandfather died in 1981. My uncles remained in a joint-family household for two years, and then they split up. They decided that from then on my mother would join my elder uncle and eat in his family, while my younger uncle would provide her with clothes. This arrangement continued for six months, then my elder aunt start objecting about the arrangement. The village leader advised my mother to stay with me because, ultimately, her brothers would not look after her, which would be very awkward. He said that her daughter, meaning me, is the one to take care of her because, as he said, "After all, she is your daughter". After Rahim's death in 1983, my mother joined me, and since then we have been staying together.

Death of a son and reunion with husband

In 1983 I visited my mother and went to work as a day laborer. At around noon I heard that Rahim was unconscious. I came home and took Rahim to the traditional healer, who did not give any treatment and said that my son had tetanus. My mother and I did not have enough money with us. We took Rahim to Manikganj district hospital, where he was given intravenous saline and injections. His shivering subsided but he became very weak. At night his condition deteriorated. I asked for money from my uncle, who went home to fetch it. The doctors prescribed new medicines, which we bought, but Rahim had passed away by that time. He died at the age of six.

When Rahim was admitted I sent a message to my husband, but when he came Rahim was already buried. My husband came to my cousin's [uncle's son] house and did not meet me. After five days my husband came again and wanted to talk with me but I refused. My aunts suggested that I talk with my husband and eventually I agreed. My husband gave me consolation and said: "Don't think about our son. If Allah wants it, you will have another son". I replied: "When you don't stay with me anymore, how will I have a son?". My husband wanted me back in his house. But my uncles said to my husband: "We will look after Nadira and marry her off again. How long will she work as maid? She needs a family". My husband begged my uncles but they refused. Then my husband sent one lady [his neighbor] and her husband and one of his sister's sons to negotiate with my uncles. They met our village-leader and settled the issue. My husband was back to me four months after Rahim's death, saying: "Nadira will stay at grandfather's house and will do any work for him. I will visit and assist her with money from time to time". He stayed with me for only one night and I got pregnant again. After that my husband did not show

up. So I went to my husband's elder brother's house and called my husband. My husband met me and promised to meet me the next day but he did not show up. I started to work as a day laborer. It was very difficult to work but I had no choice. I got so tired at the end of the day that I asked others to carry my bucket and spade.

My youngest son Mizan was born in 1984. Three months after Mizan's birth, my husband came to visit me. From then on he visited me every two to three months, but in 2001 he stopped seeing me. On the 3rd of June, 2003, Mizan met his father and brought him to my house. He stayed for two nights and promised to visit me again every week, but he did not keep his promise. His second wife does not allow him to visit me. Once she threatened to kill him. That's why he is afraid to visit me.

Inheritance

My father-in-law gave 0.20 acre of land to his grandchildren [Moina and Rahim], but my husband's elder brothers were using it. The second brother of my husband planned to build his house on that land. I bargained with my husband's family and got 0.12 acre of land. Five years ago I sold it for 24,000 taka. I took 0.66 acre of land on mortgage with that money. My daughter-in-law re-mortgaged that land and spent the money on gambling.

My father died five years ago. He left 0.66 acre of land. I have one stepbrother and two stepsisters. I will claim that land but will not force them. If they willingly give me my share I will take it, otherwise not. My mother said: "It's up to you. I have no share but you do. Whatever you want to do with that share you have to decide on your own. I prefer you not doing anything that hurts them. You must talk to them about this matter".

Daughter's marriage

I arranged the marriage of Moina with a relative of my husband in 1989. My husband gave his son-in-law 2,500 taka as dowry. The house where I worked as a maid gave me 2,200 taka. With that money I purchased 6 gram golden earrings and a sharee. I could not attend the wedding because my husband wrongly informed me about the date. Later on I gave a wristwatch to my son-in-law. He drowned. Perhaps he was unconscious while he was taking a bath in the river. I wanted to take his dead body for post mortem but my husband's relatives objected. They did not even allow my daughter to come with me. Before her marriage, Moina had worked for seven months as a maid in the house of a police sergeant, so my husband's family was afraid. They thought Moina might meet with the police sergeant and file a case against my husband's family. They did not allow Moina to meet me for three months after her husband's death. When Moina became very sick I went to bring her to my house, but my husband's family did not allow her to come to my house. The police sergeant was transferred by that time. When he came to visit his old working place, I met him and told him the story. He called the chairman of my husband's union and sent for Moina immediately. They sent her to my house. The police sergeant gave 2,000 taka for her treatment. She mourned so much for her husband that it made her sick. She became very weak and could not eat anything. I treated her and she became well. When she became well she went to work in a garment factory at Dhaka. There she had an affair with a man. Three years after her husband's death she got married again. I liked that husband, but the marriage lasted only for three months, as he deserted her.

In 1992 she started to work in local tobacco factory. There she met her present husband. They first had an affair. I did not like this man and I objected to the marriage, but my

daughter liked him, so I could not prevent her from marrying him. She fled to the man's maternal uncle's house where she stayed with this future husband for three nights. After three days the man's family informed us she was there. I went to the husband's house and they were married there. He is very handsome but lazy and his character is not good. He used to play cards for money and lives on what my daughter earns. Moina visits me every month for a couple of days. At present she is working as an attendant [aya] of patients in a private hospital in Manikganj. If she brings a patient the hospital authority gives her some commission. Before, she stayed at her husband's house, but since she took the job in Manikganj she lives mostly with me. Her husband visits her from time to time.

Illness

In 1994 I was very sick. First I was taken to a private doctor. I fainted in the doctor's chamber. The doctor advised me to go to the Manikganj district hospital. I was accompanied by my daughter and a cousin. I fainted again upon arrival at the hospital and was in a coma for three days. My daughter was always with me. The first time I was in hospital for seven days. The doctor said that I had typhoid fever. After two days at home I was admitted to the hospital again for twelve days. This illness cost me 3,000 taka. My daughter and her husband paid the bills. I suffered from this illness for one month. Later on I paid them back.

When my daughter was six months pregnant her husband sold her golden chain to play cards. When she protested he beat her severely and hurt her in one eye, after which she was admitted to the hospital. I brought her from the hospital to my house. In 2000, her daughter was born in my house. Forty days after the delivery she got the eye problem again. She had a white spot at the corner of her eyeball, which gradually grew larger. I first took her to Manikganj, then to Savar. The doctor told us that this problem could not be cured. Then I took her to Islamia Eye Hospital at Dhaka. She has been treated for three long years, but there is no improvement. The costs incurred for treatment are about 20,000 taka. The doctors said that it was too late and ultimately her eye will be blind. Her husband did not pay any money for her treatment. I spent 7,500 taka from my savings and Moina spent 5,000 taka from her savings. We also borrowed from my cousin [5,000], my mother's eldest sister [4,000] and her younger sister [2,000]. We repaid that money with an interest rate of five percent per month.

A lawsuit

For my daughter's treatment, we asked for money from her husband since we could not bear the burden. He refused to pay anything, so I advised my daughter to file a lawsuit against her husband. We sued Moina's husband for domestic violence and for not paying living expenses and bride price. We complained that he does not work, but gambles and abuses his wife. My daughter has to work for her livelihood. Then I did not allow my daughter to visit her father-in-law's house and even did not allow her husband to visit my daughter. He then took poison once but survived and tried again to commit suicide by hanging himself. I was afraid about my son-in-law's attitude. If he committed suicide we would be in trouble, so I settled the dispute with him and withdrew our lawsuit.

The neighbors' version about the lawsuit is that when Nadira and Moina sued Moina's husband, Moina's in-laws also sued Moina, stating that she is characterless and has an illegal relationship with one of her cousins, Zafar, making him lose interest in his marriage. The neighbors told Moina that both her mother and grandmother were unable

to live with their husbands. If Moina's daughter would follow that example it would create problems with her daughter. Moina was convinced and returned to her husband.

Son's career and marriage

My son stopped his studies in 1998 while he was in grade nine. At first he worked as an assistant carpenter. He earned 500 taka per month and worked for one year. He then went to Dhaka to work there. After one month he fell ill and came back home, then he joined the local steel mill. He knew a person working at the steel mill who helped him get this job [see Case 5.12]. He earns 2,300 taka per month and has been working there now for the last two years. He gives me 1,500 taka, saves 200 taka at the office, and keeps the rest for his incidental expenses.

I want to get my son married but he occasionally shows interest and at other times says he will marry after five years. He wants to get settled first. He liked one girl from the neighborhood but her parents did not like my son, as we are poor. They are rich and they married their daughter off to a rich man. The girl's mother blamed my husband's family for not giving her daughter in marriage to my son. I saw another girl for my son. We wanted 30,000 taka as dowry but they wanted to give only 5,000, so I did not agree. However, the girl's family has reservations about my father-in-law.

Careers

I first started my career as a day laborer in 1976. For a couple of months I also worked as a cook in a canteen for factory workers. They gave me 300 taka, and food for my son and me three times a day. At that time I sent my daughter to her father's house, and then I started to work as a day laborer. This work is available during the winter and summer [November-May]. The rest of the time I have to look for different jobs or I have to live from my savings. In 1979 I worked in a rice mill during the rainy season [July-September]. I was engaged in processing work [boiling and drying], working in a group of four women on a contract basis. We got two taka per 37.5 kg of paddy processed and, additionally, 3 kg of rice per 60 kg of paddy. We shared the money and rice among ourselves. Moina used to take care of Rahim and I breast-fed Rahim from time to time. I even had to work at night. I worked there for two years.

My aunts did not like my children and me to stay with them so I wanted to go away from them. I talked to the manager of a local tobacco factory. He took me to his sister's house at a distance of 40 km away from my house. I left my daughter at her father's house. Rahim and I stayed in that house for three years. They did not pay me but provided us with food. Each month I visited my mother for a couple of days. During this period I worked as a day laborer for money, as my son wanted to eat foods like biscuits and sweets. After Rahim's death in 1983 I did not work as a maid. For the next five years I worked in a tobacco factory. Each year I worked there from March to August. The rest of the time I worked as a day laborer. In the tobacco factory I worked from 9 a.m. to 5 p.m. and got 18 taka, while as a day laborer I got 25 to 30 taka.

In 1993, when BRAC could not provide me with a VGD card, the manager suggested that I raise silk worms. At first I did not agree as I was working in the tobacco factory and I had no experience in worm-raising, but he said: "Our people will assist you. You just accept my proposal". I was scared about worms so my mother and daughter looked after the worms. I could not make any profit from this venture so I never raised worms again. The next year BRAC gave me a VGD card. In the same year my mother got a job as guard for the mulberry trees. She got 85 kg of wheat per month. A team came from

the head office and saw my mother guarding the trees. They objected about my mother doing the job because of her age. Then the local office put me in charge. I did this work for one month, then I complained to the local BRAC authority that it was not possible for me to work as a guard, as I have to earn money for my family and for repaying installments. BRAC then reinstalled my mother as a guard. In 1995 I worked in the GKT. There I was engaged in ring production for slab latrines. I worked in a group of four women. I got twenty to thirty taka per day, depending on production. I worked there for only three months but stopped because the work did not suit me.

For the last twelve years I have been working in a tobacco factory. At first my daughter got a job and then I followed her. I got my job because of my daughter. She convinced the management. Each year I work in the factory for six months. The rest of the year I work mostly as a day laborer. When I started this job my daily payment was 22 taka and at present it is 68 taka. Sometimes I also earn overtime for extra work. I also work during holidays. I save money for the rest of the year from my wages. It is a very difficult job. The place where I work is very hot and the smell of tobacco is suffocating. This year I could not work as a day laborer because of a gastric problem.

NGO involvement

I have been involved with BRAC since 1986. Initially, I was a member in one BRAC area near my house. In 1986 BRAC provided me with a VGD card, for which I got 30 kilograms of wheat per month. In 1988 I took a first loan of 3,000 taka from BRAC. I used it for the moneylending business. I got 300 taka per month as interest. The next year I took another loan of 5,000 taka. I repaid all the installments and kept some cash in hand. In 1990 I took another loan of 7,000 taka and planned to build a house at grandfather's homestead, but my aunts raised objections about building a house on the premises, so I could not build the house and kept the money with one of my relatives. After a few days, a BRAC officer came to investigate whether I had built my house. When they found that I had not build any house he questioned me about the matter. I told him that I did not spend the money but kept it with my relatives. The officer then inquired with my relatives. When my story was confirmed, he permitted me another loan of 3,000 taka in my mother's name. In 1991 I purchased 0.06 acre of land for 14,000 taka. I paid 9,000 taka to the land owner and still owed him 5,000 taka. I paid him back in installments. Then I moved my hut from my grandfather's house to the new land and built another shed with jute stick walls and a polythene roof. In 1993 I took another loan of 5,000 taka but could not repay it, so BRAC took the money from my savings and terminated my membership. In 1996 I took a new VO [Village Organization] membership from another area office in a different village. I am still a BRAC VO member there. In 1997 I took a loan of 2,000 taka and in 1999 a loan of 5,000 taka. In 2002 I took a loan of 10,000 taka from BRAC to build a tin shed with four rooms.

In 1993 I got involved with Proshika, and in 1994 Proshika gave me a house-building loan of 9,000 taka, which they provided in the form of ten pieces of tin and six poles. I had to pay a 120 taka installment per month. I purchased bamboo poles and hired a carpenter to build my house, costing an additional 2,500 taka. I took the money from my savings. After four years I purchased 0.02 acre of land adjacent to my present house from the same owner. I also paid him in installments. In 2003 I took loans from different NGOs. At first I took loans from BRAC in 2002, but it was difficult for me to repay BRAC installments so I borrowed 9,000 taka from GKT and kept that money to pay the installments. I am also a member of Bureau Tangail and borrowed 5,000 taka from there to lend it to my daughter's father-in-law.

Bad experiences in getting a loan

When a BRAC officer sanctioned a loan in my mother's name in 1991, the group leader and members of the village organization [VO] disagreed; as my mother was 60 years old [BRAC did not provide loans to women aged over 55 years]. They feared that if she died then I would be in trouble and could not repay installments, so I did not get that loan immediately. After two months when the officer visited me again I told him that I did not get the loan because the group leader and members did not agree. The officer then gave me loan of 3,000 taka that night in my mother's name. When the group members came to know that my mother got a loan in spite of their opposition they all got angry with us. As a result, the next year I did not get a new VGD card. Then the BRAC officer became angry with the group, as they did not propose my name. He said: "Nadira's family is the neediest family and you skipped her name, so I will not issue any card to this group. We work for the poor, not the rich".

Present situation

Now, I still work in the local tobacco factory. I took loans from different NGOs in 2003. Moina borrowed 5,000 taka from Grameen Bank to lend 10,000 taka to Moina's father-in-law at an interest rate of eight percent per month in somebody else's name. We did so because Moina's father-in-law took loans from different persons and did not repay them in time and they sued him. The police came to arrest him, so he needed money to avoid being arrested. I also have two other rooms that I rent to people for 500 taka per month. I want to rent new rooms as well and earn another 1,000 taka. When I get 1,500 taka from renting I will not work as a day laborer anymore. I will work only in the factory. Now I am getting older so I need to take some rest.

7.5.4 The life of an ever-working woman

Zohora is 60 years old. Her husband died 13 years ago. Her father's house was at Fukurhati, a village just 2 km away from her husband's house. She is living in her husband's house but separately from his sons. Though old, she still has to perform many of her son's household chores. She said: "I worked in my father's house, worked in husband's house and now I am also working in the houses of my sons". Below the life of Zohora is presented in her own words:

Childhood

I was born in a poor family in Fukurhati, Satoria. My father Rajab was an agricultural day laborer. He was landless and served as a rakhal for couple of years. He also worked in a sand boat. My mother Rahima also worked as a laborer and as a maid. My father married three times. My first mother died, leaving one son and a daughter. My father married again and that wife left him with a daughter. My father then married for a third time, with my mother. They had three sons and two daughters. I was the eldest. Our family depended on my father's income so we faced hardship. We could only have one meal of rice a day. The days my father did not have work we had to fast. As I was the eldest, I had to take care of my brothers and sisters. We had only one tin shed where we all lived. My father had three brothers. My uncles' economic conditions were better than those of my father. My grandfather had divided his land among his sons. The land my father got lost in the river due to erosion, so my father became landless. When my father went to work in a sand boat, my uncles looked after us, helping us sometimes with paddy and vegetables. I am illiterate. When I was a child, there was no school in our village. Today there is at least one school in each village, either from an NGO or the government. Apart from this, my father had no means to send me to school because we were very poor.

Adolescence

When I became older I had to look after the family, as both my father and mother were working at different houses as laborers. I also gleaned paddy and other grains from the fields and made mats from date-palm and coconut leaves. My sister Ranju helped me. It took ten to fifteen days to make a mat and my father sold them at the market for only two to three paisa [one taka is equivalent to 100 paisa]. My brothers were younger than me so they could not assist my father. I had to cook and performed all the household chores. My mother taught me this. She said: "You are a girl. After a couple of years you will be married and will have to work in the house of your father-in-law. You must learn all household chores so nobody can complain about you". My mother raised me in such a way that I would be ready for marriage and start my own family life. I knew from childhood on that I would be given in marriage, as I am a girl, so I got ready for it.

Marriage and family life

I was married off when I was 13 years old. That was my first marriage, but I was the second wife of my husband. He married me after he left his first wife. At the time I was married my father was working in a sand boat in Dhaka. My uncle [father's brother] contacted my father and discussed my marriage. My father told him that if they liked my husband and his family they could marry me to that man. My uncle liked my future husband, so I was given in marriage in the absence of my father. My husband's father cultivated his own land. My uncle's argument was that as my father-in-law owned land I would have a secure future. My father went to my father-in-law's house to bring me back from my husband's house immediately after the wedding as part of the marriage customs. My husband Nasim was 20 years old when he married me and was working as a *rakhal*. He was the eldest among five brothers and sisters. My father-in-law gave me 15 taka as bride price [*pon*]. It was below the market rate at that time, but this was because we were poor. My father-in-law also gave me seven sets of silver ornaments, comprising necklace, bracelets, waste lace, nose pins, and earrings.

I stayed with my father and mother-in-law and cooked for them, as my husband used to stay at his working place. He took his food with him and stayed there at night as well. My father-in-law liked me but my mother-in-law didn't. She wanted her son to divorce me and marry again, but both my husband and father-in-law loved me, so my mother-in-law could not get her way. I had to do all household chores, including the processing of paddy and other food grains. What my husband earned through his work he handed over to his father. In return, my father-in-law supported me. My husband was worried that he could not save money for our own future, as his father took all his earnings. After three years of marriage, my husband decided to separate from his father. When we were separated, my father-in-law did not give any land to my husband. He then stopped serving as a *rakhal* and became a day laborer. My father-in-law later gave 0.66 acre of land to my husband. He cultivated his own land and worked as a day laborer when he did not have any work on his own land. I also helped my husband in the field, although women did not work in the field in those days. During the rainy season, my husband also worked in a sand boat, like my father. Later on we also reared a cow on a shared rearing basis and started sharecropping as well.

Bad experiences

My father became ill in 1980. He then wanted to sell his small piece of land. At that time I had also saved some money. My husband and I decided to buy my father's land. We bought the land with all of our money but immediately faced a difficult situation. In the meantime, my husband went to work in sand boat at Dhaka. I became penniless. I did

not even have one kilogram of rice or wheat to feed my children, so I brought all of my children to my father's house and left them there for a week. My father did not want me to leave my children in his house and gave me 5 kg of rice instead. After a week my husband sent some money from Dhaka. My husband's second brother was relatively better off, but he did not help me, while he did not have children. He wanted to adopt my sons. My neighbors urged me to agree, but at first I did not want to. Then I sent my children to his house. They stayed there, but when his wife served them meals they did not eat there but brought the food to my house and ate with me. My husband's brother got angry and told me if my sons were not willing to take meals at his house his wife would no longer give them food. After fifteen days my husband came back with money and then my sons stopped going to their uncle's house.

Children

I gave birth to eight sons and one daughter. Out of eight sons, four are alive. Two years after my marriage my first son Abbas was born. My second son Majid was born after three years but he died later when he was only 3 years old. My third son Jabbar was born after four years. The fourth son Akbar was born in 1979. He died from drowning. My fifth son Milon was born in 1981. My daughter Mila was born after Milon. My sixth son Montu was born in 1983 and my seventh son Mizan was born in 1985, but he died when he was five months old. My eighth son Jibon was born in 1988; he committed suicide because Montu scolded him for not working.

Illness and death of husband

My husband fell ill for the first time in 1989. He had a cough for a long time. Fifteen years ago when our sixth son [Montu] was born, my husband fell ill. His fellow workers advised him to consult a doctor for a check-up. On the basis of X-rays, the doctor diagnosed tuberculosis [TB]. He suffered for three years after that. When my husband became very sick he could no longer work so he engaged Jabbar and Mizan as contract laborers [rakhal]. I also started cocoon raising with help from BRAC. With this income and the production from our own land we could maintain our family.

In 1991, on the day my husband died, my eldest son Abbas was working in a sand boat in Dhaka, and Jabbar and Milon were at their workplaces. Two of my younger sons and my daughter Mila were at home. I had stopped raising cocoons because my husband became very ill and I had to nurse him. I had only 10 taka left and did not have money to buy his funeral cloths. I borrowed 200 taka from my sister for the funeral expenses, then I borrowed another 200 taka from my husband's brother to bear the expense of the formalities on the fourth day of his death. Jabbar and Milon were informed about their father's death after five days and came back home with 600 taka so I could repay my loans. Abbas came 17 days after his father's death. He did not help me with money.

After my husband's death I did not work for one year. I got a card from GKT for six months prior to my husband's death. With that card I got 30 kg of rice per month. I consumed the rice and also sold some to meet other expenses. Abbas joined his two other brothers in running my household. Two years after my husband's death I started working in the field.

Marriage of the children

My eldest son Abbas was married in 1989. At that time my husband was still alive and could work. Abbas married in a neighboring village near my maternal grandmother's house. Abbas got 700 taka as dowry and another 1,500 taka instead of ornaments for his

wife. We used this dowry to money pay for the wedding. Both my son and his wife were illiterate. He has two sons and daughter. Abbas stayed with us for two years after marrying. At that time Jabbar was in grade nine. Abbas complained about educating his younger brother. He said: "If Jabbar gets educated he will not share his education with me so I am not ready to pay for his education". Abbas's wife mostly stayed at her father's house and sometimes visited us. Abbas also quarreled with his father and me. He left home and went to his father-in-law's house. When he returned he started eating separately. His wife did not want to separate from us but it was my son who was responsible for the separation. We didn't have any choice but to except his decision.

In 1993, two years after my husband's death, Jabbar was married. Milon was married six months after Jabbar. Both of them discontinued their education as my husband got very sick. My eldest son Abbas's father-in-law was the matchmaker for both marriages. Both the brides were his relatives. Jabbar's wife was Abbas's wife's sister's husband's sister's daughter, and Mizan's wife was Abbas's wife's second brother's wife's sister. Jabbar's father-in-law paid 3,000 taka as dowry and 1,000 taka instead of ornaments. Jabbar has only one daughter. Milon's father-in-law paid 7,000 taka as dowry and golden earrings, bracelets and a silver chain. Milon has only one son. The wives of Jabbar and Milon were always quarreling with each other, which I did not like. It was increasing by the day. I told them that this continuous quarreling would damage their reputation and that I would see to it that they had separate arrangements after Mila's marriage. My daughter Mila was married in 1998. Mila's father-in-law demanded 12,000 taka as dowry. My sons agreed to the demand. I borrowed 20,000 taka from my father's brother to manage the marriage. I gave 12,000 taka as dowry and 22 grams of golden ornaments worth taka 6,000. Other expenses incurred were 2,000 taka. My sons sold one of our tin-sheds for 30,000 taka to repay the loan. Once Mila was married I called my husband's kin to separate the households of Jabbar and Milon. At that time Montu was also ready for marriage. He also married in 1998, just six months after Mila. As with the other marriages, Abbas's father-in-law was the matchmaker, and the bride was also a relative of his. She was his cousin, which is rather unusual but that does not matter. Montu's father-in-law gave 7,000 taka as dowry and one pair of earrings. He also purchased 0.15 acre of land and gave it to Montu.

Division of property

When I separated the households of Jabbar and Milon they were sharing their property. My husband got 0.66 acre of land from his father. He sold 0.16 acre when he was sick to pay for his treatment and to maintain the family. At that time I had five sons [Jibon later committed suicide]. Each of them got 0.10 acre. Concerning the other common properties, like the rickshaw, the bicycle and two tin-shed houses, Jabbar took the rickshaw and the bicycle, Milon took one house and the other sons [Montu and Jibon] took the other house. They decided that Jabbar and Milon would give me 100 taka per month for my living expenses. After some time they stopped doing this and paid me only irregularly.

Staying with Montu and death of Jibon

After the division of property I stayed with Montu and Jibon. They provided for me and Abbas, while Jabbar and Milon paid their share [100 taka per month]. Jibon committed suicide one month after Montu's marriage. One day Montu scolded Jibon for not working in the field. Montu warned Jibon that if he would not help in the field, Montu would not allow him in the family and stop feeding him. Montu scolded Jibon at noon time and at night Jibon committed suicide by drinking poison. Then I stayed with Montu for another

three years. There was no problem with my son or his wife, but the wife's parents started backbiting about me to their daughter. They said to my daughter-in-law: "Your mother-in-law has three more sons but none of them takes care of her. Why should your husband take care of her on his own. You should separate from her". They also complained to Montu but he did not listen to them.

Last year [in 2002] my daughter-in-law went to her parent's house. After one month she had not returned, so my son asked me to visit her and bring her back home. I went to my son's father-in-law's house and asked my daughter-in-law to come back home. She was preparing puffed rice and told me to go back. She said she would go home after she had finished her work, but she didn't. She stayed at her parent's house for another month and then returned home. Once she returned home she was behaving differently. Before we all took our meals together but this time she did not call me for meals. She took her meals alone and took the meals for her husband to her room. I waited for a few days and then I decided to intervene. I complained to the wives of Jabbar and Milon. They said: "We thought it might be because you scolded her that Montu's wife is behaving like that". After three days I confronted Montu's wife with the situation. I told her that she could tell me straight away if she wanted her own separate household and that there was no need to create a scene. She did not reply and stopped talking to me. I stopped taking food from her house. Neighbors start talking about it. My son also did not say anything to me. After two days I handed cooking pots over to my son and his wife. I stopped cooking for one month. The other daughters-in-law called me to take meals with them. I took my meals at their house or at a neighbor's house. After this, Montu's wife no longer talked with me and Montu did not take care of me anymore.

NGO involvement

I joined BRAC in 1987, three years after BRAC's presence in our village. At first I took a loan of 3,000 taka in 1988 when my husband was doing a business in brown sugar. When I repaid that loan I took another one of 2,000 taka the next year. With that money I bought a cow. In 1990, after my husband was diagnosed with TB, I was looking for a job besides working in our own field. A man advised me to contact the BRAC office. He took me there. They selected me for training in cocoon-raising. I was trained for 15 days. My feeling was that I could perform this work at my home and would be able to combine it with taking care of my husband. At that time a mulberry tree was grown on the street near our house and I also grew a mulberry tree on my field. I raised cocoons three times, each time getting about three kg worth 500 or 600 taka. That helped me to pay for my husband's treatment and the family expenses. In 1992 I took another loan of 1,000 taka to buy paddy for consumption. At that time my husband died and I became ill myself and could repay only two out of 46 installments. When the BRAC officer inquired about this I told him that I would repay my loan, but he did not listen to me. I had about 1,200 taka savings with BRAC. He took away my savings book to arrange repayment from my savings, and terminated my BRAC membership. In 1995 I became a member of GKT. I took a loan of 4,000 taka and gave it to Montu. He bought a rickshaw with it. The next year, I took another loan of 1,000 taka for Montu. After I repaid that loan I stopped my GKT membership. I am no longer involved with an NGO. I had 1,450 taka from my savings. I gave 400 taka to Montu and built a small kitchen with 500 taka. I have been a

member of a local village level organization¹ for five years. I save five taka per week with this organization. In two months' time I will get my money back.

The present situation

When I became separated from Montu's household I had only six kg of rice. Montu took it for his consumption. I borrowed 1,000 taka from Abbas, Jabbar and Milon as part of their monthly payment [100 taka per month from each]. I got 56.25 kg of paddy from Abbas, 37.5 kg from Jabbar and 350 taka from Milon. In May, 2003, Abbas gave me 18.75 kg of paddy and Jabbar 75 kg. Milon gave me 100 taka in August, 2003. They gave me this between January and September, 2003. If they do not want to give, they don't. They are also poor, so I cannot ask for much. As a widow I cannot force my sons. Without my husband I have no power. I used to make mats from coconut or date-palm leaves and sold those in the market. Sometimes I sell bamboo to get some extra money for betel leaves and other things. Still, I have to work for my sons' families and take care of their children. I also got 24 kg of rice as relief: 15 kg immediately after the separation and again 9 kg in February, 2003, for the Eid festival.

Zohora comments on her life in the following way:

I always had to work. I worked in my father's family, my own family, and now in my sons' families. It is my fate to work. I don't mind it. As long as I am able to work I will do so, but when I am very old how will I manage then? I often think about that. My sons' wives will not look after me. I don't know who will take care of me. I depend on God for my fate.

7.5.5 The life of a traditional birth attendant

Ranu, 52 years old, lives in Saturia. She is the mother of two daughters and one son. All of them are married. She stays with her son and daughter-in-law and a granddaughter. She lives in a tin-shed house with two rooms, a kitchen shed and a cowshed. Her husband died nine years ago. She built the tin-shed house after her husband's death. She is a health worker for BRAC. She had been a traditional birth attendant (TBA) and BRAC trained her as a health worker through an intensive training program, even though she is illiterate. She maintains her family by working as a health worker. She is the household head and she created a position for herself in the village. She is also the treasurer of a local village-based organization. Below the life of Ranu is presented in her own words:

Childhood

My father's house was in Dhamrai upazila in the district of Dhaka, only two km away from my father-in-law's house in Saturia. I was the only surviving child among five children. My grandfather was a well-to-do farmer. He was an only child and had passed the secondary school certificate [SSC] examination. I was born two years after my mother's marriage. My mother gave birth to another daughter and three sons but all of them died during childhood. My father used to help my grandfather with farming. My grandfather had 3.96 acres of land. He had adopted another son. My grandfather died when I was only about eight years old. My grandfather gave 0.99 acre of land to the adopted son so my father got 2.97 acres. At that time there were problems in farming and the production of my father's land decreased drastically, so my father decided to sell some of his land and purchase land at another place that seemed more productive. He went to a community leader [*matbar*] for advice but was cheated. The *matbar* gave him

¹ Such organizations are set up for five years. The money saved by the members is returned according to their share. The organization also provide loans, like NGOs, at an interest rate of 25 taka per week for a 1,000 taka and the borrower has to pay back in 46 installments.

only 500 taka and took 1.98 acres of our land. My father understood too late that he had been cheated but could not do anything about it. At that time our family counted my father, mother, grandmother, and three brothers and sisters. My father had only 0.99 acre of land left, which was not enough to maintain his family. My father became mentally ill when he lost his land. At that time I was ten years old. My mother started working, processing paddy at other people's houses. I also took care of livestock [cow, goat, chicken]. From being a farmer my father became a laborer. He used to go for migrant work [*dawa*] to Rajshahi, Jessore and Netrokona.

First marriage and married life

In 1962, when I was only 12 years old, my father married me off for the first time, at Komolpur in Satura. At that time my father was mentally disturbed and he did not inquire fully about the bridegroom. My mother and grandmother were also in favor of this marriage. My father did not pay any dowry but gave me some silver ornaments. My husband saved money from his contract labor to pay for the wedding expenses. My husband Kazim was 18 years old. He did not own land and worked as a contract laborer. He had two brothers and a sister. My parents wanted me to go to my husband's house but I was too young to understand about marriage so I wanted to stay with my brothers and sisters at my father's house. I was very much afraid of my husband and did not want to stay with him alone in one room. The first year I did not go to my husband's house. My mother, grandmother, and neighbors tried to convince me to do so. After one year I went to my husband's house.

At first I was afraid but when I went there I was happy. Then I understood the meaning of marriage and enjoyed it. My husband's eldest brother was married and had separated from my father-in-law. My father-in-law died before I got married. My husband's only sister was older than him and was already married, so my family was composed of my mother-in-law and the two younger brothers. My husband was a contract laborer and stayed at his master's house most of the time, visiting me from time to time. After three years of marriage my first son Munna was born. He died of diarrhea when he was only 45 days old. After one year a daughter was born and she died seven days after birth. Her name was Shumi. The next year I gave birth to another daughter but she died during delivery. Afterwards I was not getting pregnant so my mother-in-law took me to several traditional healers [*fakir*] to get pregnant again. She always scolded me, saying: "You are good for nothing. Your children do not survive". My husband never scolded me but tried to comfort me and asked me not to be worried about the deceased children. He stopped working as a contract laborer two years after our marriage and became a day laborer.

After four years I got pregnant again. It was the time of the Liberation War. We did not flee but stayed at our home. My husband went to work in field away from our house on the day of liberation [16th December, 1971]. The next day I heard that he died from a bullet wound during the fighting between the liberation forces and the Pakistan army. My husband's eldest and younger brothers brought the dead body home and buried him the same day. Five months after my husband's death another son was born, but after two months he died of diarrhea. I stayed at my late husband's house for another one-and-a-half years. Being a widow, I was given 20 kg of rice and 20 taka per month as relief from the government.

Second marriage

My parents did not allow me to stay at my husband's house so I returned to my father's home. However, I did not get any relief at my father's house. After I returned from my

husband's house I took over all household chores from my mother who was working in another man's house. I was alive but felt like a dead person. I was very depressed so my father tried to remarry me. Different proposals came for me but most candidates were too old and had wives, either dead or alive. My father was eager for me to remarry, thinking that I would recover once I got married again. At that time my late husband's sister Neena proposed for her husband's brother Monir. Monir's wife had also died recently and he had three daughters from first wife, two of them already married. His eldest daughter Mina was older than me. Neena liked me and wanted to continue our relationship. She convinced my parents and I was married again in 1973, two years after my husband's death. My second husband was much older than me. When we married he was about 53 years old and I was only 23. I started my second family life with a stepdaughter, Kanta, of twelve. My husband was engaged in farming. He had 0.66 acre of land. My husband was weak and did not have the means to hire labor, so Kanta and I assisted him in the field. Sometimes we also worked during the night. Kanta also assisted me in the household. Together we performed all farming activities, like sowing, weeding and harvesting. I became an expert farmer, doing better than my husband who was aged, ill and weak. I also reared a cow. My husband cut grass in the field for fodder, but he was so weak that I had to carry it home for him.

Children and their education

One year after my marriage [in 1974] I gave birth to my first son named Latif. He was my husband's first son. My husband was very happy. In 1977, three months after Kanta's marriage, I gave birth to a daughter. Her name was Rekha. I was happy but my husband was upset, as he already had three daughters from his first wife. After two years [in 1979] I gave birth to another daughter, Sufia. She died of measles at the age of two. In 1982 my youngest daughter Molly was born. She studied up to grade eight.

Illness and death of the husband

In 1987, my husband fell ill. He had been sick before but this time his condition was worse. Everyone thought it was asthma. At that time there were no good facilities for testing but now I understand that he had TB. He could not work any more. I had to nurse him, earn money for the children, work in the field and do all household chores. I started to work as a day laborer. He got well after one year [1988]. In 1993 I got seven sheets of tin as my share from my first husband's family. My first husband's sister Neena helped me in getting my share. I sold those tin sheets for 700 taka. In the meantime I took a loan from BRAC for cow rearing, but the cow died so I mortgaged 0.17 acre of our land for 10,000 taka to repay loan installments and feed my family. In 1994 I took a loan of 8,000 taka from Proshika. With that money and my savings I took back the mortgaged land. I tried hard to save my husband's life and took another loan of 5,000 taka from Proshika. In spite of my efforts, my husband passed away in 1995, after eight years of suffering. He was bed-ridden for three months prior to his death. My husband was aged and ill so I had to take care of my family. One day my husband said: "I thought of selling my land to pay for my treatment and family. I found you can also work in the field, so I better not do so. Rather, I will put the land in your name. You successfully arranged Kanta's and Rekha's marriage. I think you will also be able to arrange Molly's marriage after I will have passed away. Now you better take full charge and maintain your family".

I was struggling to maintain my family long before my husband's death. I did not feel any pressure because of his death. The produce I got from the land inherited from my husband was not enough so I started to work as a day laborer again. When I did not work we all had to fast. I used to go to work in the very early morning. The children

remained without food until I returned from my work and could cook for them. After the death of my husband I continued my work as a day laborer.

Children's marriage

In the meantime [in 1976], Kanta became fifteen years old. Many proposals for her marriage started coming in. My mother gave me a cow to rear. I sold it to pay for Kanta's marriage. I also got some money from my first husband's family. I spent 10,000 taka on her marriage. In 1988 I married off my eldest daughter, Rekha. She studied up to grade five. The groom was my husband's eldest sister's son. Rekha's mother-in-law proposed to us for her son. Rekha's husband owned land that he cultivated himself. At that time my situation was bad, as my husband was very ill. I promised 2,000 taka as dowry and 16 grams of golden earrings and a necklace for her wedding. In 1989, one year after her marriage, I took a loan of 10,000 taka from Proshika to pay for her dowry and buy golden earrings for my daughter.

My youngest daughter Molly is beautiful. She was married in 1997 when she was in grade eight. She was then only 15 years old. I gave 5,000 taka as dowry. To raise this money I took a mortgage of 5,000 taka, but my daughter did not like her husband. She was so afraid of him that whenever my son-in-law or any relative visited our house to take her to her husband's house she fled. I insisted that she should go to her husband's house but she refused. My son Latif helped in the field after his father's death. Initially he went to Dhaka as a seasonal contract laborer [*dawa*]. In 1997 he took over the work in the field from me. Latif married six months after Molly's marriage. My brothers choose a girl from my father's village for my son and negotiated the marriage. I took 10,000 taka as dowry from my daughter-in-law's family. The girl's father gave her 10 grams of golden ornaments. I spent all the dowry money and another 2,000 taka on the wedding. He was my only son so I invited all my relatives.

Divorce and re-marrying

I was very anxious about Molly so I married my son off to a young girl. My feeling was that when my daughter sees that her brother's wife is also very young and stays with her brother, she might change her mind and go to her husband's house. But that did not happen. I observed the situation for another year. Molly was still afraid of her husband. Some of my neighbors were behind my daughter and urged her not to go to her husband's house. In the end I decided to ask my in-laws for a divorce for my daughter. The marriage had lasted one-and-a-half years. My daughter's in-laws returned 4,000 taka [part of the dowry paid earlier]. In 1999 Molly was married again. My own brother liked her for his son. At that time I sold 0.33 acre of land and I gave 24,000 taka, a bicycle worth 4,000 taka and 22 grams of golden ornaments as dowry to my new son-in-law. Including other incidental expenses, this marriage cost me 35,000 taka.

Consequence of paying high amount of dowry

My eldest daughter Rekha and her husband joined in the marriage ceremony. When I paid a high amount of dowry for the second marriage of Molly the husband of Rekha got angry with me. He quarreled with me the night after the marriage ceremony. The following morning he left my house with his wife. He demanded the same amount of money and threatened that if I do not pay him he would divorce his wife. That was a very bad situation for me. My son-in-law's mother also quarreled with me. She said: "I will ask my son to divorce your daughter and marry again". However, my son-in-law did not divorce my daughter, but my son-in-law's mother did not allow my daughter and her husband to visit me for six months. Then I went to with them to talk. I told my son-in-law

that I would give my daughter a 6 gram golden chain and him 1,200 taka. He agreed with my proposal and normalized our relations.

Careers

When my husband fell sick in 1987, I had a very hard time running the family. On the one hand I had to feed all of them, and at the same time I had to nurse my husband. It was a double burden. Then I became a day laborer with other poor women in the village. We used to go for work in the very early morning. We never worked in and around our own village. We felt ashamed, so went to distant villages to work. Initially most of the time I worked in road construction but later on I worked in households as well. While I was working as a day laborer I also worked in my own field.

In 1990 I had to stop my work as a day laborer temporarily because my daughter's husband's family did not like me doing this work. Also, my neighbors asked me not to work as a day laborer as my in-laws would mind and that would cause problems in my daughter's marriage. They said: "Now you have to consider the prestige of your daughter's in-laws. If they do not like you working as a day laborer you better stop it". I stopped for a couple of months. But it was difficult for me to maintain my family so I decided to discuss the issue with my daughter's mother-in-law. She understood my problem and accepted that I had no other choice, but requested to do my work in secrecy. Then I resumed working, but this time far from our village, where nobody would recognize me. I used to go to work in the very early morning and was very careful on returning home so that people could not guess where I was coming from.

I went to work for BRAC during the 1988 flood. Together with other women, I made home-made bread [*roti*] for the flood-affected people. During the post-flood period, there were diarrhea outbreaks in our area. To tackle this emergency situation, BRAC was looking for women from different villages to train them as health workers. They also selected me. I received a training of seven days, followed by refresher courses from time to time. BRAC trained me to treat ten common diseases: diarrhea, dysentery, worm infestations, gastric problems, common colds, scabies, anemia, ring worm, angular stomatitis, and goiter. I give treatment and sell medicines to the villagers. This provides me with some material benefit, but the prestige it earns me in the village is more important. Everybody in the village, rich and poor, comes to me for treatment and medicine. I also take care of TB patients. When I complete the treatment of a patient, BRAC pays me 100 taka. In recent days I also help people suffering from leprosy to get treatment. I enjoy this job and get honor and confidence from the people. I will continue this work as long as possible.

I received my TBA training in 1993, five years after the health-worker training provided by BRAC. I had been working as a traditional birth attendant [TBA] since my marriage in 1973. My grandmother was also a TBA. I learned from her and I assisted her. Initially, I only did this work occasionally, but since the BRAC training I am more involved in this job. I enjoy it because a baby is coming to this world through my hands. Now I know about many things I did wrong before I was trained. I get little material benefits from this job but get a lot of honor. The clients generally give me a *sharee* and occasionally 10 to 20 taka.

NGO involvement

I have been a BRAC village organization [VO] member since 1986. I first took a loan of 4,000 taka in 1993 and bought a cow with a calf. Unfortunately, both the cow and her calf

died, but I had to repay my installments. To repay that loan I had to mortgage 0.17 acre of my land for 10,000 taka. After that I did not take a loan for a long time, as I was very much afraid of paying installments. However, I continued my savings with BRAC. In 1999 I took another loan of 4,000 taka from BRAC. I bought 300 chickens with that money and could repay my loan from the sale of chickens. In 2001 I took another loan of 4,000 taka from BRAC. This time many chickens died and I encountered heavy losses. Still, I had to pay the installments. In August, 2003, I took a loan of 6,000 taka to purchase a cow, but I cannot buy it yet. However, I am paying my installments. I was also a member of Proshika since 1987. In 1989 I borrowed 10,000 taka for the first time for the marriage of my eldest daughter Rekha. Then in 1994 I took another loan of 8,000 taka to take my mortgaged land back. In 1995 I took the last loan from Proshika, of 5,000 taka, to treat my husband and for family expenses. Now Proshika is no longer working in our village. They left it following a dispute over a suicide case.

In 1987 I took the initiative with my fellow women to create our own organization. Sixteen women were involved. We saved one taka per week per person. I was the treasurer. We continued that organization for three years. Our fund amounted to 16,000 taka. Any member could borrow, at an interest rate of fifty taka per 1,000 taka per month. In 1997 we dissolved the organization and distributed the shares among ourselves. Two women left the organization. We started a new one, but this time the interest rate was five taka per week. We continued it for four years and saved 20,000 taka. In 2001 we dissolved the organization again and distributed the shares. I bought a cow with that money. Two years ago we started a new organization again, this time involving thirteen women. Now we save ten taka per week. I am still serving as the treasurer, as they trust me. I keep all documents with me. All the women involved in the organization are illiterate so we get help from our daughters to keep our accounts. We meet weekly to deposit our savings. Members can borrow money for the purpose of marriage or medical treatment. The members are disciplined in repaying their loans with interest. The main advantage is that we can continue our loan as long as we need. With NGOs we have to repay weekly installments, even though some people have a problem in paying these. Two of our members took loans to buy a rickshaw, which they have paid back. At present, one member took a loan to buy a rickshaw and is still repaying her loan. In our organization we understand and trust each other, so the members feel secure. We have 20,000 taka in savings. By the end of 2003 we are planning to dissolve the organization again.

Land

I had 0.33 acre of land in our village near a bridge. That bridge was washed away by the strong currents of the 1998 flood. My land was covered with sand and became uncultivable, so I sold it in 1999 for 100,000 taka. With that money I financed my daughter's marriage [35,000 taka], built a tin shed [35,000 taka], and took 0.12 acre of land on mortgage [12,000 taka]. I deposited the remaining 18,000 taka. In 2000 I withdrew the money and gave 12,000 taka to Rekha's husband and also bought golden earrings. When the landowner returned my money I spent all the money I got on family expenses, as I had stopped working as a day laborer. In 1993 I took a loan from BRAC and bought a cow, but that cow and its calf died, while I still had to pay the installments. Then I mortgaged 0.17 acre of land for 10,000 taka. In 1997 I mortgaged the same 0.17 acre of land for 10,000 taka to collect money for Molly's first marriage.

Present situation

My son pulls a rickshaw. He has one son. Now I rely on my son's income, though I also earn some money, about 300-400 taka per month, as a BRAC health worker. I also raise a cow. Within a month the cow will give birth and then I will earn more by selling its milk.

7.6 Discussion of the life histories

Child marriage was a problem in the past and still is today. Girls are married off during childhood when they do not know the meaning of marriage. As a result, their marriages are unstable (case of Ranu and her daughter). Another issue regarding marriage is that poor parents are forced to marry their daughters off to older men (cases of Ranu and Zohora), with all the negative implications for the women's lives that this entails. As these women are married to elderly men, they have to take charge of the family and get involved in farming as well as working for wages. When a girl reaches puberty she becomes a concern for their parents. Parents want to marry their daughters off as soon as possible, even to older men. Women in such a position face a triple burden. First, they have to take care of their families; second, they have to take care of their sick husbands; and, third, they have to support their children after their husbands' death. This forces them to work as laborers, work which in the past was socially stigmatizing for women. This happened in the life of Ranu. At present, women no longer face this problem but are at liberty to join the labor market. However, their wages are still lower than of men. Nowadays especially young girls are getting more opportunities to work in the factories, adult women less so, as is evident from the life of Nadira. Fewer opportunities for adult women in the factories force them to join the open labor market to sustain their livelihoods and avert vulnerability. If they have grown-up children they can force their children to work, mostly as a child laborer or, in the past, as a *rakhal* (cases of Reza and Zohora). At present such young boys are forced to do odd jobs, which is another concern for society.

New opportunities of work for young women give them a better position in the labor market. At present, girls are working and are no longer a burden to their families but they become assets instead. This also means that they are able to share in the cost of their own marriages, enabling the parents to find better husbands for their daughters. The labor market participation of girls has an impact on their age of marriage. The age at marriage for girls is increasing, which will have a depressing effect on fertility and population growth. It has also increased the bargaining power of young women in their families.

The life histories reveal that no dowry was required in the past, but that it is a must for recent marriages, and that the amount of dowry is increasing. It is nearly impossible to marry off a girl without dowry. Dowry is causing family problems. Payment of dowry once does not guarantee that the dowry paid to the groom is final. There remains a chance that additional dowry is demanded, which causes misery in the woman's life. In the case of Ranu's daughter, the husband and his family demanded new dowry because of the larger dowry paid for the youngest daughter. Dowry problems can lead to psychological or even physical abuse by the in-laws of the woman concerned. Nowadays, using NGO-credit for the payment of dowry is common practice. Thus, NGOs indirectly contribute to the continuation and the increasing costs of dowry.

Divorce is other side of the coin of marriage. As already noted, it is common in rural Bangladesh, with one in five marriages ending in divorce. Divorce in many cases is related to dowry payments or problems with the in-laws. Men usually divorce women and women have little power to resist it. When the woman resists divorce she will not regain a normal family

life. The life of Nadira shows how the court verdict saved her marriage but not her marital life. It is a good example of women's position in Bangladesh. What Nadira did is quite rare, because in most cases women cannot do anything but accept the divorce. In Bangladesh it is important for women to have a husband, whether he lives with her or not. Young divorced women or widows are married again, but older women have less chance to remarry. They have no choice but to survive on their own or become a burden to their brothers or parents. Adult divorced or deserted women, or widows with young children, have few opportunities for work apart from jobs as a day laborer, earning half the wages of men. This makes it hard for them to maintain their livelihood.

In the past, the relationship of a bride with her in-laws was crucial. All women had to live with their in-laws and maintain a good relationship by following the orders of the mother-in-law (cases of Nadira and Zohora). The life of Nadira shows that her marital life was ruined because of the bad relationship with her in-laws, ultimately leading to divorce and later desertion. Nowadays a woman has to maintain good relations with her daughters-in-law. Now, daughters-in-law are unwilling to have their mothers-in-law stay with them, yet use her to take care of the children. This happened to the mother of Monir. At present, it is a common problem and a new dimension of suffering for rural elderly women.

In the past women could rarely enjoy their parental properties because they had to hand over those to their brothers. The life of Monir shows that he is enjoying his sister's property. This is still common. Nadira is afraid of claiming her share from her stepbrothers for fear that it would affect her relationship with them. The price of land has gone up, so women are increasingly fighting to get their parents' share from their uncles. This frequently leads to court cases. Reza fought with his uncles for his mother's share. He sued his uncles and, in the end, got his mother's share. Inheritance of the husband's property is even rarer. Ranu was lucky that she got her share from her first (deceased) husband through her sister-in-law. This rarely happens. Putting the husband's land in the wife's name is also exceptional. Ranu's dying husband did so to protect her rights on his property and safeguard her livelihood. This is rare among couples of more or less the same age, but more common among couples where the husband is much older than the wife.

Among villagers borrowing is common. However, due to gender discrimination, it is difficult for women to lend money to others. A problem arises when a woman lends her money to men, especially to in-laws. There is a big chance she will lose it. The male or in-laws will either delay repaying or sometimes do not repay at all. If they do lend them money, women will usually use somebody else's name and hide their identity. We saw this in the case of Nadira. She and her daughter lent money to Moina's father-in-law while concealing their identity.

In the past, parents always expected support from their sons, not from their daughters. In recent years daughters also start supporting their families. It is evident from the life of Reza that her daughters played a crucial role in parental support. Daughters are not supposed to support their own parents once they are married, but Reza's daughters supported their father by taking NGO loans for him. A similar thing occurred in Nadira's case. This brings a new source of support system to households.

Accumulation of assets in the form of land is common. As the life histories show, rural people usually see landownership as the best option for raising their wealth. In the past this trend was very common. The cases show how much agricultural land is valued, but people also value land for building houses on. Men at first purchased land and later built their houses,

while some of the women in the case studies built houses rather than accumulating land. Both Reza and Monir accumulated land to enhance their livelihoods, while Nadira built a house to put rooms for rent instead of buying land. Nadira used the opportunity created by the fact that industrialization on the periphery of Satoria has brought many migrant workers from different parts of the country who are now living around Satoria and need to rent rooms. Reza and Monir started to build a house once they were better-off. This is a new trend in the rural areas.

The cases show both the value attached to farming and having agricultural land, and the ways in which people try to diversify their livelihood portfolios to provide for their families. Especially for women who cannot engage in farming, it is important to look for alternative sources of livelihood. Examples of such alternative livelihood activities of women are cocoon-rearing, handicrafts (mat-weaving), and poultry and cattle rearing. Ranu was trained as a health worker and this work now gives her prestige and some economic support. At the same time, types of work that were traditionally off limits for women are increasingly taken up by them, even though because of dire need. Women were not supposed to work in the fields, work as a day laborer, or engage in migrant labor (*dawa*). Doing so was socially stigmatizing. The cases show that women broke with these traditional constraints because they had no other choice. The positive side to this development is that women are now less confined to their homestead and that their working outside the house becomes more accepted. Perhaps this also paved the way for women to establish their own village-level organizations (see below).

The life histories show the importance of social capital for rural livelihoods. The *matbar* who assisted Nadira to sue her husband and supported her from time to time is a source of social capital. Ranu's father, on the other hand, trusted the *matbar*, who grabbed his land, which is a case of misuse of social capital. The tobacco factory manager who helped Nadira get a job as a maid at his sister's house when she was in trouble at her uncle's house is another example of social capital. The police sergeant's support of Moina to get her out of captivity in her in-law's house after her husband's death and the monetary support for her treatment is a classical case of social capital. The co-workers' support for Nadira in carrying her spade and bucket when she was too tired to do so herself is a touching example of social capital. In getting a new job in a factory, it is crucial to know someone already working there. The factory management usually provides jobs only to those people who have a referral person in the factory. This person functions as a guarantee. This is well documented in the life histories of Nadira and Reza. Nadira got her job at the local tobacco factory with the assistance of her sister and her son got a job in the local steel mill through his friend. In the case of Reza's daughters, the younger sisters could get a job in the tobacco factory through the eldest daughter who already worked there. The role of kin is crucial in the support system and is a form of social capital as well. This was revealed in all life histories. Kin extend their support at the time of need. The role of maternal kin is important when no other support is provided, especially for women. Reza's maternal grandfather provided him with shelter after his father's death. Similar things happened in the case of Nadira and her mother. For Zohora, it was her sister who helped her immediately after her husband's death. Later on her husband's brother also helped her. In the case of Ranu, her husband's sister helped her get her share from the husband's family. Thus, kin are a source of social capital, but kinship relations can also be problematic and turn sour, especially in the case of in-laws.

In former days, during the early stages of the lives of the women and men portrayed, people mainly relied on their kin, neighbors or friends for support. Only later did NGOs begin to be important. The life stories reveal that NGOs help to dispel vulnerability, though not

permanently. NGOs provide collateral-free loans through village-based organizations. The group cohesion functions as collateral. In the case of Nadira, the group members refused to support her to get a loan from BRAC because of her default status. This illustrates the negative side of social capital, but support from the NGO management in getting a loan despite the group's disagreement illustrates a positive form of social capital. The role of NGO credit in building assets is well documented in all life histories. The use of NGO loans for consumption smoothing is a well-known phenomenon. When people use NGO credit for consumption purposes there is a chance of loan default. This made Nadira lose her NGO membership. It is common for poor households to take loans from different NGOs while being unable to repay it, falling into a vicious cycle of borrowing from NGOs in the end, which ultimately puts these households in a more vulnerable position. With the support from NGO credits, Ranu succeeded in dispelling her vulnerability while Zohora failed to do so. Nadira succeeded accumulating assets for her future with NGO assistance. To a certain extent, this is also true for Reza and Monir.

The formation of village-based independent saving organizations indicates the emergence of new forms of social cohesion and support, amounting to new forms of social capital. Both Zohora and Ranu are involved in their own village-based organizations. This is an example of women's empowerment, which creates social cohesion and helps to foster mutual support. We found similar types of organizations in other villages. The formation of village-based independent saving organizations is becoming popular among both men and women and makes people less dependent on NGOs. The conditions for NGO loans are often rigid and may put the borrowers in a problematic position. Another point is that this formation of village-based independent saving organizations is indicative of unity among the members, which reduces the chances that members will lose their money. People often complain that NGOs forfeit their savings when they have become loan defaulters. Currently, there seems to be an emerging trend whereby NGOs are losing their exclusive position in providing small-scale and collateral-free loans to rural people. This role of NGOs is to some extent being taken over by local initiatives of people founding village-based organizations.

CHAPTER 8

FOOD AND NUTRITION SECURITY

This chapter discusses food security, nutrient adequacy, and nutrition security issues, using gender and temporal perspectives. People's perceptions about food security and the role of social capital and gender in implementing strategies to attain food security are also discussed. The effect of social change on food security is discussed as well. Nutrient adequacy and nutrition security issues are discussed in the subsequent sections. Nutrient adequacy at the individual level was measured in terms of intake of calories, protein, fat, total iron and vitamin A. These nutrients are measured for the pre- and post flood situations to examine the effects of the 1998 floods on nutrient adequacies at the individual level. The issue of nutrition security, taking gender and time into account, is investigated in order to find the determinants of the nutritional status of pre-school children. The topics of food beliefs and taboos are discussed at the end of the chapter in relation to gender, age and nutrient adequacy.

8.1 People's perceptions about food security

Women and men have the same perceptions about food security, but their perceptions vary with economic status. To most men and women, food security is taken to mean filling the belly with rice and, preferably, vegetables. To the very poor it is just to have a full stomach. One very poor woman said: "I would be happy if I have enough rice three times a day with vegetables or even with red chili. I would prefer more than that but it is beyond my capacity". In the past, women were happy if they had only a belly-full of rice, even if only once a day; they could count the times when they had. They used to cook rice mixed with blackgram or potatoes. They only cooked rice when they had enough of it. They also ate cooked rice soaked in water overnight (*panta bhat*) with red chili, which they liked better than rice mixed with blackgram or potatoes. The expectations of a very poor man are more than rice and red chili. At present, the men feel food secure if they have a belly-full of rice with vegetables three times a day. They now expect to have at least one type of vegetable and warm rice.

As said, to poor women and men it is just to fill the stomach with rice and at least with one type of vegetable. At present they feel food secure if they have a stock of rice at home, but in the past they could only dream of such a thing. They prefer to stock food at home rather than have money in hand. The women think that if they have food they will not have to ask their husbands to buy it. Thus, they feel more food secure. As they said: "If men have money in hand then they can spent that money for purposes other than buying food. But if we have food then we can use it for consumption and sell it at the time of other needs". The men agreed with the women's assessments. To better-off women, food security means a variety of other foods in a meal besides rice. To be food secure is to be able to store enough rice and pulses at home. The main difference between women and men is that women prefer to have a stock of food at home over having money in hand. Women express this as follows: "We might have money in hand but still have no food when we need it. Sometimes, though we have money, it is not possible to buy food as markets are on weekly basis and sometimes far away and it is difficult to find a person to buy it [for us]".

It is evident from the above examples that a full belly is the dominant perception of food security among all groups of women and men, though in the course of time this perception has slightly changed. Women value stocks of food more than men. Though men agreed with

the women's argument for having food stored at home, they preferred having money to having food stocks.

Table 8.1 Women's and men's perceptions of food security past and present

Economic status	In the past	At present
Women's perception		
Very poor	<ul style="list-style-type: none"> At least a belly-full of rice once in a day 	<ul style="list-style-type: none"> Belly-full of rice three times a day with one type of vegetable or with red chili
Poor	<ul style="list-style-type: none"> Belly-full of rice once a day with chili Stock of rice at home 	<ul style="list-style-type: none"> Belly-full of rice thrice a day with at least one type of vegetable Stock of rice at home
Better-off	<ul style="list-style-type: none"> Belly-full of rice three times a day with one type of vegetable Enough stocked rice at home 	<ul style="list-style-type: none"> Belly-full of rice three times a day with pulses, vegetables and fishes Enough food stocks at home and money to buy other foods such as vegetables and fish/poultry
Men's perception		
Very poor	<ul style="list-style-type: none"> At least a belly-full of rice once a day 	<ul style="list-style-type: none"> Belly-full of rice three times a day with at least one type of vegetable
Poor	<ul style="list-style-type: none"> Belly-full of rice once a day with one type of vegetable or chili 	<ul style="list-style-type: none"> Belly-full of warm rice three times a day with at least one type of vegetable Stock of rice at home
Better-off	<ul style="list-style-type: none"> Belly-full of rice three times a day with vegetables Enough money to buy food or have a stock of food at home 	<ul style="list-style-type: none"> Belly-full of rice/meal three times a day with pulses, vegetables and fishes/poultry Enough money to buy food or have a stock of food at home

8.2 Food security, economic status, and stage of the household life course

Both men and women in the focus group discussions were asked about economic stratification. The discussions yielded a division into five categories of economic status. These results were cross-checked with the indicators of landholding and household income. Economic status as indicated by the five categories in Table 8.2 below is related to self-perceived food security, yielding a significant chi-square ($p < 0.01$) in the expected direction. In Table 8.3, self-perceived food security is related to stage in the household life course. The table shows that, according to their own estimation, younger households are more often food insecure and mature households more often food secure. The variables of stage in the household life course and self-perceived food security are not independent ($p < 0.05$).

Table 8.2 Self-reported economic status and food security status

Economic Status	Food security status							
	Occasionally food insecure		Just food secure		Food secure		All	
	No.	%	No.	%	No.	%	No.	%
Ultra poor	14	25.0	-	-	-	-	14	4.7
Poor	25	44.6	63	42.3	-	-	88	29.3
Just solvent	16	28.6	65	43.6	51	67.1	132	44.0
Solvent/Well-off	-	-	21	14.1	28	36.8	49	16.3
Rich	-	-	-	-	17	22.4	17	5.7
Total	55	100.0	149	100.0	76	100.0	300	100.0

Table 8.3 Stage of the household life course and food security status

Life stages	Food security status							
	Occasionally food insecure		Just food secure		Food secure		All	
	No.	%	No.	%	No.	%	No.	%
Young ¹	17	30.9	38	25.5	14	14.6	69	23.0
Growing ²	13	23.6	43	28.9	25	26.0	81	27.0
Grown ³	12	21.8	22	14.7	22	22.9	56	18.7
Full grown ⁴	13	23.6	46	30.9	35	36.5	94	31.3
Total	55	100.0	149	100.0	96	100.0	300	100.0

¹ households with no children or one under five children

² households with at least one child under five and children of different ages

³ households with children between 5-14 years

⁴ households with children aged 15 and above or old couples

8.3 Food production

Food availability is a crucial dimension of food security. Food availability in an agrarian society is largely realized through own food production. Different types of food production are discussed in this section.

Rice

Saturia was a food-deficit area and continues to be deficient in food production. Household food security was problematic for a long time. The situation improved after the introduction of high-yielding varieties of rice after 1989 and irrigation in the late nineties. In the past, local varieties of rice (*aush*, *aman* and *boro*) were mainly produced and consumed. Currently, high-yielding varieties of rice developed by BARI (BR3, BR11, and BR29) are grown during the winter and the summer, while deep-water varieties of *aman* are still produced in the low-lying fields. Hybrid rice was introduced in 2000 by the NGOs and traders and is becoming popular.

Cereals and potatoes

Wheat was introduced in the early nineties but did not become popular. People produced it for their own consumption. Most of the poor got their wheat through the cards provided by the vulnerable-groups-development (VGD) scheme, food-for-education (FFE) and food-for-

work (FFW) programs. They sold the wheat to buy rice at the market. BRAC introduced maize to the area in 2000. Maize production is becoming popular because of its resistance against pests and low production costs. People sell the maize instead of consuming it. People used to produce and consume millets and sorghum during the winter and summer. The crops were considered cheap and were mostly consumed by poor people. People currently grow them for their own consumption and sell a part of their produce. Sweet potatoes, another cheap food for the poor, were widely grown in the past but people currently only occasionally produce them.

Vegetables

In the past people consumed very few vegetables and rarely bought it for consumption. They consumed their own produce and seldom sold it. The poor once gathered wild vegetables, but this practice has declined because of the unavailability of such vegetables. In the past vegetables like gourd, sweet gourd, eggplant and beans, were mostly grown in the home-stand. People used to eat green banana as a vegetable but it is now rarely eaten. At present, a wide variety of vegetables are grown and consumed. Water lily is now gathered and sold at the market, which did not occur in the past. Nowadays vegetables are produced on a commercial basis and marketed to Dhaka. Low quality vegetables are distributed among those who help harvest and are marketed at local markets. People are now consuming more vegetables and they often buy them at the markets.

Fruit

Jackfruits used to be available and consumed during summer and the rainy season. Many jackfruit trees died as a result of the 1988 floods and production dropped. People planted jackfruit trees again and now huge amounts of jackfruit grow in the area and are marketed to the Dhaka. Papaya and banana were also once grown and consumed in the household but at present these are also grown commercially. In the past, Muslims never planted coconut trees, only Hindu households grew and consumed coconut. Muslims used to buy coconut at the market. Now Muslims also plant coconut trees around their houses. Date palms have been grown for a long time. People do not consume the fruits but produce brown sugar from the juice of these trees during winter. The area is famous for its brown sugar production. Other local varieties of fruits such as mango, guava, *gab*, *ata*, and wood apple are grown on a small scale. Unlike in the past, many imported fruits such as apples, grapes and oranges are now available at the local market.

Fish

People claim that they consumed more fish in the past than at present. They once fished in open water during the floods and in the swamps during the winter and the dry season. The random use of pesticides and fertilizers together with over-fishing has drastically depleted open-water fisheries. Nowadays, fish is mostly grown in ponds, although open-water fishing is still done during the flooding season. Fish was also marketed outside the area in the past, but at present most fish is sold in the local markets, some of it coming from Dhaka. Fish consumption by the poor is seasonal. They consume fish immediately after the flood when people fish themselves. People mostly eat fish once a week, buying it at the weekly market.

Milk

In the past, milk was mostly consumed by Hindus. Even a poor Hindu family tried to provide at least one cup of milk per day to all family members. Muslims hardly drank milk in the past, but its consumption is now increasing among them. People now rear cattle on a commercial basis, assisted by NGOs. They also rear goats. Goat milk is mostly fed to babies.

Poultry and eggs

People traditionally grow native chicken. They mostly consume the eggs but sell the poultry. In return, they buy broiler cheap chicken. The poor in the past entertained their guests with boiled eggs, but these have been replaced by broiler chicken. People reared ducks during the flood season and sold them during the winter. They consume ducks occasionally. They either consume the eggs of the ducks or sell them.

Other consumables

People produced and consumed pulses like blackgram in the past on a large scale but this is currently rare. Another pulse, lentil, was widely produced and consumed but it is now produced only on limited scale because production is not cost-effective. People once produced oil seeds, such as mustard and sesame, during the winter but vegetables like cabbage, cauliflower, beans, tomato, carrots and radishes, and other crops such as maize and wheat, have taken over. People also once produced spices like ginger, turmeric, coriander, onion and garlic on a large scale, but not anymore.

Cash crops

Jute was cultivated in the past as a summer crops on more than 60 percent of the land but this has dropped to less than five percent. Due to the presence of the tobacco factory in the area, more people are inclined to grow tobacco since the tobacco factory provides loans and buys all their produce. Sugar cane is also produced in recent years to make local variety of sugar. These crops are considered cash crops.

8.4 Social capital and food security

Food gifts

Food gifts are part of rural culture. From the IFPRI and survey data it was observed that food gifts constitute a very small portion of consumption. Kin or neighbors used to give food if special foods were prepared. This food-giving is totally the women's concern, but sometimes men interfere in the proceedings, especially when giving to kin. Food-giving occurs between people of the same status and from rich to poor. This system was very strong in the past. One woman in the women's group commented:

In the past we had food problems in my family. We always had to cope with hunger so we were provided with food by our rich neighbor. Our relatives were poor so they seldom provided us with food. Now we have less of a hunger problem in the village but rich neighbors rarely give us food.

The scenario among well-off families is different. One woman said:

During our childhood we were always sure that whenever nice food was cooked among our kin we must get a share. At present this has changed. Still we exchange foods, but not like our parents or grandparents did. Now we try to satisfy our own needs rather than give food to others.

When this issue was discussed among the men they responded as follows:

Providing food gifts means to cook more than you need. Our wives are not willing to do it the way our parents or grandparents did. They try to satisfy their own family members. Our wives also give food away but not like what it was in the past.

One key informant explained the issue in the following way:

Look, everything is changing. Our social values are also changing. I was raised in an extended family. Preparing nice foods during festivals and exchanging food with kin and neighbors was part of the culture. That culture is eroding. We are becoming self-centered. Now we prefer nuclear families. This nuclear family concept is responsible for eroding the system.

The exchange of food between Hindus and Muslims is rare. Hindus and Muslims generally live in different hamlets or villages. Exchange of food among Hindus is limited due to the caste system. Food exchange among Hindus occurs only between families of the same caste and between kin. Higher-caste Hindus offer food to the lower castes but they will never accept food from the lower castes. Lower caste Hindus do not take food from Muslims, even when they are working at Muslim houses. A key informant added:

Our children used to join Hindu festivals and take their food, but the elderly people do not. Hindus rarely join our festivals, especially the Eid festival, due to their religious reservations. However, they always joined our marriage ceremonies and we also go to theirs.

The exchange of food gifts could be observed during the fieldwork, but we also noted that families often cook nice foods without offering some to their neighbors. Wives may ask for such food for their husband if they have no good quality vegetables themselves.

Food borrowing

Food borrowing is very common among rural people and it is well documented in the IFPRI and survey data. Kin and neighbors are the main sources of borrowing. Among kin, the brother or brother's wife is the first to be turned to (see Table 2.21). Food borrowing is part of daily life. Even well-off families sometimes borrow food, especially non-staple items from kin or neighbors. Among the poor it often happens prior to weekly market. Borrowing food is mainly done by women. When a woman does not manage to borrow food, the husband tries to borrow from a distant place or purchase food at the market on credit. This is very common among poor people. Rural people seldom refuse borrowing and regard it as a religious obligation. One woman in the focus groups commented:

Nobody knows when one would need to borrow, so we rarely refuse if someone asks for food to borrow. It is also an obligation from Allah to give it if someone asks to borrow food. We always try to lend people food but if someone is borrowing all the time, we refuse. Rich people also borrow, but they usually do not borrow rice, only small things like spices and other condiments.

Borrowing food was more common in the past, but the practice seems to be declining. Markets were once mostly on weekly basis and far away from the village so people had to rely on borrowing. They would repay immediately after shopping. Sequential borrowing is not allowed. If someone tries to borrow before having repaid the old loan, people refuse to lend further. Borrowing has a religious dimension. One key informant said:

Muslims usually borrow food from kin or their Muslim neighbors but not from Hindus. Due to cultural problems, Hindus refuse to borrow food or even usable goods. Muslims borrow money from the Hindus. Lower-caste Hindus always borrow from Muslims, but not from higher-caste Hindus. Lower caste Hindus are more close to the Muslims. Muslims never mind lending foods to them.

Food borrowing is a short-term phenomenon. For a small quantity of food it is normally interest free, and the food has to be returned within days to maximum within a month. This type of borrowing relies on personal relations and client-patron relationships. Among Hindus, the caste system prevents food borrowing between people of different castes.

Food loan

It was found in both the IFPRI and survey data that food loans are also common in the study area. The poor usually take food loans during pre-harvest or flood period. Food loans are more pronounced in the event of a crisis like severe floods, but when the floods are very severe like in 1998, it is difficult to get a food loan. Men in the focus groups said:

Food loans are common among the poor or small farmers during the pre-harvest period or in the event of flood. At the time of crisis more people tend to borrow so it is difficult then. In such a situation people have to take food loans, which they do not mind. We have to repay the loan in food. For food loans we have to pay interest, as much as two times the loan. We repay the food after the harvest. If the crop fails we have to pay money in return.

Rice is taken as a food loan and has to be paid back with interest but no collateral is required. This type of borrowing relies on personal relations, client-patron relationships and social networking. The loans have to be repaid with rice after harvesting and at a high rate of interest in kind. Food loans are usually provided by the big landowners. In the event of a big flood like in 1998 it was difficult to get a food loan because there was such a high demand and the rate of interest went up as well.

The NGOs and food security

When a food loan is not available, people have to borrow money or sell their assets. Borrowing money varies from short to long-term arrangements. Most of the NGOs provide their loans only for production purposes, but we could observe borrowers using the money for consumption purposes, especially for buying food. This practice of using production loans for consumption puts families into a cycle of debt. Many household have memberships in more than one NGO. They borrow from one NGO to pay the installments of another NGO loan or pay back non-formal money lenders (Cases 6.2 and 6.4). By providing training and credit for income-generating activities and enlarging employment opportunities, NGOs are providing support to attain food security. NGOs are also involved in direct sectoral development work in the fields of agriculture, fishery, poultry and livestock, social forestry and infrastructure development. Through health and nutrition programs they are addressing health and nutrition issues. NGOs like BRAC, GKT and Proshika are working in the study area providing improved varieties of seeds for both cereals and vegetables and are promoting commercial vegetable cultivation.

NGOs also work directly to enhance food security in vulnerable households. NGOs such as BRAC are involved with the vulnerable groups development (VGD) program and participate in the final selection of VGD card beneficiaries. In the survey it was found that NGOs provided food to victims in the event of disasters, like the 1988 floods and the 1989 tornado. In 1989, all NGOs working in the study area provided food support to all the households affected by the tornado. The government also relied on BRAC in 1988 to provide food relief because of their grassroots network. During the 1988 floods, BRAC prepared home-made bread at their offices and distributed it among households. The local government authority also provided funds for this initiative. Through this initiative, many very poor women were employed in bread preparation when it was very difficult to find a job to sustain their livelihood.

Food relief

The study area is classified as a food-assisted area by the World Food Program (WFP) and the government of Bangladesh. Food assistance is provided through VGD cards to vulnerable groups such as widows, deserted and separated women and households with a sick husband. The Food-for-Education (FFE) program aims at increasing girls' education as well as food security among poor households. In the event of severe floods and during post-flood periods, people are assisted through vulnerable group feeding (VGF) programs, and they received food relief after the tornado as well.

8.5 Gender and food security

The household plays a strategic role in agricultural production processes in Third World countries, especially in food production. The gendered division of labor in agricultural and food production is usually clearly marked. The study area is no exception.

Food processing and seed preservation

Women are mainly responsible for the post-harvest processing of food grains. Men are involved in large-scale processing and preservation of food grains. Sometimes this is done by several members of the household. When men do the processing, women are still involved in cooking for the men and providing logistic support from the house. Small-scale processing and preservation of seeds is also a women's affair. Large-scale seed processing and preservation is done by men with female support.

Vegetable cultivation

Vegetable cultivation is labor intensive and consequently involves all adult family members, including the wife and daughters. It is women's work to manually remove the parts of plants that are affected by pests and kill the insects. Harvesting vegetables and sometimes also selling the produce are done by the young daughters as well. Kitchen and house gardens are solely kept by women.

Poultry and livestock rearing

Poultry rearing is exclusively done by women. It provides eggs and meat for family consumption and thus plays a crucial role in the nutrition of children. The income from selling poultry and eggs usually belongs to the women and they can use this money for their own expenses or to meet the children's needs. Goat rearing is also done by women. Normally, women (wife and daughters) and sometimes sons take care of the goats. Only young children consume goat milk. Additionally, the household earns cash by selling the goat, which provides economic solvency. Cow rearing is another economic activity in which women are widely involved. Men cut the grass for fodder and shower the cows, but all other activities such as feeding and cleaning up the cowdung are done by women. Sometimes they also do the milking, even though it is generally regarded as men's work.

Food preparation

Food preparation is exclusively a women's affair. Men never prepare food. Poor women have to manage and prepare food with the limited resources they have at their disposal. Men seldom look after what will be cooked. A woman in the female focus groups said:

Men never want to know how we manage; they only want their food during meal times. At a time of crisis we have to go hungry and feed our children and husbands. They rarely look after us, whether we have taken food or not. If we ask for something they will buy it, but they rarely buy food on their own initiative. Many times, we have to remind them to buy food.

When discussing this with the men, one commented: “It is easy to ask for something but we have to buy it. We try to buy what our wives ask for but many times we don’t have enough money, so we buy it only after repeated queries”. The men acknowledged the ability of women to prepare food and satisfy their family with limited resources. One man said:

The quality of a wife shows in how she can manage. A good wife can manage with limited resources and bring prosperity to the family. Many women cannot do that properly and the family suffers.

8.6 Seasonality and food security

Seasonality plays a crucial role in food security. There are three cropping seasons in Bangladesh: winter, summer, and the monsoon. During summer, jute, *aus*, BR3, BR11 and BR29 (high-yield varieties) and new hybrid varieties of rice and maize are grown. During the monsoon season, broadcast or transplanted *aman*, deep-water *aman*, and BR11 rice-varieties are grown, and during the winter, *boro* and high-yielding varieties of rice, wheat, pulses, mustard, sesame, winter vegetables, potatoes, sweet potatoes, and spices are grown. Enough good food is eaten right after harvest and during winter, but there is a persistent food shortage during the sowing of crops and the pre-harvest period, when farmers have to invest a lot of money at a time when they cannot afford it. They thus have to generate resources by selling food grains and cash crops, or by borrowing. Farmers have to tighten their grip on consumption during this time. A woman in the focus groups expressed her concern:

During sowing we have need for seeds or seedlings, laborers and fertilizers. If we have seeds of our own we don’t need to buy those, but we have to hire laborers and buy fertilizers. We have to gather our resources from savings or by selling food stuff or borrowing. Thus, we have less food during this time or sometimes we even take only two meals per day for a short period of time.

The farmers have to apply fertilizers for three months, paying for these expenses from their own resources. They have to apply pesticides as well, especially when seeds are coming up. Sometimes they need to apply more pesticides than anticipated, which cause problems in mobilizing resources and may force them to borrow again. Farmers nearly exhaust their resources during this crucial period while waiting for their crops to be harvested. A woman in the focus groups described her condition in the following words:

The pre-harvest period is the very crucial period for us. Most of us have to ration our consumption during these periods, especially during March to April [also end of Bangla calendar year] and during October, especially during the last half of this month. It is really a very crucial period. We consume our foods and exhaust our resources to cope with the floods. By the time the floods are gone we still have to wait for harvest. We used to cook less compared to other times and sometimes we take only two meals per day.

There has been a shift in the lean period due to changes in the farming system. In the past, due to the different crop harvest time, rice was harvested during late June or even during early July, so people had to save food for the months of June and July. There is now no more shortage during these months since the new high-yield varieties were introduced. The lean period has now shifted to earlier months. People now face food shortages during March and April (pre-harvest period). The other lean periods are the months of October and November, as in the past. This may start as early as September to as late as the first half of November (which is another pre-harvest period). The period between mid-October and mid-November corresponds to the Bangla calendar month *Kartik* and is generally known as ‘*mora*

kartik', which means dead end of the season. This is a common food-crisis period all over Bangladesh, so the government uses vulnerable group feeding (VGF) cards to provide food relief.

Food preparation and intake varies with time in poor households. They cook only twice a day and, depending on the economic condition of the household, sometimes take only two meals. In the focus group, a woman said:

During the pre-harvest period we ration our food. We cook less, only twice or even once [per day]. For breakfast we take rice soaked in water overnight, but during post-harvest period we do not do that. We always have to manage with what we have.

We observed that during the pre-harvest period the poor sometimes replace rice with root crops like sweet potatoes, which is seen as a “poor men’s crop”.

During the pre-harvest and flood periods the poor have to go hungry because they have few or no income opportunities at all. During this time, some of the poor household heads would migrate temporarily to Dhaka, leaving their family at home. Due to the absence of the male household head the women have to manage the crisis on their own. One woman described her situation in the following way:

My husband left me with three children and only five kilograms of rice. The rice lasted only for a week. After that I had to manage for another fifteen days before my husband was back. I borrowed food and money, and worked in a rich man’s house. We could barely fill our stomach.

8.7 Strategies adopted to attain food security

Normal times

During normal periods, households try to consume staples (rice and wheat) from their own production and/or purchase these from the market with their earnings. The poor households collect some food like rice and potatoes through post-harvest gleaning. For non-staples (pulses) the households sometimes depend on their own production, but most of the time they buy them at the market. For vegetables, households rely on their own production at or around the household premises and only occasionally buy it at the market. The women from poor households also gather wild vegetables, collect vegetables from the fields of kin or neighbors (jute and chickpea leaves) and from commercial production fields in return for picking vegetables. Fish is generally bought at the market or caught by seasonal open-water fishing. In the past, poultry and eggs were usually self-produced and consumed, but at present raised poultry is sold and commercially-raised poultry is purchased at the market. Money from the sale of poultry and eggs usually belongs to women, who use this money to purchase other consumables. Milk is self-produced or purchased from neighbors or at the market. In the past milk was not so widely available as today. Due to milk-marketing opportunities through Milk Vita, Arong Milk and private entrepreneurs, cattle rearing and milk production are now part of life in the study area, which was not so in the past. Sometimes poor households have to borrow food from kin or neighbors to smooth consumption.

Seasonal migration on a contract basis to obtain rice is common among poor households. Circular migration among some of the poor and well-off households for wage labor and business purposes is also taking place. Out-country migration is relatively new among food security strategies.

Short-term emergency

Households rely on their own stocks of food or purchase food at the market to meet short-term emergencies. If this is not possible the tendency is to borrow food from kin or neighbors. Money may also be borrowed from kin or neighbors to buy food. Food borrowing or borrowing small amounts of money (up to 100 taka) is solely women's business, while borrowing larger amounts is done by men. In the survey it was clearly shown that it is the husband's brother's wife who lends food and small amounts of money. When men borrow money they tend to go to their brothers or parents. For short-term emergencies, households rarely borrow money from NGOs or moneylenders on an interest basis.

Normal flood periods

Pre-harvest floods are a yearly phenomenon which households take preparatory measures for. They try to store foods and use their own stocks or save money and purchase at the market. Households cut down their food consumption during such periods to make their stocks last. If the household resources are not enough, food is borrowed from kin or neighbors, followed by selling poultry. When these strategies fail, households try to borrow money from kin or neighbors without interest. If that does not succeed, they try to get collateral-free loan from neighbors or NGOs on an interest basis. Only when these options are exhausted will households try to get a food loan from a rich person or a moneylender which they will have to pay high interest for.

Severe floods

In case of severe floods, households will first try to implement the same strategies that are applied when there are normal floods. When these strategies fail, they opt for selling small assets like utensils, poultry, goats, or even cattle. Eventually this is followed by renting out or the mortgaging of land.

Adverse conditions

In case of divorce or desertion, women usually return to their parental houses, after which the parents try to marry them off again. Upon the death of a husband, a woman either returns to the parental house or stays at her husband's house. This depends on the age of the woman, the number and ages of children, and the attitude of the husband's family. The situation is worse when a husband is sick, and people will rely on stored food, savings, borrowing food and food loans and, in the end, borrow money from kin, neighbors, friends, NGOs and moneylenders. Table 8.4 summarizes the strategies in the various conditions.

Table 8.4 Strategies adopted to attain food security

Particulars
Normal period
<ul style="list-style-type: none"> • staples (rice and wheat) from own production and/or purchase from the market • non-staples (pulse) own production • purchase from the market with saved money • gleaning of foods by the ultra poor/poor after harvest • vegetables – own production at/around household premise, gathering wild vegetables, collecting vegetables from the field, from commercial production in return for picking vegetables, purchase from the market • fish – buying from the market, open water fishing • poultry and eggs – from own production, purchase from neighbors or the market

Table 8.4 (continued)

-
- milk – from own production or purchase from neighbors or the market borrow food from kin/neighbors
 - seasonal migration on contract basis to collect rice or circular migration

Short term (for emergency purpose)

- use own stock
- purchase from the market with saved money
- borrow food from kin/neighbors
- borrow money from kin/neighbors

Pre-harvest and normal flood period

- store foods and use own stocks
- save money and purchase from the market
- consume less than required to avert hunger situation in the future
- borrow food from kin/neighbors
- sell poultry
- borrow money from kin/neighbors without interest
- collateral-free money loan from neighbors with interest
- collateral-free money loan from NGOs with interest
- borrow food from well-off persons/landlords with interest
- borrow money from money lenders with interest, with or without collateral
- sometimes sell small assets

Severe flood period

- store food and use own stocks
- save money and purchase from the market
- consume less than required to avert hunger situation in the future
- borrow food from kin/neighbors
- sell poultry
- borrow food from well-off persons/landlords with interest
- borrow money from kin/neighbors without interest
- collateral free money loan from neighbors with interest
- collateral free money loan from NGOs with interest
- borrow money from moneylenders with interest, with or without collateral
- sell assets
- rent-out/mortgage land

Divorce or desertion

- return to the parental house

Death of husband

- Return to the parental house
- Stay at the husband's house and raise their children

Illness of spouse

- Use stored food
 - Use saved money to purchase food
 - Sell small assets, mortgage or sell land
 - Food gift from kin/neighbors
 - Borrow food from kin/neighbors
 - Borrow money from kin/neighbors, NGOs, moneylenders
-

8.8 Determinants of food security

8.8.1 Determinants of household food security

For the quantitative data, average non-staple calorie intake was used as an indicator for household security, as this represents the real food security status more sharply than other indicators. Whenever there is a food shortage, households try to maintain their calorie intake to an optimum level. First, households avoid expensive foods such as non-staple foods, then they switch to cheap staple foods like sweet potatoes, potatoes, wheat or corn. Non-staple food intake has a lower priority in a situation of food shortage. Hence, non-staple calorie intake gives a good insight into household food security.

Table 8.5 Determinants of household food security: regression results (linear OLS)

Variables	Pre-flood period			Post-flood period		
	Co-efficient	SE	T-stat	Co-efficient	SE	T-stat
Sex of the household head	38.739	39.985	.969	67.563	44.389	1.522
Age of the household head	-6.482	3.821	-1.697*	-1.618	3.837	-.422
Age square	.083	.038	2.179**	.024	.036	.660
Education of Household head	6.698	2.673	2.506**	7.437	2.605	2.855***
Dependency ratio	-66.339	16.766	-3.957***	-44.225	16.222	-2.726***
Percent of total income from						
• Plot production	-.588	.829	-.710	-.631	.571	-1.105
• Non-plot production	-1.981	1.353	-1.464	-2.049	1.973	-1.039
• Rented-in land production	.270	2.867	.094	-2.545	3.215	-.792
• Fish farming	-6.427	9.898	-.649	-.657	.569	-1.154
• Open water fishing	.092	1.550	.059	12.536	23.507	.533
• Livestock production	-.664	.758	-.875	-.525	.775	-.677
• Labor sale	-.825	.755	-1.093	-1.037	.614	-1.689*
• Self-employment	.603	.690	.874	.113	.540	.210
• Remittance	.429	1.191	.360	.629	.866	.726
• Agri-equipment rent	-1.625	1.280	-1.269	.146	1.317	.111
• Asset sale	1.805	2.769	.652	-2.069	3.633	-.570
• Dowry received	-.468	1.794	-.261	-.812	1.643	-.494
• Social security program	-3.574	10.124	-.353	-3.429	2.422	-1.416
• Other sources	3.023	3.898	.776	.872	.963	.906
Social capital (credit taken without collateral)	.001	.002	.688	.001	.001	.972
Credit taken with collateral	.001	.003	.344	-.001	.001	-.791
Landholding of the household	.033	.093	.354	.077	.099	.773
Total per capita monthly expenditure	.068	.021	3.181***	.036	.015	2.349**
Constant	439.742	125.210	3.512***	304.387	124.234	2.450**
Adjusted R square	.240	-	-	.166	-	-
Durbin-Watson stat	1.915	-	-	2.123	-	-

Significant at *(0.1), ** (0.05), *** (0.01)

Dependent variable = Total expenditure of the household

The determinants of household food security as measured by non-staple calorie intake for the two periods are presented in Table 8.5. The data shows that there is a strong positive

correlation between total household expenditure and the intake of non-staple foods. Education of the household head also significantly influences expenditures on non-staple foods during both periods, suggesting that it is of prime importance for a better livelihood portfolio leading to household food security. The dependency ratio is another important factor: households having a lower dependency ratio could spend more on non-staple food than those having higher dependency ratio. Landholdings, social capital or even credit taken with collateral did not have any significant influence on household food security. The significance of the labor factor during the post-flood period suggests that people exhausted their livelihood options during this period and had no other choice but to sell their labor to maintain their livelihood.

8.8.2 Determinants of individual food security

The determinants of individual food security are shown in Table 8.6. Gender appears to be a crucial variable. Men and boys consume three to four times more non-staple foods than their female counterparts. Female members of the household tend to eat after the men and boys have their meals. Thus, women get the food that is left over. The pre-flood period shows that older members of the household consume more non-staple foods than younger ones and that individual food security is positively related to body weight.

Table 8.6 Determinants of individual food security

Variables	Pre-flood period		Post-flood period	
	Co-efficient	T-stat	Co-efficient	T-stat
HH level per capita non-staple calorie intake	.889	44.027 ***	.937	50.626 ***
Sex of the member	64.247	10.745 ***	59.837	11.519 ***
Age of the member	2.830	3.155 ***	-.334	-.482
Age square	-3.544E-02	-3.202 ***	5.755E-03	.678
Height	.339	.952	.367	1.126
Weight	2.663	4.397 ***	1.122	2.321 **
Constant	-173.388	-5.582 ***	-102.308	-3.259 ***

Significant at * (0.1), ** (0.05), *** (0.01).

Dependent variable = individual non-staple calorie intake.

8.9 Nutrient adequacy

8.9.1 Nutrient adequacy

The degree of individual nutrient-intake adequacy was calculated according to age, sex and period in time (pre- or post-flood). The dietary guidelines as proposed by the Indian Council of Medical Research (1994) were followed to assess nutrient adequacy. For iron intake, the guidelines of FAO (1988) were followed, while the guideline proposed by Bangladesh National Nutrition Council (1995) for the iron intake of men was used. Individual nutrient-intake is considered adequate if ≥ 80 percent of the recommended dietary allowance (RDA) is satisfied.

Results are presented in Table 8.7. The data reveal that, in most cases, adult males are in a better position regarding the intake of calories, protein, fat, iron and vitamin A. Nutrient intake declined in most cases in the post-flood period as compared to the pre-flood period. A high proportion of females in all groups failed to reach even 80 percent of the RDA. No clear trend could be observed relating to age group, although the situation among pre-school children

was worst. Female household heads suffered most for all nutrient intakes during the post-flood situation.

Table 8.7 Percent of individuals < 80 percent of recommended dietary allowance

Groups	Sex	Period	Calorie	Protein	Fat	Iron	Vitamin A
Adult	Male	Pre-flood	14.2	7.9	27.1	14.5	31.5
		Post-flood	22.6	15.0	48.7	22.3	38.2
	Female	Pre-flood	15.1	17.1	67.0	91.0	42.7
		Post-flood	26.3	24.8	77.8	92.4	45.3
School Children	Male	Pre-flood	22.1	36.3	80.2	81.7	50.4
		Post-flood	30.0	47.8	79.8	77.3	61.9
	Female	Pre-flood	31.6	52.8	88.6	94.8	62.7
		Post-flood	31.4	56.5	91.1	95.3	59.5
Pre-School Children	Male	Pre-flood	62.0	40.0	94.0	100.0	72.1
		Post-flood	30.0	10.0	100.0	100.0	60.0
	Female	Pre-flood	79.3	56.9	96.6	100.0	79.3
		Post-flood	60.0	20.0	100.0	100.0	60.0
House-Hold Head	Male	Pre-flood	15.4	9.7	24.7	16.5	31.5
		Post-flood	24.0	16.5	47.9	19.9	37.5
	Female	Pre-flood	31.3	31.3	68.8	68.8	43.8
		Post-flood	56.3	68.8	87.5	93.8	62.5

8.9.2 Nutrient-intake differences between the pre- and post-flood situation

The results show an overall decrease in most nutrient intakes during the post-flood period compared to the pre-flood period, particularly for the total calorie intake among both male and female adults (Table 8.8). Adult women suffered most in nutrient adequacy during the post-flood period compared to the pre-flood period. They had significantly less total calorie intake and intake of protein, fat and vitamin A, which reflects the cultural practice of adult women taking less food and sacrificing themselves for other household members. This also corroborates the observation that adult women of the household take food after all household members have taken theirs. Less intake of animal food by adult women and schoolgirls suggests that they probably compromised their food intake for their husband, sons or brothers, since animal food is the most expensive kind of food. The better situation in nutrient intake by pre-school children (both boys and girls) suggests that adult women and schoolgirls might have cut down on their food intake in favor of their pre-school children and siblings (Table 8.9 and 8.10). Among the household heads, only vitamin-A intake among the female household heads was significantly lower during the post-flood period than the pre-flood period. This may have been caused by switching to sweet potatoes as a staple due to a scarcity of rice (Table 8.11).

Table 8.8 Food intake differences between pre- and post-flood periods for adults

Variables	Male		T-stat	Female		T-stat
	Pre-flood	Post-flood		Pre-flood	Post-flood	
	Mean (SD)	Mean (SD)		Mean (SD)	Mean (SD)	
Calories						
Total	2955.69 (635.12)	2690.61 (592.87)	6.040*	2205.53 (452.59)	2057.29 (487.75)	4.475*
Staple	2478.79 (590.20)	2303.61 (545.62)	4.322	1872 (403.05)	1770.77 (428.04)	3.468*
Non-staple	476.90 (185.83)	378.35 (174.71)	6.958	333.28 (143.57)	286.52 (131.89)	4.831
Sources of calorie						
• Plant	402.90 (154.20)	329.19 (157.38)	6.611	290.19 (125.04)	247.74 (116.77)	4.997
• Animal	74.00 (62.93)	58.15 (48.93)	3.965	43.08 (34.92)	38.78 (40.33)	1.618*
Total protein	68.07 (15.69)	62.29 (14.56)	5.356	50.05 (11.16)	47.36 (12.40)	3.244*
Total fat	20.79 (7.93)	17.57 (7.60)	5.800	15.44 (7.70)	13.14 (5.48)	4.917**
Total iron	10.28 (3.145)	9.58 (3.25)	3.043	7.72 (2.33)	7.54 (2.75)	.963
Vitamin A	730.52 (428.69)	703.38 (581.85)	.735*	617.30 (361.15)	638.38 (563.79)	-.629**
Significant at * (0.1), ** (0.05)						

Table 8.9 Food intake differences between pre- and post-flood periods for school children

Variables	Boys			Girls		
	Pre-flood	Post-flood	T-stat	Pre-flood	Post-flood	T-stat
	Mean (SD)	Mean (SD)		Mean (SD)	Mean (SD)	
Calories						
Total	2101.82 (617.62)	2033.44 (609.97)	1.256	1811.61 (480.31)	1752.73 (491.29)	1.217
Staple	1774.11 (533.38)	1710.44 (543.35)	1.334	1548.07 (416.65)	1487.11 (477.92)	1.414
Non-staple	327.70 (167.30)	323.00 (156.33)	.327	263.54 (125.32)	265.62 (134.89)	-.161
Sources of calorie						
• Plant	278.71 (139.99)	274.41 (140.37)	.345	226.86 (108.11)	226.57 (113.92)	.026
• Animal	49.00 (42.96)	48.58 (40.51)	.111	36.68 (30.66)	39.06 (41.34)	-.653*
Total protein	47.37 (15.11)	46.61 (14.65)	.573	40.51 (11.74)	39.79 (12.28)	.599
Total fat	14.33 (7.42)	13.72 (7.46)	.924	11.92 (6.36)	11.62 (6.89)	.449
Total iron	6.96 (2.90)	7.13 (2.97)	-.663	5.99 (2.38)	5.94 (2.05)	.191
Vitamin A	523.12 (471.91)	529.23 (641.30)	-.123	461.38 (385.82)	473.29 (345.02)	-.328

Significant at * (0.05)

Table 8.10 Food intake differences between pre- and post-flood periods for pre-school children

Variables	Boys			Girls		
	Pre-flood	Post-flood	T-stat	Pre-flood	Post-flood	T-stat
	Mean (SD)	Mean (SD)		Mean (SD)	Mean (SD)	
Calories						
Total	1028.60 (354.44)	1429.03 (324.30)	-3.303	970.04 (388.28)	1202.91 (404.84)	-1.741
Staple	811.46 (329.98)	1163.90 (301.46)	-3.124	779.70 (365.91)	985.83 (370.60)	-1.642
Non-staple	217.14 (138.87)	265.13 (110.27)	-1.028	190.36 (1229.37)	217.09 (101.09)	-.620
Sources of calorie						
• Plant	165.19 (93.31)	208.12 (119.54)	-1.267	158.76 (122.36)	195.95 (90.38)	-.917
• Animal	51.95 (65.81)	57.01 (43.82)	-.232	31.60 (32.61)	21.14 (22.22)	.973
Total protein	23.39 (9.18)	32.66 (6.46)	-3.034	21.01 (9.16)	28.11 (9.88)	-2.240
Total fat	8.41 (6.06)	10.40 (2.22)	-1.019	9.27 (11.00)	9.74 (5.01)	-.130
Total iron	3.45 (1.70)	5.13 (1.69)	-2.864	2.98 (1.42)	4.39 (1.72)	-2.801
Vitamin A	313.67 (505.67)	335.81 (226.98)	-.135	202.60 (150.75)	284.64 (133.53)	-1.613

Table 8.11 Food intake differences between pre- and post-flood period according to household headship

Variables	Male household heads			Female household heads		
	Pre-flood	Post-flood	T-stat	Pre-flood	Post-flood	T-stat
	Mean (SD)	Mean (SD)		Mean (SD)	Mean (SD)	
Calories						
Total	2900.11 (613.30)	2655.90 (588.10)	4.812	2035.60 (425.70)	1555.22 (511.07)	2.287
Staple	2428.84 (571.52)	2260.88 (504.89)	3.599	1724.97 (340.19)	1427.52 (442.06)	2.133
Non-staple	471.27 (181.24)	395.02 (174.20)	4.956	310.63 (137.73)	227.70 (108.40)	1.893
Sources of calorie						
• Plant	395.56 (144.81)	335.68 (155.95)	4.598	280.77 (125.99)	190.19 (99.02)	2.261
• Animal	75.71 (68.45)	59.34 (49.30)	3.170	29.86 (19.99)	37.50 (39.21)	-.695
Total protein	66.46 (15.05)	61.97 (13.95)	3.580	48.23 (11.11)	39.14 (13.03)	2.124
Total fat	20.80 (8.03)	18.17 (8.14)	3.760	13.20 (5.01)	10.72 (3.76)	1.585
Total iron	9.96 (2.85)	9.70 (3.11)	1.018	8.29 (3.10)	6.24 (2.86)	1.944
Vitamin A	709.22 (394.41)	682.66 (495.70)	.685	492.33 (506.25)	336.55 (336.55)	1.847*

Significant at * (0.1)

8.10 Nutritional status among pre-school children

Normally, the age limit accepted for pre-school children is between 6 and 72 months. In Bangladesh, pre-school children below the age of two are normally not given a non-staple food, which is why we took a lower age limit for pre-school children of two years, as the indicator for calculating nutritional status is based on non-staple calorie intake. We used the height-for-age Z-score (HAZ) values to express the level of nutritional status.

Table 8.12 shows that non-staple calorie intake has a positive impact on individual nutrition among pre-schoolers. Boys have better nutritional status during the pre-flood period but the situation seems to reverse during the post-flood period, although the difference is not statistically significant. The reasons are not clear. It might be that gender discrimination declined. We found a significant influence of parents' education during the pre-flood period, but not in the post-flood period. The children of taller mothers were taller, which might be due to genetic factors rather than nutritional status.

Table 8.12 Determinants of nutritional status of pre-school children aged 2-5 years: regression results (linear OLS)

Variables	Pre-flood period			Post-flood period		
	Co-efficient	SE	T-stat	Co-efficient	SE	T-stat
Sex of the child	-.445	.116	3.846***	.044	.152	-.288
Age of the child	-.055	.352	-0.157	-1.019	.997	-1.022
Age square	-.011	.054	-0.198	.128	.132	0.968
0-1 Dummy for Round 1/5	.038	.160	0.239	.181	.190	0.955
0-1 Dummy for Round 2/6	-.063	.160	-0.394	.079	.197	0.400
0-1 Dummy for Round 3	-.011	.163	-0.065	-	-	-
Father's general education	.108	.044	2.471**	-.198	.141	-1.406
Mother's general education	-.087	.049	-1.781*	.117	.144	0.809
Mother's height	.050	.012	4.277***	.058	.016	3.659***
Average per capita non-staple calorie intake	.001	.001	2.499**	.001	.001	2.330**
Per capita landholding	.001	.004	0.240	-3.523E-04	.008	-0.043
Constant	-8.967	1.827	-5.483***	-9.425	3.329	-2.857***
Adjusted R square	.174	-	-	.153	-	-
Durbin-Watson stat	.756	-	-	1.050	-	-

Significant at *(0.1), ** (0.05), *** (0.01)

Dependent variable = Height-for-age-Z-score

8.11 Food beliefs and taboos

Food taboos pose a serious threat to nutrient adequacy. The subject of discussion in this section is how food beliefs and taboos are affecting nutrition adequacy of different groups.

Pregnant women

A pregnant woman will reduce her food intake later in pregnancy for fear that the baby will be big and labor will be more painful. Niehof (1988) observed the same phenomenon in Madura, Indonesia. This traditional practice together with other factors resulted in about 30 percent of the babies having low birth weight (LBW) (World Bank, 2003). This figure was 50 percent as recently as 1990. Due to mass health campaigns and antenatal care, pregnant women are consuming more food, but the decrease in food intake by pregnant women is still prevalent. We observed that pregnant women are given iron tablets during antenatal care, but they do not take them because iron tablets often cause constipation. Pregnant women consume less milk and sweets but they take more sour foods. The reason cited by them was to avert vomiting. Pregnant women in the past ate burnt soil and uncooked rice, and even drank kerosene. At present these practices are rare. Pregnant women in the past were not allowed to drink coconut juice or eat pineapples, vegetables, duck eggs, hilsa fish and mutton and fried rice with chili. They were not allowed to eat vegetables for a fear of getting sick. Fried rice was not allowed because they feared that it might lead to possession by evil spirits. At present these practices are rare.

After childbirth and lactating mothers

In the past, dietary practices after childbirth were alarming. The mother was only given rice with red chili during the first seven days after child birth because it was thought that this would heal the wounds incurred during childbirth. This practice is now rare. The mother was

also not allowed to eat much rice during the first 40 days after childbirth, and was forbidden to take any vegetables or puffed rice. Fish and meat were allowed after seven days. However, hilsha fish and beef were not allowed during the first 40 days because their consumption would allegedly dry up the breast milk. Some big fish were not allowed for up to six months. These practices are now rare and the mother is allowed to eat all foods. The low food-intake among lactating mothers remains a concern, however. They do not consume enough water and protein-rich foods. Especially during the first 40 days after delivery, women are offered mostly dry foods, which results in constipation. Nowadays lactating mothers are allowed to eat everything.

Newborn babies

Newborn babies in the past were not allowed to take colostrums because it was thought to be a form of pus. Even at present, many mothers do not feed their babies colostrums despite mass breast-feeding campaigns. Giving honey to newborn babies was widely practised; it still is but denied in public. The belief is that if newborn babies are given honey or any sweet things immediately after birth it will make them talk politely as grown-ups.

Breast-feeding practices

Exclusive breast-feeding was rarely practiced in the past. Even at present this is not strictly followed. The mothers claim that they are practicing exclusive breast-feeding during the first four months, but in our observations we found the opposite to be true. On the other hand, babies are supposed to be given weaning foods beginning at five months, but this was not followed. Instead, exclusive breast-feeding was practised. However, most of the mothers breast-feed as long as they can. Babies in the past were breast-fed beyond two years and women still believe that children should not be given weaning foods before they are six months old.

Babies

We observed that mothers stop breast-feeding their babies when they are sick. Mothers give their children oral saline and water when the children get diarrhea, but no food. They fear that giving them more solid and normal foods the children will suffer even more. In the past, infants were not given cow's milk and fruit juice. Babies are currently given these foods.

Boys and girls

Food restrictions for men or boys are rare. They can take almost any type of food. Boys are only not allowed to eat chicken liver as it is said that it will make their hearts small. This stigma may cause them to suffer from vitamin-A deficiency, which is prevalent among children. Girls are still not allowed to eat chicken heads. They are also not allowed to eat twin bananas for fear that this will lead them to give birth to twins. Girls are also barred from eating milk-cream because of the fear that this will make them talkative when they go to their in-law's house. However, nowadays some mothers allow their daughters to eat chicken heads because they might not get any when they are married off. Young girls are also not allowed to take other rich foods in anticipation of the situation at their future husband's house when they will not get such foods. The mothers of these girls therefore control their food intake. One woman in the focus groups said:

My daughter likes cream [thick film on the top of milk when boiled] and butter [ghee], but I told her to hold her tongue about this because once she is married she will not be able to have these foods, so she must control her appetite from childhood. Then she will not have problems at the husband's house.

Another woman said:

It is not worth it. Because my daughter might be barred from taking those rich foods at her husband's house, my husband asks my daughter to take whatever food she likes. She might not be able to take those foods in the future. Our mothers did not allow us those foods and now we have to sacrifice ourselves for our husband and children.

8.12 Gender and nutrient adequacy

The custom of women of taking foods after all household members have taken their share is seriously affecting women's adequate nutrient intake. In the past, daughters even had to take their food after the sons. Now this has changed, and sons and daughters are served together. Young children are served first. The mother-in-law was in full control of the kitchen in the past, and wives were not allowed to eat before her. They were also not allowed to serve themselves; their mothers-in-law used to serve them. The wives could not decide what to eat and when to eat. Women complained that in the past their mothers-in-law gave them food only twice a day, first in the late morning and the second time late at night. Now they eat three times a day. The kitchen is now controlled by the wife and sometimes the elderly mother-in-law suffers. A man in the focus groups said:

We always ask our wives to take food with us but they always ignore our call and say if I take food with you all, then who will serve the food? This has been our practice for a long time, so our wives do not listen to us. But we find our daughters-in-law sometimes take food together with their husbands.

Most of the participants in the focus group discussions said that husband and wife eat together, but we observed that they still follow the old tradition of women eating later. Most of the time women take their food at least thirty minutes to two hours after serving food to all household members. One women participant commented: "If I fry one egg, then my husband tells me to divide it into two pieces and give one piece to our son and one to him". If I ask, "You always think about your son, why you never think about me or your daughter?" he replies: "Our son needs it for a good brain, so that he can do well in his studies". Another woman said: "I used to give the good food to my sons, and then to my daughters. I used to feed my mother-in-law more because otherwise she might speak badly of me, but if I explained to my husband he would understand. My daughters still reproach me, saying I used to feed my sons more. Right at the end, I would eat the leftovers, if there were any". A third woman commented: "My sons work so I feed them more. I cook fish for the son who works. If there is no fish, I fry eggs for him. My daughter does not work, so I feed her less. Do I not have to feed better the one who works more?". A fourth woman said: "I fed my daughter comparatively less. If my husband gave some food to my daughter our son snatched it away. If I gave my daughter one piece then I gave two pieces to my son. I feed my husband before my children. If he is not home, I save his share for him".

CHAPTER 9

SOCIAL CAPITAL AND GENDER

"It's not what you know, it's who you know"
Woolcock and Narayan (2000: 225)

This chapter discusses two key concepts of the study: social capital and gender. It looks into their empirical dimensions, their interrelationship, and their significance for livelihood and food security.

9.1 Social capital

The issue of social capital is discussed in detail in this section, and the determinants and different forms of social capital are also explored.

9.1.1 Determinants of social capital

In Bangladesh, the main sources of credit are the moneylender, NGOs, kin, and neighbors. NGOs also provide loans through groups upon the recommendation of the group leaders and members. Group trust functions as collateral in the micro-finance programs. Credit taken without collateral was used as the operational definition of social capital in the quantitative analysis of the IFPRI data used for this study.

When looking at the determinants of social capital as presented in Table 9.1, it appears that landholding is the most important factor in getting a loan without collateral during the pre-flood period. The highly significant relationship with landholding indicates that landholding in fact implicitly and informally functions as collateral, as does ownership of assets (given the highly significant relationship with asset value). These findings suggest that the credit providers want to be sure that the borrowers have enough material assets to repay the loan.

Table 9.1 Determinants of social capital: regression results (linear OLS)

Variables	Pre-flood period			Post-flood period		
	Co-efficient	SE	T-stat	Co-efficient	SE	T-stat
Sex of the household head	849.319	1376.039	.617	2667.331	2338.233	1.141
Age of the household head	289.959	134.021	2.164**	-203.401	256.209	-.794
Age square	-2.970	1.335	-2.225**	1.969	2.477	.795
Education of Household head	17.189	90.833	.189	-45.597	153.783	-.296
Dependency ratio	1302.292	587.752	2.216**	1506.315	990.806	1.520
Assets	.145	.023	6.329***	.034	.016	2.118**
Landholding of the household	-5.564	2.894	-1.923*	2.833	6.133	.462
Constant	-2597.324	3578.142	-.726	8457.660	6923.226	1.222
Adjusted R square	.143	-	-	.024	-	-
Durbin-Watson stat	2.150	-	-	1.595	-	-

Significant at * (0.1), ** (0.05), *** (0.01) level

Dependent variable = Credit taken without collateral

9.1.2 Forms of social capital

In a country like Bangladesh where poverty is prevalent, social capital plays a crucial role in maintaining and enhancing people's livelihood, for coping with adversity, and averting vulnerability. Borrowing is an integral part of rural people's livelihood and credit is also given without collateral because of mutual trust and networking. Different factors including power dynamics play a hidden role in these support mechanisms. The importance of the different forms of social capital in assistance-seeking behavior was summarized in Table 2.21 (Chapter 2). Here, we will present a more comprehensive discussion.

Kin

Kinship occupies a key position in support provision. The husband's family is more important than the wife's family in this respect, but the role of the latter cannot be ignored. Survey data and observation reveal that father, mother, brothers, and brothers' wives are the most important sources of support. In the past it was an obligation for parents and brothers to support their sons and brothers in sustaining their livelihood. Though this obligation is not as strong as it used to be, it is still acknowledged. The supporting role of sisters and their husbands as well as grandparents comes second, that of uncles of the husband, cousins and other in-laws third. Paternal and maternal uncles also play a crucial role in marrying off their nephews. Because of the importance of kinship relations, most people try to build their house next to that of kin or at least within the same hamlet or village. However, this practice is in decline because of lack of space and physical constraints.

Support from the wife's family is especially important during the initial years of marriage and it recedes with time. The economic status of the wife's family and the physical distance between the wife's parental place of residence and that of the husband's play a crucial role in determining the amount of support. It is obligatory for a woman's family of origin to help their daughter settle in upon marriage. Support of divorced or deserted women and widows by parents, brothers, and uncles is a cultural obligation. It is also quite common for orphaned children to be raised by their maternal grandparents. In such cases, women will demand their share of the parental property that had been appropriated by their brothers. Brothers may enjoy their sisters' share to help sustain their own families but are expected to provide whole-hearted support to their sister if she is in need. This gives women a sense of security. Women in the past rarely opted to claim their share from their brothers, but nowadays they are increasingly demanding their share, which may cause a deterioration of the relationship with their brother(s). The different case studies and life histories testify to the importance of the claim women have on their parents' property, whether these claims are cashed in or not.

Kinship relations are important for borrowing food and money and, most importantly, for seeking advice and coping with adversity. However, disputes among kin over property inheritance are also common, leading to deteriorating relationships between brothers and sisters and brothers and uncles. Such conflicts may extend to the next generation. This is a case of social capital turning sour. In the past, marriages between relatives were common, but this is now less so.

Neighbors

Most of the households within a hamlet or village were once related through kinship, but because of lack of space people now build houses in new hamlets and have to live with people who are not kin. The survey data, case studies, life histories and our personal observations reveal that neighbors play a crucial role in the support system. There is some divergence in the importance attached to kin versus neighbors with respect to support. Kin are more important to some while neighbors are more important to others. This varies from

person to person and depends on the relationship with the neighbors and with the kin group. In situations where the relationship with the kin group is disturbed, neighbors really matter. People try to maintain good relations because of religious as well as social obligations. Still, disputes arise with neighbors, especially about borders and the destruction of property by livestock. This can cause complicated situations. Sometimes a person is barred from walking past the neighbor's house. Most of the houses in the study area are not connected by a public road and people have to trespass to reach their houses. People mostly borrow food and usable goods from their neighbors, and borrowing small amounts of money is also common. When poor households have exhausted the support from their kin because of regular borrowing from them, neighbors may fill the gap.

Friends

The survey, case studies and life histories reveal that the support of friends is especially important in a situation of adversity when friends provide both moral and monetary support. They are also important for getting a job or work. When people leave the area for seasonal migration they mostly do so with friends.

Patron-client relations

The patron-client relationship is very common and is a vital support system. Patrons support their poor clients in return for their services and loyalty and out of social or religious obligations. This support system is evident from the survey, case studies and life histories. The relations of the poor with rich people, like land owners, *matbars* and UP chairmen, fall in this category. Support is provided in the form of food loans by land owners; food gifts and donations of money by rich people; donations or loans, and the provision of moral and legal support, help with getting a job and VGD cards by the *matbars*; and legal support and VGD cards by the UP chairman. Provision of support partly depends on the interest of the patron. When the patron feels that the client is no longer worthy, they withdraw their support. This brings more misery in the life of the client.

Mutual trust

Mutual trust is a horizontal form of support that occurs between neighbors, friends, and among fellow villagers. At present, sharecropping and shared livestock rearing also is done on a basis of mutual trust while formerly it took place in a patron-client relationship. The decline of the latter is caused by the belief of the poor that the patron exploited them. The formation of village-based groups totally depends on mutual trust. People only admit people to their groups who can be trusted. In the case of a female landowner, trust is a requirement to hand land over to sharecroppers.

Networking

The social network of a person depends on his or her opportunities to come in contact with other people as well as on personal qualities. Access to information is very important for people to sustain and enhance their livelihoods, but in the context of social capital "it is not what you know but who you know" (Woolcock and Narayan, 2000: 225). Networking is important for obtaining a VDG card and helps the poor to get credit support from a NGO, despite possible objections raised by other members of the organization. Networking is also crucial for getting technical support from various government officials. Additionally, participation in seasonal migration and access to working in the sand-digging business are made possible because of network support. This why people in the study area migrate to Dhaka for harvesting while people from the northern part come to the study area for work, but at a lower wage rate; they lack the network that gives them access to work in Dhaka.

Norms and values

In the past, the widely found labor-sharing system was based on cultural norms of reciprocity that supported the optimal utilization of people's labor and time, and made production cost-effective. Now, these norms have eroded, which causes farmer a lot of trouble and leads to higher production costs. Rich Muslims may donate money or women's garments to poor people because of religious obligations. Muslims used to celebrate the two Eid festivals together under the guidance of their *matbars*. This custom helped Muslims enjoy the same food across the community, but at present it no longer exists. Crossing the river by ferry used to be negotiated by the *matbar* on behalf of the whole community on a yearly basis so that people did not have to pay on daily basis. This is also a thing of the past.

Class and caste

Religion-based social support among Muslims is well defined and organized. Once the class system among Muslims was very pronounced, but at present Muslim society is more homogenous. Class still exists but it is less important. Among Hindus, mutual support is constrained by the caste system. Lower-caste Hindus mostly rely on Muslims for support, although high-caste Hindus sometimes distribute food among the lower castes, but rarely money. Lower-caste Hindus rarely take food from Muslims but will borrow food or money. Young Muslims take food from Hindus and also join their celebrations but Hindus rarely join Muslim celebrations. Taking food loans and borrowing money from each other is normal phenomenon between Muslims and Hindus.

Social solidarity

There are a few youth clubs in the area. These claim to support the poor, but we did not find much factual evidence of such activities. People blame them for being a nuisance because they are used to collect money which is spent on feasting, drinking wine, and gambling. Still, we came to know of one case where the young people collected money for an operation for a sick person. There is social solidarity among villagers and sick people are supported by collecting money and food for the family. But if villagers do not like a person they can also close ranks thus excluding him or her from help. In the 1980s, there were many cooperatives sponsored and supported by the government, but these failed due to a lack of proper management or commitment from government officials. The group-based irrigation system, initiated by BADC and afterwards taken over by BRAC, failed because of a lack of solidarity among the groups involved.

Local village organizations

NGOs started their micro-finance program with men and later included women. Subsequently, the NGOs shifted their focus from men and started to solely target women. When men were excluded from the NGO programs they tried to resist the NGO programs for women but failed. In the mid-nineties, men started to form their own village-based organizations in a few villages. This became popular and, later on, when many women had bad experiences with the NGOs, they followed the men in forming their own organizations. At present many women are forming their own village-based organizations independently of NGO-affiliations. Ten to twenty individuals save money on weekly basis to raise a fund. Generally, such organizations are set up for five years, after which time the money saved by the members is returned according to their share.

Funds from such organizations are used to provide loans to group members and non-members in the village. They rarely provide loans to the non-villagers. The borrowing system is similar to that of the NGOs. The borrower must have a good relationship with all group members as all members must agree to provide a loan to the borrower. Like NGOs, the

organizations also provide loans at a rate of 25 taka per week installment for a 1,000 taka loan, with the borrower paying 46 installments. The difference with the NGOs is that the payment system is more tolerant in case of default, allowing delayed payment of installments during the pre-harvest months (March-April and October-November) or in the event of a crisis in the borrower's family. The borrower has to pay the overdue as soon as possible.

The number of local village organizations is increasing. There is now at least one in each village. Men are also forming such organizations and they form organizations extending beyond the village, like among their working contacts. One person may be engaged in more than one organization. The amount of weekly savings varies from group to group. The rate may be as low as five taka and as high as 20 taka a week. There are incidents of dispute among group members; in such cases the group is either dissolved or expels those who are creating problems.

NGO credit

A micro-finance program was initiated in Bangladesh in 1976 on an experimental basis and was later formally launched in 1983. Initially, NGOs started working with men and later included women in their programs. As NGOs found women more committed than men, they shifted their focus and started to solely target women, which is the situation at present.

The NGOs provide collateral-free loans through village-based organizations, using group cohesion as collateral for borrowing. When NGOs start their micro-finance program they form a village organization of 20 to 50 women members. The criteria for selecting women differ from one NGO to another. Weekly savings are obligatory. The NGOs disburse the first loan to members after certain duration of membership. This period and the size of the first loan vary from one NGO to another. Every village organization has a group leader, who plays a key role in the disbursement process. To get a loan, every member needs the support from the leader and two other members. They are held responsible for nominating the borrower for a loan in case the latter defaults. Many members cannot borrow when their economic status declines as the group leader and members do not forward them for credit, even if they had taken several loans before and have a good record of paying them back.

9.2 Gender

Depending fully on men for economic development and thereby excluding half of the population from the workforce is a waste. Though bringing women in the production system will carry the risk of overburdening them, it will also help them to escape from backwardness and join in the mainstream of socio-economic development. In the following section we will discuss our findings on the position of women in the study area, and relate these findings to social capital, livelihood and food security.

9.2.1 Marriage, dowry, and divorce

In this section we will look at women's position in marriage, the practice of dowry, divorce and the tradition of purdah.

Marriage

When a girl reaches adolescence her parents are obliged to marry her off as soon as possible. Child marriages were quite common in the past and still exist today. Because girls at that immature age do not understand the meaning of marriage, the practice leads to marital instability. The poor have to compromise when marrying off their daughter and sometimes have to accept an elderly husband, with all the negative implications for the

daughter's life this may entail. Such marriages saddle women with a heavy burden in their life. First, she has to take care of her children, then she has to take care of an elderly husband, and ultimately she has to carry the burden of the children on her own after her husband's death. The last condition forces women to get involved in the labor force if they do not have grown-up children who can earn income.

When a family looks for a bride they normally emphasize beauty rather than the bride's family status. Lack of beauty for women is compensated for with a dowry and a beautiful woman needs less money to get married. The bride's family status and her fairness determine the amount of dowry to be paid. In addition, when a woman is working and has a regular job, less dowry will have to be paid or even no dowry at all. On the other hand, the status of a man in the marriage depends on his family background, his parent's economic status, and on his own education and economic status. In the past, land ownership was the main indicator of a groom's economic status, but now overseas migration, employment and skills are important indicators as well. When a man is working overseas the amount of dowry is increased.

Everyone talks against dowry, but in practice most families accept and offer it. It is difficult to prevent dowry by legislation. Most women are opposed to the dowry system, and their frustrations were expressed in the focus group discussions. One woman observed that while dowry is paid for the happiness of your daughter, happiness cannot be bought with money. Yet there is no marriage without dowry, she argued, because if one person does not give it, then another will give more and the daughter will be married. Another woman expressed an opposite view: "According to me, it is better to give dowry like Hindus do. Most of the time brothers do not want to give a share of the family property to their sisters, so it is better to give everything all at once". This might well be the general feeling among Muslim women because of their own experiences that brothers are rarely willing to transfer their sisters' share of the family property.

The dowry-seeking behavior of a groom's family does not follow any fixed rule; it depends, as said, on the beauty of the bride, her family's status, and even her own educational and working status. A girl's education influences dowry payment. When a girl is educated up to certain level, her parents will tend to look for a candidate with at least a similar level of education, which increases the dowry. On the other hand, when a girl is well-educated (graduated) and has a regular job, the dowry sometimes need not be paid, even if the girl is not physically attractive. In that case, education and employment substitute dowry. One woman explained her position in the following way:

We neither pay dowry, nor demand it. We would rather use that money to pay for our daughter's education. My sister said she would take my daughter for free, I will give my daughter to her son, and he who demands dowry will not get my daughter. Later, my daughter will work and be able to provide for herself.

There are other ways to avoid payment of dowry. If the daughter chooses her own husband, then no dowry has to be paid. In such cases the groom's family rarely demands any dowry.

There is yet another side to dowry. When the bride's family pays a handsome dowry to the groom's family, the status of the bride goes up in the in-laws' family. She will have a stronger position in the family decision-making processes. The IFFRI data shows that ownership of assets at marriage of the bride is an important determinant of her position vis-à-vis the in-laws and in the husband's house.

The case studies and life histories reveal that divorce or desertion is usually preceded by domestic violence, whether mental or physical. Mental abuse often is part of the life of Bangladeshi women when living with their in-laws. Physical violence was very common in the past and is still a social problem. Women mostly try to ignore it since they think that it is a fact of life and derives from the authority of men over women. Dowry-related violence is increasing and results in the death of many women. Many such cases are treated as homicides. They are usually resolved at the community level by putting pressure on the women's family. Only influential families get access to law support. Law enforcement authorities often take bribes from the husband's family and report in their favor, leaving the wife's family without support from the law.

Divorce

Divorce is increasing and at present one in five women gets divorced in their lifetime. Many women are divorced more than once, though among Hindus divorce is very rare. The main causes for divorce are conflicts about dowry or the husband's family dislike for his wife. Women are helpless and rarely able to prevent divorce. In recent years women try to get support from the law, but this does not ensure a normal family life for her. Young divorced women or widows are married off again, but adult divorced or deserted women or widows have less chance to remarry. They have no choice but to survive on their own or become burden to their brothers or parents. Widows and divorced or deserted women with young children have little opportunity for work. When working as a day laborer, which is one of the few options they have, they earn half the wages of men. We observed that women become vulnerable as a result of divorce or desertion. The government and NGOs acknowledge the problem, but there is little they can do for these women. The government tries to support them through the VGD program. NGOs are also supporting these women through their own programs or in collaboration with the government by, for example, the income generating program for vulnerable groups development (IGVGD program of BRAC). NGOs are also helping the women by providing legal support to avert divorce and, if divorce cannot be averted, by assisting these women to get their legal share from the ex-husband.

Purdah

Purdah was strictly followed in the past, but at present this practice is relaxed. There is no obligation from either society or from religious leaders. The traditional veil is almost absent and a long scarf has replaced it. The use of a scarf is regarded as dignifying and a way of purdah as well. Due to opportunities to work in the industries around the Satoria upazila and in Dhaka, young girls come out of their houses to join in the work force, leaving purdah behind them. A woman in the focus group discussions said:

President Zia brought women out of their homes during the canal excavation program. Then women used to work in the Union parishad road constructions. Later on BRAC and other NGOs came and formed village organizations with us. At first there was a serious repercussion from the men, but now they have accepted the reality. Now we don't have any problem participating in meetings.

One (male) key informant complained:

Before NGOs came to work in our area women were shy to face any strange man, but now the women have become free. A man cannot enter a house and talk to the women. But the women who are NGO members are so enthusiastic about the NGO officers that if they hear the sound of the motor cycle they run away from the home to attend to them, even when they are serving food to their husbands. So husbands were irritated at the NGO officers during the early days, but now they are used to it and do not mind so much any more.

9.2.2 Gender and social capital

Cultural practices give privileges to brothers to enjoy their sisters' share (land) of the parental property and, depending on the actual relationship between brother and sister, entitle women to protection from their brother(s). This entitlement is also a form of social capital. Food borrowing is mostly the affair of women, while taking a food loan is the affair of men. Women used to borrow from the husband's kin or neighbors. In addition, often when a husband cannot manage the debt he has incurred, his wife may seek support from her parents, brothers or sisters. She will have problems when the husband delays repayment or even treats the borrowed money as his own. Besides, many husbands press their wife to bring money for their own purposes or ask for more dowries. Sometimes the wife's family is required to provide the husband with a job. When failing to do so, a family problem arises that may end in divorce.

The targeting approach of the NGOs towards women has given them a sort of pseudo-empowerment; their husband or sons have to rely on them for the loan, but it is women who have to bear the burden of repaying the loans and suffer the consequences of default. NGOs have recently introduced the system of requiring the husband or son to co-sign the loan paper as witness and guarantor (cf. Rozario, 2002), but this is of little help to women. It is the women who took the loan and have to repay it and attend the meetings. The NGO workers hold them responsible and put pressure on them for repayment.

A young daughter's decision to disobey her father would have been unheard in the past. Women's participation in the economic sphere has poised them to bear a double burden. In addition, NGO credit access has raised the position of women in the household and empowered them. This change is evident from their liberty to come out of their houses and participate in activities which they like. This is definitely a positive aspect of women household development.

9.2.3 Gender and livelihood security

Asset ownership, access to land, labor and income opportunities are crucial for a secure livelihood. Social capital and gender are key factors in attaining and enhancing livelihood security and averting vulnerability, as well as reducing risks during times of social and economic change. In a society that is based on patrilineal kinship and patriarchal structures like Bangladesh, women have little or no access to land and other assets. At the time of marriage, women bring assets with them in the form of gifts or dowry for the husband's family, but once married they rarely have access to these. The only asset a woman can claim as her own is jewelry. Thus, women have a tendency to accumulate jewelry during their marriage. Husbands, however, may also sell the jewelry, either by convincing their wife of the necessity to do so or by force.

Women and land

Land is an important asset in rural livelihoods. It is also an asset that women usually do not get through inheritance. Instead of getting their share, they may be compensated with money or nothing at all. The money women get is used to buy assets or land, but they have to do so in the name of their husband or son. If a woman inherits any land from her parents she only has ownership but no authority. In the past, brothers rarely handed land over to their sisters, but at present, because of the increased value of land, women may force their maternal uncles to give them their share. In addition, when brothers are enjoying their sisters' land they often offer a token share of the production, which in turn helps women sustain their livelihood. However, women often fear that insisting on their share will cause their brothers to curse them and will ruin the relationship with them. If women have land, most of them cannot

cultivate it themselves, so they usually hand it over to sharecroppers. But because sharecroppers tend to exploit these women because of their weak position, women may hire labor to cultivate the land. We also found that many women rented-out their land instead of cultivating it in a sharecropping arrangement. The money they gain can be lent to farmers with interest paid in kind with paddy. However, farmers tend to exploit women as well. Some women are lucky to get the land of their deceased husband, but this rarely happens. In one case we came across a husband putting the land in his wife's name to protect her rights to the land from the claims of her in-laws. The problematic relationship of women to land is shown in many of the cases and life histories presented in the previous chapters.

Division of labor

In the past women were barred from working in the rice fields but they joined their husbands to harvest potatoes. Labor has now become so expensive that many women have to go to the fields to plant seedlings and for weeding and harvesting as well. Women are now somewhat more involved in rice-cultivation (sowing and weeding), but their involvement in vegetable cultivation is particularly noticeable. Vegetable cultivation is very labor intensive. Women have to plant, regularly weed and irrigate, are in charge of pest control, and harvest the vegetables. Young girls are sometimes also involved in selling the vegetables at the weekly local market. Poultry rearing is also women's work. Only men are involved in selling the chicks while women sell eggs to the egg vendors. Similarly, caring for cattle is women's work, while men are only responsible for cutting grass and showering the animals. Women in poor families regularly join their husband in cutting grass, however. The introduction of new crops like tobacco and maize has added to the work load of women. Post-harvest processing of paddy is also women's work among poor families. In well-off families, hired labor is used but women have to take care of the laborers by cooking their meals. In some middle class households, men also participate in post-harvest food processing along with women, assisting them with tasks requiring strength.

Vulnerability

Labor is also a crucial factor in livelihood generation. The absence of healthy adult men in the household makes livelihoods more vulnerable, as is illustrated by the cases of women with an old or sick husband. In such cases women have to be involved in the farming or have to enter the labor market. The sudden death of a husband may force a woman to look for paid work, even if she has small children. This constitutes a double burden to women involving both reproductive and economic responsibilities. The vulnerable position of widows and divorced or deserted women with children was referred to above. While social stigma constrained women's participation in the labor markets in the past, women at present no longer face this problem. Instead, they now face the problem of employers' preferences for young girls over adult women, which make it difficult for adult women to find jobs in the factories. This problem forces them to accept work as day laborer, which is much heavier work and which pays lower wages than for men doing the same work. Such disparities add to women's vulnerability.

New work opportunities for girls and young women give them a better position in the labor market. At present, girls are no longer a burden to their families but, instead, are becoming assets. They contribute to the household income and are able to share the cost of their marriage. This enables parents to find better husbands for their daughters as well as decreases worry about the urgency of their daughter's marriage. This is causing the marriage age for girls to increase, which will eventually lead to fertility decline. Work opportunities for girls have also increased their bargaining power within the family.

9.2.4 Gender and decision-making

Household heads, usually men, make most of the decisions regarding agriculture, and they also decide on many matters for each individual member of the household. Their decisions are difficult to disobey or ignore. Sometimes elderly people, like the father of the household head, and sometimes women contribute their views, but the male household head makes the final decision. In the kitchen, the women are usually the decision makers. Men rarely interfere in matters relating to cooking. Men in the focus group discussions said that they did not want to interfere in this domain where woman should have the liberty to make decisions. However, men sometimes interfere, albeit indirectly, especially when wives ask for something to buy from the bazaar. The husband decides what to buy in such situations, but normally they will try to follow their wives' wishes if it is not too expensive.

9.2.5 Gender and food security and nutrition

Food security

Though women are not seen as a productive force in food production, they do a lot of work in post-harvest activities and seed preservation. Growing vegetables around the house is totally women's work and women continue to participate in the potato harvest. The participation of women and young girls is also widely seen in commercial vegetable production. Gleaning of cereals and potatoes, which was very common in the past, is traditionally mostly done by women, girls and boys. The same applies to gathering wild vegetables. Food processing and preparation is exclusively women's work. Women are also actively involved in livestock and poultry rearing. In cases of short-term food shortages, women have to manage by borrowing. Long-term food shortages are taken care of by men through food loans and credit. At present, women are also engaged in borrowing from neighbors, local village-based organizations and NGOs, as they have more access to these sources than men. Women also borrow and receive money from their parents, brothers or sisters or other relatives at a time of crisis. All of these activities indicate the important role women have in securing adequate food provision for their households, which in the literature is referred to as the gendered nature of food security (Niehof 2003).

Nutrition

Women and girls suffer most during the pre-harvest period when households go through food rationing. Evidence from the IFPRI data shows that while there are no significant differences in nutrient adequacy between boys and girls of pre-school age, school girls and women seem to sacrifice themselves for boys and men. This causes malnutrition among women later in life, which results in long-term effects because of the low birth weight of their offspring. Girls and women in general, especially pregnant and lactating women, suffer from nutrient deficiencies due to social customs and food beliefs and taboos (see also Bosch, 2005).

9.2.6 Education, family planning, and health

Education

As the Secretary General of the United Nations said: "There is no tool for development more effective than education of girls" (Annan, 2003). Education will help women to empower themselves and fight against violence and inequality. Education is a prime indicator of a nation's development, and without educating the population a nation cannot develop itself. More than half of the household heads and nearly half of the household members are illiterate. Though all female household heads are illiterate, almost all girls are now enrolled in school and continuing their education. This is due to NGO efforts and the government's food-

for-education program. Parents are increasingly aware of the importance of educating their daughters. Educated girls now often work prior to their marriage and support their parents, which leads to a higher age at marriage. Marrying at a higher age gives girls the opportunity to be better informed about health, sanitation, nutrition, and family planning.

Family planning

The use of contraceptives is women's business. Men are not much interested in using male contraceptives. In the past, most of the women were barred by their in-laws from using contraception and women had to be secretive about it. Sometimes even the husband did not know his wife was using contraception. Women got their contraceptives from the government and NGO health workers. A participant in the focus group discussions described her position when she started to use contraception:

My mother-in-law came to know that I had started using the pill after the birth of my first child. She told me to not use contraceptives before I had another child. I did not listen to her and told her it's my body so I must decide what to do. Upon hearing such harsh words my mother-in-law was surprised and shocked. Nowadays things have changed. Now mothers-in-law suggest to their daughters-in-law that they use contraceptives. Even young wives do not consult their husbands but decide on their own.

In the survey we found that all of the female users had consulted their husbands, but not their mothers-in-law. Women in the focus group discussions said that most husbands still prefer to have a baby first before using contraception, but their wives may think otherwise. Child bearing is a must for a woman. If a woman fails to have a child her husband will remarry. One woman gave an example of her own daughter: "My daughter was married three years ago; she still does not have children. She is young, but she is afraid that if she does not have a baby, her husband will marry again". Women in the focus group discussions said that in the past family planning workers were not allowed to enter the house, whereas now everyone is looking for them. At present, mothers-in-law no longer attempt to persuade their daughters-in-law to refrain from using contraception. Now many husbands buy contraceptives from medicine shops as they believe that contraceptives sold at the shop are of better quality than those supplied by government family planning workers.

Health

In the past women rarely received medical treatment by a physician and had to rely on traditional healers when they were ill. Even now, women are usually treated by folk healers and quacks. Only when women are very seriously ill they will be taken to an allopathic doctor. It is the women who suffer most but are not admitted to the hospital, and they will keep the illness to themselves for their entire life unless they are seriously affected. One woman in the focus groups commented: "Men are taking more care of their livestock than of their wives. If a wife dies he can marry again and will gain by taking dowry, but if the cattle dies it is his total loss". It was evident from the IFPRI data that girls are less food secure and that the nutritional status of girls is worse than that of boys. Though girls are now more empowered and more health and hygiene-conscious as a result of education, and working in the factories, their nutritional situation is still a concern; women and girls still suffer from intra-household food distribution disparities.

CHAPTER 10

CONCLUSIONS AND DISCUSSION

This final chapter presents the conclusions and a discussion of the main findings of the study. The first part of this chapter deals with the research questions formulated in Chapter 3 and concludes the study by summarizing the main research findings. The second part of the chapter discusses the results of the research with regard to the main themes of the study in relation to the current literature. The final part of this chapter addresses the policy implications as emerging from the research.

10.1 Answering the research questions

The first and second research questions address the issue of the composition of livelihood portfolios and their importance in achieving, maintaining or enhancing livelihood and food security in rural households. The research questions are:

How do rural households achieve, maintain or enhance their livelihood and food security?

How do they compose their livelihood portfolios in order to survive?

This research reveals that households take all possible opportunities to achieve livelihood and food security. Households invest in their assets, resources and support systems to achieve and maintain their livelihoods. Once the households achieve livelihood and food security they then try to maintain or enhance it. To achieve this, households stick to the existing livelihood portfolios or change and diversify it.

Households compose their livelihood portfolios to achieve and maintain their livelihoods. Livelihood portfolios depend on the asset and resource base of the household as well as on characteristics of the household concerned (e.g. size, composition, and headship). Household heads are usually the breadwinner of the household. In many households, the eldest male person of the household is considered to be the household head because of his dominance in household decision-making and resource allocation, even though such an elderly person may not be involved in any livelihood activities. These elderly household heads control the assets and resources and distribute the duties among the household members. Additionally, other household members may also be engaged in various livelihood activities, thus contributing to the household livelihood portfolio. This is of great importance to livelihood status of the household. Therefore, the livelihood status of households is not solely determined by the livelihood activities of the household head.

The research area was once marked as a severely food-deficit area and most of households were engaged in either farming or farm labor. The introduction of irrigation facilities and high-yielding varieties of rice brought a sharp increase in cereal food production leading to better food availability at the local market, an important pre-requisite of food security. Food production in the area still lags relative to demand. Crop diversification also occurs in the study area. Commercial vegetable cultivation has proven to be more profitable than rice cultivation. New livelihood activities like rickshaw and van pulling had a positive impact on livelihood and food security for many poor households. Other new off-farm and on-farm portfolios also helped many households avert the vulnerable situation during the pre-harvest period (off-season), when there are no work opportunities. As a result of government and

NGO initiatives to reduce poverty new livelihood opportunities like livestock rearing, small scale trading and cottage industries have been introduced. These new opportunities have made it possible for households to diversify their livelihoods during the last decade. More than two thirds of the households have more than one source of income in their livelihood portfolio. This enables the household to avert vulnerability and sustain livelihood in a better way. Availability of food together with the opportunities of off-farm labor have eased the dependency on agriculture and led to further diversification of livelihood portfolios, making it possible for households to achieve and maintain or enhance livelihood and food security.

It is evident from the research that people's perception about food security still motivates them to take on farm-based livelihood activities. Consequently, people of the area still migrate seasonally to work as contract labor (*dawa*) during harvest. They bring food home instead of cash and store it. In addition, once households are livelihood and food secure they try to accumulate land and switch from non-farm activities to farm-based livelihood activities. People still see land as the best option for raising their wealth. This trend was very common in the past and continues to prevail. Households in the research area take credit from NGOs or local village based-organizations to buy land or take land on mortgage to enhance their independence in cultivation and livestock rearing. This is common among both male and female-headed households.

Livelihood generation and maintenance are on-going processes and time is a crucial factor in determining the livelihood portfolio of a household in relation to the assets and resources it possesses or has at its disposal. Livelihood portfolios in the research area have changed in the course of time. There was a fundamental change in the socio-political arena after Independence, which also affected livelihood portfolios. After Independence, many people migrated to the cities and the members of these households were educated, which influenced the ones who were left behind. People still migrate seasonally to adjacent districts for harvesting. At the same time, labor shortages in the area are filled by the laborers from the northern part of the country. Young girls have been migrating to the cities in recent years to work in factories and export industries, while young men are encouraged to engage in overseas migration. The migration of young girls and men in recent times brings further livelihood diversification. Remittance flows are changing the livelihood status of the migrant households dramatically. This is enticing many young people to migrate out of the country. Many households sell their land and assets for this purpose, but often lose their money to fraudulent agents, thus landing themselves in a more vulnerable situation than before.

Livelihood activities in the study area are still defined by gender, although less so than in the past. New livelihood activities have emerged and been accepted by the households over time, leading to different livelihood portfolios that are in accordance with culturally defined gender roles and age. Men are mostly involved in the productive sphere, while women are involved in both productive and reproductive activities, though their productive role is not well recognized. Women in female-headed households are the breadwinner and are bound to take on male-oriented livelihood activities. In recent years, young girls engage in factory work and even migrate to cities to seek jobs.

Research question eight addresses the role of social capital in sustaining livelihood and food security by the rural households:

What is the role of social capital in sustaining livelihood and food security?

In a country like Bangladesh where poverty is widely found, social capital plays a crucial role in maintaining and enhancing people's livelihood, cope with adversity and avert vulnerability. People survive through different support systems. Borrowing is an integral part of rural people's livelihood. Rural credit is used for short-term consumption and for working capital. Credit is taken either from banks or moneylenders with collateral or through mutual trust and networking without collateral either from relatives, neighbors, friends or NGOs. In this research, credit taken without collateral was used as a proxy for social capital. Social capital influences the total expenditure of the household to a great extent during both pre- and post-flood periods. A considerable portion of the credit taken without collateral is provided by the NGOs. NGOs are using group cohesion as collateral to provide credit. Credit is given to a NGO member with the consent of the group. The group always makes sure that whoever is taking credit (the borrower) has enough assets or income to repay the loan. It was evident from the research that poor people who do not own land or assets have difficulties in accessing credit either from neighbors or NGOs. In these cases, landholding functions as collateral, albeit informally or implicitly, in addition to group cohesion.

The kin support system is well recognized, but for many people the importance of neighbors is no less than that of kin. Support from friends is needed to get a loan or access to jobs in factories. Support from patrons in patron-client relationships is crucial, but sometimes is of questionable value as it tends to be dominated by the interest of the patron. As is shown in this research, networking and good relations with relatives and neighbors, and having friends are crucial in achieving support at the time of need and in daily life. Knowledge and access to information is crucial in achieving, maintaining or enhancing livelihood and food security. Access to information through networking is a form of social capital which is acquired through women participating in NGO activities, though it less used because of gender discrimination. Men attach less importance to information passed on through women from NGOs because of cultural biases.

The formation of independent village organizations gives rise to new support systems and forms of social cohesion, amounting to new forms of social capital. The establishment of independent organizations is becoming popular among both men and women, and their participation in forming their own organizations is a sign of unity among the members. It also helps to avoid or decrease dependency on NGOs, whose loan conditions are often rigid and bring borrowers into a precarious position. With their own independent organizations there is less chance for the members to loose their money, which is a frequent complaint against the NGOs when defaulters forfeit their savings. It was observed that villagers no longer celebrate their Eid festivals collectively under the guidance of *matbars*. The system of shared labor has eroded as well. In addition, the practice of borrowing food at a time of need and providing food gifts is less common compared to the past.

The fourth research question addresses the role of gender:

How does gender affect livelihood strategies and household level decision-making?

The male-dominated culture in the research area determines the gender division of labor. It defines men as being responsible in the productive and women in the reproductive sphere. Women occupy an inferior position in the household because of male dominance. In the past, women were strictly barred from working in the field, which still applies to well-off households. Only women from poor households were forced to work in the fields, and their work was confined to sowing seedlings and weeding, which is still common. Women were

mostly involved in post-harvest processing. In the past, women from male-headed households rarely worked outside the home, but women from poor households have started working in the fields after the recent introduction of commercial vegetable cultivation. Some livelihood opportunities like vegetable cultivation add to the workload of women. As poor households cannot afford to hire labor, family members including the wife and daughters have to work in the field, also in rice cultivation where it was not common. Similarly, livestock (cow) rearing is also increasing women's work load as women have to do most of the work. Young girls nowadays work in factories and industries, but adult women lack this opportunity.

Women in male-headed households in the research area rarely possessed any land and resources. In the past women rarely inherited land from their parents. Instead, they were compensated with a token amount of money by their brothers or even not compensated at all. Women have started inheriting land from their parents in recent years. If they do not get the land they are increasingly getting money from their brothers in return for their relinquished share. However, this money ultimately is claimed by their husband or sons. Dowries belong to the husband or his family while only ornaments belong to women. In the past, women could not even think of possessing money, but presently they can hold money of their own. Income from selling eggs and vegetables from home gardening belongs to women, but money coming from the sale of poultry and other livestock (cattle, goats) goes to men. The few women who possess any money rarely disclose it to their husbands. Borrowing money among villagers is common. However, due to gender discrimination, it is difficult for women to lend money to others. Problems arise when a woman lends money to men. Women need support from men to lend money to non-relatives. When women lend money to in-laws there is a chance of losing it. Males and in-laws may either delay repaying or sometimes not repay at all. If they do lend them money, women usually use somebody else's name and hide their identity from them.

Decision-making processes at the household level are influenced by power rather than by morality. Normally the man, who is sometimes an elderly household member such as the father of the household head, makes the livelihood strategy decisions, including those related to agriculture and other economic activities. All members of the household are bound to follow his orders. It is difficult for household members to ignore the decision of the household head. Sometimes women give their views, but the man's decision is final. In the past, women only made decisions in matters on food and cooking. Nowadays women from poor households can come out of their houses and participate in the organizations and activities they like. However, women's participation in the production (economic) sphere gives them a double burden. Access to NGO credit has empowered women but did not give them any decision-making power. The dowry paid for a woman at the time of her marriage influences her position in her husband's house and in the decision-making process. NGO social awareness programs give women a sense of both practical and strategic gender needs. However, from the focus group discussions it appeared that women are aware of their practical gender needs but not of their strategic gender needs. The opportunity for education and parent's awareness about educating girls has made it possible to increase the enrollment and continuation of girls in school. Women in the past had no say even in her reproductive rights and decision making, but this has recently improved and women presently have some voice in this area. Still, women's reproductive rights are not yet fully established and women are barred from modern medical treatment.

Households that experienced problems in making a living in the past may now follow a different course of action or shift to other opportunities and gather courage to take different strategies. Taking a new livelihood diversification strategy depends on the information

available and motivation to avail the new opportunities. Access to information systems through networking is very important when deciding upon a new strategy. In the past, women lacked this opportunity due to mobility constraints, but at present women are more mobile and their enrollment with the NGOs gives them access to information systems. Particularly women in female-headed households have more room to choose their own strategy based on new information, but due to socio-cultural constraints they usually fail to do so.

In most cases divorce is not solely a decision made by the husband but one imposed by his family and forced upon the husband to implement. Violence against women, whether mental or physical, is a prime indicator of impending divorce or desertion. When a woman has to live with her in-laws, mental abuse is part of her life. Physical violence is also not rare. It was very common in the past and continues to be a social problem. Many women think that it is part of life and that it is the legitimate authority of a husband to control his wife. Upon divorce, desertion or widowhood, young women mostly return to their parental homes where they are well received by their parents and brothers and are remarried, while older widowed women may remain at their husband's house with their children. A problem arises when the brothers are married and the sisters-in-law see this as a burden for their families. The in-laws of widowed or divorced women can make their life miserable. To a large extent the in-laws' attitude determines the support a woman can expect.

When women are married they rarely during their married life get the bride price that was agreed upon, but it is paid to them at the time of divorce. Similarly, a bride's parents give a dowry to the husband's family, which also has to be returned upon divorce. Taken together, this money provides some sort of security for the divorced woman. Sometimes women do not even have these opportunities and are cheated by their husband. A woman's decision to remarry depends also on the gender of her children. Young widows or divorced women who do not have children or only daughters usually remarry. If a woman has a son she does not remarry in most cases. She prefers to remain single and raise her son with the hope that he will take care of her in the future. In recent years, employment opportunities for daughters of divorced, widowed or deserted mothers provide a new livelihood option to these women.

Divorce, desertion, widowhood, and having a sick husband force women to take charge of the household. A female-headed household lacks entitlements and support from the community. This, as well as social stigma and the barring of women from normal activities males have access to, leads to household vulnerability. Female-headed households tend to or are forced to shift from or change traditional strategies. Female-headed households either depend on their in-laws, parents or brothers to choose their livelihood strategy. These women's involvement in livelihood activities depends on their livelihood (socio-economic) status. Women from female-headed households are engaged in livelihood (economic) activities. When women from female-headed households are barred from the labor market by their guardians their young children have to replace them and join the labor market. Besides, adult women rarely get work in the factories or industries, so they mostly rely on hiring themselves out as manual laborers. When they do join the labor market they suffer because of gender discrimination in payment, earning a maximum of 60 percent of their male counterparts.

Cultural constraints prevent most of the female household heads to cultivate their land themselves, which makes them dependent on sharecropping. In recent years, households are building houses once they are better-off. Men at first buy land and later on build their houses. While women tend to build houses on the existing land rather than accumulating additional land since for them it is more difficult to buy land. In the past shared rearing of livestock (cow,

goat, even chick and duck) was common among women from female-headed and poor households. In recent years most of the households are rearing livestock with NGO credits. Only a few very poor households who lack NGO support still opt for shared rearing.

The VGD program supports women to sustain their livelihoods. The VGD program is implemented through NGOs (e.g. BRAC), and the NGOs train them to find new livelihood opportunities. BRAC's program for the ultra poor provides very poor households with a new opportunity to sustain their livelihood. In this case BRAC engages the wealthy people of the community to support the ultra poor. The Grameen Bank's program for beggars is an example of a way in which the livelihood of the very poor is sustained through such a program. In recent years other NGOs have also been coming up with programs targeting the ultra poor.

Research question six addresses the temporal dimension of livelihood strategies:

How do livelihood strategies change over time in the context of ecological, demographic, cultural and socio-political changes?

Livelihood strategies develop over a period of time and livelihood portfolios are composed within a temporal context. People usually have a vision of the future based on their experience and set their strategies accordingly, taking the socio-cultural context into account. Certain short- and long-term strategies are followed to achieve and maintain food and livelihood security.

It is evident from the study that there is no clear pattern of a fixed livelihood portfolio in the different stages of the life course. The composition of the livelihood portfolio seems to depend primarily on opportunity and access to resources. Only a small proportion of the farming households increase their landholding through their life course, while landholdings of self-employed households tend to decrease. Parents usually do not distribute their land immediately after the marriage of their children, but will wait a certain period of time after the marriage before the land is distributed.

Poor households diversify their livelihood through off-farm activities, but once they become better-off they tend to return to farming. Thus, households try to own or accumulate land to pursue farming for their own production and consumption. On the other hand, once the younger generation becomes educated they no longer want to farm but would rather take service jobs or migrate out of the country. This is causing a shortage of manpower in the labor market. There was a shared labor system in the past, but this system is now no longer in place so households are forced to be idle when there is no work in the fields. When households need additional labor they cannot ask for support from their fellow farmers. Households tend to stick to rice cultivation over profitable vegetable cultivation because of their perception of food security. This perception also helps to explain why they bring payment in kind (paddy) to store in the house from *dawa* (harvesting paddy on contract labor basis).

In the past, people were closely bound through social norms and values, but this is becoming less so in the changing socio-economic and political context. Community leaders were once very influential and most disputes were brought to them for resolution, but their influence has weakened as a consequence of socio-political changes. People used to follow their community leaders to vote in a group. Now, people exercise their own vote based on

individual choice. Members from the same household have different opinions and support different candidates, which was unheard of in the past.

As a consequence of cultural change, time allocation patterns have changed as well. People used to maximize their time through the shared labor system, but this has now almost ceased to exist. This also applies to leisure time. Men once gathered in the evening and smoked the *hukka* (water pipe) together and exchanged views, but new smoking practices led to the decline of this old tradition. There is seasonality to the use of social time. Men used to relax and gossip after harvest, while women kept themselves busy with post-harvest processing. Women used to gossip in a group and share views and information during leisure time, especially after lunch. Sometimes women's gathering and gossiping caused quarrels, which resulted in expulsion from the group.

Research questions three and seven address the issues of livelihood status and changes in livelihood security, and how these affect food security, food consumption and nutrient adequacy:

How does livelihood status affect food security, food consumption and nutrition adequacy?

How do changes in livelihood security impact food security and nutrition adequacy?

Household expenditure was taken as a proxy for livelihood in the study. It was observed from the data that household food security depends on the expenditure of the household (livelihood status). Similarly, food consumption patterns and nutrient adequacy also depends on the livelihood status. Gender of household headship was not a determining factor in household-level food security, but food security at the individual level is gender dependant. Women or girls are not food secure even if a household is food secure. Households having a better livelihood status consumed more non-staple foods and animal proteins than households with poor a livelihood status. The change in livelihood status showed that there was less intake of non-staple food during post-flood periods compared to pre-flood periods.

Women and men have almost the same perceptions about food security, but their perceptions vary with livelihood (economic) status. To the very poor it is just filling the stomach with food, whatever it may be. In the past, women were happy if they had a belly full of rice, even if only one time in a day; they could count the times when they had this. It is evident from the above that a belly full is the dominant perception of food security among both women and men, though in the course of time this perception has slightly changed. Men agreed with the women's argument for having a stock of food at home, but sometimes they prefer money over a stock of food.

Poor nutrient intake among adults and school children was observed during the post-flood period relative to the pre-flood period. The nutrient intake of women and girls was the worst. Women eat after all household members have taken their share. This practice seriously affects the adequacy of women's nutrient intake. This custom causes them to have a smaller share of rich foods or even none at all. In the past, even daughters had to take their food after the sons. This has now changed and sons and daughters are served together. Young children are served first. The mother-in-law was once in full control of the kitchen and wives were not allowed to eat before their mother-in-law. Wives were also not allowed to serve themselves; their mother-in-law would serve them. Wives could not decide what to eat and

when to eat. In the past, women were given food by their mothers-in-law only twice a day - once during late morning and the second time late at night. Women (wives) are now in control of the kitchen and they eat three times a day and the elderly mother-in-law suffers. Mothers-in-law sometimes do not get food three times a day.

Household food insecurity in female-headed households is well recognized, so safety net programs like Vulnerable Groups Development (VGD) are mainly targeted towards vulnerable female-headed households. The Vulnerable Group Feeding (VGF) program targets poor households, including female-headed households, during and after floods. These programs help female-headed households achieve and maintain food security. Food for Work (FFW) and Food for Education (FFE) programs also target poor households to avert vulnerability and achieve their livelihood or food security. Various health, education and micro-finance programs from different NGOs also target poor households, which mean targeting mostly women.

The fifth research question addresses the issue of adversity and rural household coping strategies:

How do the rural households cope with the risks and shocks like illness, famine, flood, drought or lean periods of the year?

Rural households struggle against poverty and try to find a balance between long term livelihood strategies and short term coping strategies. Lean periods and flooding are common to every household, so households have their own coping strategies, especially against these annual phenomena. Coping strategies vary from house to house, depending on the livelihood status and support system. Households try to smooth their consumption through saving, borrowing and altering feeding practices. Households try to store food or save money for these periods. The next strategy they follow is borrowing. If they fail to successfully secure credit, then they reduce their frequency and quantity of eating. Even well-off households reduce the quantity of food per meal. A young household head is more likely to shift to a different livelihood strategy in the event of floods or adversity, while older household heads try to stick to their old strategy unless things go wrong.

Households cope with adverse situations that are idiosyncratic in nature. Coping with adversity is a situation which a household cannot foresee in advance. It is difficult for households to take precautionary measures, and in such situations they take mitigation measures. Whatever strategies a household takes is on an *ad hoc* basis. An adverse situation may lead a household to a vulnerable state. A husband's death brings misery into a woman's life. It makes no difference whether the death is sudden or expected. As long as the husband is alive he serves as an umbrella and protects the women from economic as well as social problems. Once the husband is dead, women suddenly do not feel secure anymore and fall sick. In such situations they first rely on their father or brother. When these two cannot provide support the woman herself has to take enter the labor market to sustain her livelihood. If she is barred from doing so, her children may be forced to work. This creates a child labor problem in society. In case of a husband's illness, women might or might not get support from their husband's and own families, neighbors and friends and as well as the wider community. Community support eases the vulnerable situation while a lack of support brings their lives into disarray and a situation of vulnerability.

When a woman is divorced, deserted or widowed she becomes the household head unless she is seen as a burden to her parents or brothers. Such women have to live on their own

and become vulnerable as a result. The lack of a resource or asset base for coping with adversity makes them more vulnerable. At the time of vulnerability, women may or may not get support from the Vulnerable Groups Development (VGD) program or credit support from the NGOs. If they fail to get support from the VGD program and no credit support from NGOs because of their lack of land and asset base their situations are more vulnerable. These women then tend to borrow from kin, neighbors, friends, or moneylenders. Their lack of assets, resources and opportunity to get work and gender discrimination in the job market make it difficult to repay loans and they fall into a more vulnerable situation.

10.2 Discussion

As said, this section discusses the main issues of livelihood and food security, and the significance of social capital, gender, social change, and time in sustaining livelihood on the basis of the findings of the study and in relation to the literature.

10.2.1 Livelihood and food security

This research dealt with livelihood and food security issues of rural households in Bangladesh. Achieving livelihood and food security is a major goal of households. Livelihood diversification is one of the ways to achieve, maintain or enhance livelihood security (Ellis, 2000). As is also shown by this research, households stick to or change their livelihood strategies or diversify their livelihood activities based on their present needs and past experiences (Pennartz and Niehof, 1999). A household's attitude towards risk is considered to be the most dominant factor in livelihood diversification (Reardon and Taylor, 1996; Fafchamps, 2004). Niehof (2004) argues that diversification occurs because of good or bad experiences. This research reveals that two-thirds of the household heads have more than one source of income from both the agricultural and non-agricultural sectors. Saha (2001) reported that dependence on farm labor declined at a rate of 0.26 percent while non-farm sector income increased at a rate of 2.89 percent. Most households diversify their income sources to cope with on-farm and off-farm risks to their income (Kumar, 1991). Brons (2005), however, argues that income diversification alone is insufficient to sustain livelihood. It can be a coping mechanism rather than a means of sustaining livelihood. Quality of livelihood diversification is more important than just the degree of livelihood diversification (Toufique and Turton, 2002).

Opportunities for non-farm activities in villages, migration to cities and abroad, and NGO credit for women make it possible for rural households to diversify their livelihood. In this study we found that landholding and credit taken without collateral influence household expenditure, which in turn helps household livelihood and food security. NGO credit is one of the best opportunities for diversifying the livelihood of households, as is evident from the work of Kabeer (2001). Rural credit is used for short-term consumption and working capital needs (Udry, 1990). In Bangladesh, like in other poor countries, credit is often taken to smooth consumption, i.e. to fill the gap between income and expenditure, as is confirmed by the literature on micro-finance (Zeller et al., 2001). Problems arise when credit is used for consumption purposes and, as a result, household repay loans and fall into a vicious cycle of debt and ultimately become more vulnerable. NGOs must ensure the maximum use of credit to attain livelihood and food security by supervision of credit use by the borrowers. At the same time this will ease the burden of women in repaying their NGO loans.

Under normal circumstances, households have some opportunity to diversify their livelihood activities. Households develop risk-management and risk-coping strategies via saving and informal insurance mechanisms (Decron, 2002). In a major disaster situation like the 1998

floods, when normal risk-management mechanisms fail, it is difficult for households to diversify their livelihood portfolio. It is difficult for a household to cope in a disaster situation when assets and social capital are depleted. At the same time, household and individual food securities are at risk due to diminished income opportunities. In such situations, households rely mainly on borrowing money and selling labor. The government implements relief and safety net programs (Vulnerable Feeding Program, or VGF) in such situations, but these are not enough to ensure livelihood or food security. NGO credit is also used to smooth consumption. Del Ninno et al. (2001) observed this for borrowing from different sources and food purchases with credit during the 1998 flood. Afterwards, the government also provided households with soft loans to rehabilitate farm activities. Obviously, the soft loans provided as aid to households are different from those that are obtained on a commercial basis (Huijsman, 1986).

Household food security was measured in this research in terms of non-staple calorie intake rather than calorie intake. Non-staple calorie intake reflects the real food security status more accurately than other indicators. Additionally, changes in dietary diversity are brought about by non-staple calorie intake rather than staple calorie intake (Hoddinott and Yohannes, 2001). This study shows that whenever there is a crisis such as a food shortage, households try to maintain their calorie intake at an optimum level. First, households avoid expensive foods such as non-staple items then they switch to cheap staple foods like sweet potatoes, potatoes, wheat or corn. Non-staple food intake has a lower priority in a situation of food shortage (Bouis, 2000). Thus, the non-staple calorie intake gives a good insight into household food security compared to other indicators of food security.

It was found in the analysis that household food security depends on the dependency ratio and the level of household expenditure. The higher the dependency ratio, the more the household is prone to food insecurity. The proportion of expenditure on food of all household expenditures is a crucial factor in household food security. If the household spends all its money on food, then any shock will cause the household to become more vulnerable because no investments have been made (del Ninno and Dorosh, 2002). This points to the difference between livelihood and food security; livelihood security ensures food security, but not the other way around.

Household food security depends on the expenditure of the household, but food security at the individual level also depends on gender. The data on individual food security suggests that gender inequality still plays a major role. An individual in a household might be food insecure just because of gender inequality at the household level. This is an alarming finding, also corroborated by the literature (Chen, 1990; Rozario, 2002). People's own perception of food security is crucial to attaining food security (Frankenberger, 1992). Many households experience seasonal food shortages and they take various measures to cope with these. In addition, cultural acceptability of food is also critical in attaining food security and nutrient adequacy (Frankenberger, 1992). This research reveals that people's perception of food security leads households to prioritize less profitable rice cultivation and compels people to return to farm-based production. Households opt for subsistence farming to maintain food security (Glewwe and Hall, 1998). Food taboos affect the nutritional adequacy of women and girls (cf. Bosch, 2005).

Seasonality has a profound effect on household food security and household's livelihood coping strategies. Households prepare themselves for the lean period of the year by storing food or by saving or diversifying their livelihood (Katona-Apte, 1988). As found in this research, seasonal migration for food is one of the ways households diversify their livelihood

to attain food security. For reasons of perceived food security households also tend to stick to rice cultivation instead of switching to more profitable vegetables cultivation. Rural-urban migration leads to rural livelihood improvement. Overseas migration can dramatically improve rural livelihoods. Income from working abroad can result in asset accumulation in the form of land and houses, as documented in different studies (Adams, 1996; Gardner, 1995; Jockish, 1998; Afsar, 2002), but Hadi (1999) observes that remittances are mostly used for consumptive rather than productive purposes.

10.2.2 Social capital

In the quantitative analysis of this research, household expenditure was used as the main indicator of household livelihood status, and credit taken without collateral as proxy for social capital. Analysis of IFPRI data suggests that social capital significantly influences household expenditure during pre-flood periods but not during post-flood periods. An approximately 14 percent increase in expenditure was recorded due to a one unit increase in credit taken without collateral. Narayan and Pritchett (1997) found that one unit of village social capital (in terms of group membership) increases 20 to 30 percent of household expenditure per person. Maluccio et al. (1999) found a significant impact of household level social capital (based on group membership and characteristics) on per capita expenditure in 1998 but not in 1993. These two studies looked at the impact of village level social capital.

It is apparent from the research that landholding and asset value function as collateral, albeit informally or implicitly. This finding implies that NGOs, relatives, neighbors or whoever provides credit wants to make sure that borrower has enough assets or income to repay loan. It was also found that land and asset ownership also play a hidden role as collateral, in addition to group trust. Because of this, poor people do not get NGO credit while they need it most. Grootaert et al. (2002) observed that poor households with little land get more support as compared to other households, which is contrary to our findings. However, Molyneux (2002) observed that women who possess little physical and financial capital also suffer from a shortage of social capital.

Social capital is not an infinite resource. At times of natural disaster, when the whole community is at risk, social capital is also depleted (Berry, 1993). Many NGOs in Bangladesh are working to provide loans without collateral to help the rural poor. The problem is that NGOs seldom reach the ultra-poor households, so these households cannot benefit from the NGOs' services. After the flood, poor households lost both material assets and social capital and their chances of getting credit diminished. Fox and Gershman (2001) reported that development practitioners have started recognizing social capital as a critical resource of the poor in recent years. BRAC is seeking support from the elite in its programs for support to the ultra-poor (TUP). In rural settings like the study area, client-patron relationships are also a source of support. The support provided by the patrons to their clients is based on their vested interests. They support their clients only when their interest is served by the client, as is evident from the case studies and life histories. In a disaster situation like the 1998 floods when both rich and poor are at risk, support systems are exhausted. The poor expect support from rich kin and neighbors but, at a time of disaster, the rich are busy trying to cut their losses. The role of social capital as currently seen by many social scientists is overestimated. This research shows that social capital is not a panacea for all problems relating to poverty, as Portes (1998) has already observed. Really poor people who do not own land also have difficulties in accessing social capital. Although social capital was defined in this research as borrowing without collateral, it appears that landholding and income function as collateral as well, albeit informally or implicitly.

Formation of social capital at the community level depends not only on trust and collaboration, but also on social cohesion (Moser, 1998). Narayan and Pritchett (1997) argue that social capital needs both capital and social assets, where household economic status also depends on village-level social capital. They emphasized that it is village-level cohesion that leads to village social capital, which ultimately influences household expenditure. Moser (1996) and Narayan (1995) claimed that communities with a diverse stock of social networks and civic associations are in a strong position to confront poverty and vulnerability. The formation of independent village organizations contributes to social cohesion. This enables people to save their earnings at their leisure and in a more homogenous way, with less chance of losing their money and enabling them to easily and quickly access loans when needed. These types of organizations support the household in coping with lean periods or adversity and in sustaining their livelihood. It was also observed in this research that the system of shared labor and the collective celebration of festivals under the guidance of the *matbar* have declined. This is an example of the erosion of village-level social capital, which will affect households. Women gather after lunch and gossip, which enhances social cohesion among them but also sometimes leads to quarrels and disputes. Adler and Kwon (1999) referred to this as the ugly side of social capital. In addition, informal transfers among households are also decreasing, despite improved socio-economic conditions. Devereux (1999) reported about such a situation in Malawi where informal transfers, either between rich and poor or among the poor themselves, are declining. He blames this partly on commercialization and partly on deepening poverty, meaning that the economic basis for redistribution is contracting.

The issue of the relative significance for support from kin versus neighbors remains disputed and difficult to resolve. To Subramanian et al. (2003) “social capital at neighborhood level is often based on aggregating individual perceptions of trust and reciprocity”. The importance of friends in getting or securing jobs as evident in this research is well documented across different cultures (Wilson, 1987; Komter and Vollebergh, 1997; Moerbeek, 2001). It was observed that even poor households lend money or rice to other households. In small amounts, it is given to neighboring households in the spirit of mutual help. At the same time social exclusion and a lack of social support leads to a vulnerable situation.

10.2.3 Gender and social change

The position of women in the research area has changed in the course of time. Women have become empowered both socially and economically as a result of the changing social structure, improvements in education, and NGO initiatives. Since the early eighties NGOs have been working in the research area to empower women through social development, health, education and credit programs. Women’s opportunities for primary education became available through the establishment of non-formal schools by NGOs in the early eighties and government’s food for education initiative from primary to secondary level. These efforts narrowed the gender gap in education. Bosch (2005) and Chen (1990) also point to the narrowing of the gender gap in education in Bangladesh.

NGOs provide credit and training to women for employment and income generation. Women’s access to credit and involvement in income generation activities has led to their enhanced social mobility (cf. Rozario, 2002), empowered them politically and increased legal awareness (cf. Hashemi et al., 1996), and provided them with the ability to make decisions concerning their own fertility (cf. Zaman, 1999). Pitt and Khandker (1998) found that increased income among borrowers resulted in increased household consumption and child education. Meanwhile, Goetz and Sen Gupta (1996) reported that 63 percent of loans are controlled by men and that the lending process victimizes the female borrowers, contributing

to dis-empowerment. Karim (2001) reported on the intimidation of borrowers and an increase in violence against women due to repayment pressure. In our research poor women reported how harassment by NGO workers upon delayed or non-payment of installments forced them to give up their NGO membership. It was observed that men use the credit money but do not take any responsibility in the loan repayment, resulting in the women being harassed by the NGO workers. NGOs in recent years have started requiring that men countersign (either the husband or son) when credit is disbursed to women, as we also observed, so that women do not bear the sole responsibility of the loan (Rozario, 2002). This gives a sense mutual obligation to men for the repayment of the loans and a sense of security for the women. Women's involvement with NGOs gives them mobility and honor in the household, although men vigorously objected at the beginning. This anti-NGO sentiment has abated since men have found their women's involvement with NGOs to be to their benefit.

Domestic violence against women has always been prevalent in Bangladesh. In this research we recorded cases of violence against wives because of dowry disputes. It is not only the husbands who engage in domestic violence, but also the in-laws, who are especially responsible for violence against women in dowry disputes. Sometimes in-laws force the husbands to commit violence against their wives. Political and legal awareness have lessened the incidence of serious physical violence against women, but wife beating is not viewed as violence. Rather, it is seen as the husband exercising his authority. Kabeer (2001) found that incidents of violence against women in poor households have declined due to women's access to credit. Schuler et al. (1996) and Kabeer (2001) found that older women, women with sons, and educated women were beaten less by their husbands. Karim (2001) observed that violence against women is sometimes committed by NGO workers. A wife's resistance to taking credit from a NGO as per her husbands' wish or suggestion also causes violence to be directed against women on many occasions.

Dowry as a serious social problem became apparent from this research, and is documented by Amin and Cain (1997) as well. The problem of dowry has increased; even the marriage of very poor girls requires a minimum dowry of \$90 (5,000 *taka*). Access to credit at the village level is also responsible for dowry increases, as people now use NGO credit for this purpose. Rozario (2002) blamed increased monetization of the village economy and increased wage labor on the growth of dowry, and Naved (1994) reported people's helplessness against dowry is responsible for its rising expense. Amin and Cain (1997), on the other hand, view this problem as a demographically induced shift in the marriage market. Differences in age at marriage between men and women are causing a shortage of bridegrooms compared to brides. In this research we found that the payment of dowry became an opportunity for livelihood generation by the bridegroom's family. The bride family's obligation to provide dowry as Naved (1994) reported makes it difficult to eradicate dowry from society. The income-earning opportunities that young girls from poor households now have and that enables them to save money for their marriage, can lead to a further increase of dowry. The positive side of this is that it has decreased parents' worrying about their daughter's early marriage, which is what parents did in the past. One of the consequences is an increase of the age at marriage for girls. The government passed the Dowry Prohibition Act of 1980. Together with NGOs and other actors in civil society, it is trying to eliminate dowry from society through social awareness programs. However, due to demographic and social constraints, as well as economic reasons, it will be hard to eliminate dowry. Rather, there is a possibility of the further rise of dowry in society.

When women are deserted, divorced or widowed, young women return to their parental or brother's house and may remarry. An older widowed woman, on the other hand, may remain

at her husband's house. Remarrying of women depends on their situation. Having a son is a reason to remain single, because of the notion of sons as assets and girls as liabilities (Bosch, 2005). Blanchet (1996: 50) notes that "boys represent wealth, but girls are seen as a cumbersome responsibility". These notions have to be explained by the patriarchal nature of Bangladesh society. The proliferation of dowry can be seen as a consequence of these notions.

A prerequisite of livelihood is access to resources. It was clearly shown in this research that women diversified their livelihood through NGO credit. Kabeer (2001) argues that NGO credit is one of the best opportunities to diversify household livelihoods. NGOs provide credit for production purposes but in many cases borrowers use the credit for consumption purposes, as is also reported by Glewwe and Hall (1998). As a result, households cannot repay installments in time so they have to borrow from another NGO or moneylender to repay the loan and are trapped in a vicious cycle of debt, ultimately becoming vulnerable. This is also reported in different studies on Bangladesh (Rozario, 2002; Huq, 2000).

This research confirmed that the involvement of women in income-generating activities, as well as access to credit, gives them the opportunity to hold money, which they may lend to others, although most of the time they hide this from their husbands. The lending of money to others by village women is also documented by Karim (2001). For lending money to others (non-relatives) women need the support from men to conduct the transactions. When women lend money to others directly, especially when lending money to their in-laws, they often do so under another name. Kabeer (1991) argues that this secret lending and borrowing of money, due to gender ideologies of purdah and motherhood, are some of the strategies by which women try to resist male power. According to Rahman (2004) money lending or investing money in productive activities by women should not be treated as traditional money lending, but as an "invisible commodity".

The gendered division of labor was once well-defined in rice, wheat, mustard and jute production. Women are involved in post-harvest processing in most cases. In recent years women from poor households have become involved additionally in sowing seedlings, weeding, and sometimes even in harvesting. The involvement of women in vegetable cultivation is more pronounced. This change in the division of labor within poor households resulted in women becoming more involved in the production system. Women have become secondary income earners through their involvement in income-generating activities, through NGO involvement or by necessity. Women are taking on the burden of men in the production sphere but men do not share the reproductive duties of women. Thus, the involvement of women from poor households in income-generating activities or production adds to the burden of women (Moser, 1996). This might result in compromising child care and leisure. It was also observed in the research that women do generally not have access to their earnings. Only in the case of poultry rearing they have limited access to their own income.

According to cultural practice, women do not inherit land or, if they do inherit land, get a small amount of money as compensation. If women inherit any land it is usually handed over to them at a later stage in life. Their husband or sons then claim possession of the inherited properties. Women generally play a crucial role in both food production and consumption. They are literally the gatekeepers to household food security and nutrition (Niehof, 2003). At the same time, due to cultural norms, women tend to eat less food and less nutritious foods than needed to satisfy their calorie and nutritional requirements (HKI, 1994). In the end, individual food security and nutrition is seriously affected by gender discrimination. In this

way, gender ideologies, customs, and food beliefs make women and girls nutritionally vulnerable.

Poor women are more interested in saving rather than borrowing because they fear repayment procedures. It was observed in this research that poor women use savings or loans for non-productive purposes such as dowry, school costs, medical treatment or emergencies. Because they are not using the money for productive purposes, it is difficult for them to repay the installments on time. They are less interested in borrowing from NGOs because they fear defaulting on their loans. It was also observed that women are losing money when they keep their savings in other people's custody. The Reseal Bangladesh Report (2000) also suggests a flexible savings scheme be made available for poor women as they are more interested in savings than taking loans. Thus, NGOs can provide a flexible savings scheme for poor women so that they can save their money and make withdrawals at times of need.

That female-headed households suffer most is due to a variety of reasons, including gender discrimination in the labor market. Adult women are still barred from industrial jobs and must rely mostly on working as underpaid manual laborer. Households that face labor market discrimination (women, minorities) are more vulnerable (Cornia et al., 1987). These households lack male labor and sometimes land as well, which are the key elements of production. Henderson et al. (1997: 132) reported that the well-being of female-headed households may be constrained by "labor shortage together with an overall marginalization as well as cultural and religious proscriptions". Most households without a man are unable to plough the land they possess. They are only involved in less heavy work such as planting seedlings and weeding. These factors lead to female-headed households becoming vulnerable. The government tries to include female-headed households in safety net programs, such as the VGD and VGF programs. Training and credit are provided in an attempt to get women involved in home-based income generating activities, mainly through the Department of Social Welfare and the Directorate for Women's Affairs, the Department for Youth Development, and NGOs. This gives women an opportunity to secure their livelihoods.

10.2.4 The temporal dimension of livelihood

A household's strategies to achieve livelihood and food security have a temporal dimension, making time a critical factor from a livelihood perspective. People develop strategies over time and in relation to the life course phase of their households (Pennartz and Niehof, 1999). It is evident from the research that households develop a long-term livelihood strategy and use short-term coping strategies as well. The economic status of the parental household appeared to have a significant influence on the livelihood status of the own household during the earlier stages of its life course. Men from poor parents face hardships in starting a secure livelihood due to their lack of assets and poor education. There appears to be an inter-generational transfer of poverty.

Household transitions take place over time as households pass through different stages or critical times that determine the shift in livelihood strategies (Glick, 1977). A household's life course may or may not follow a particular track. Household decisions about what to do and not do are governed by time. It is evident from different life histories that households pass through different stages in the life course and in each phase are presented with opportunities which force or entice them to switch strategies. The rise and fall in household livelihood status during the life course determines livelihood strategies (Elchardus, 1984), and vice versa. It was also evident that households changed their livelihood strategies due to socio-economic and political changes. Niehof (2004) observes that historical time provides the

economic, social and political context for livelihood generation. Livelihood diversification by two-thirds of the household heads suggests that these households were either forced or opted to take advantage of new opportunities to sustain their livelihood because of past experiences. It was also found that household livelihood strategies depend on the particular stage in the life course because the labor potential in the household differs according to the stage in the life course. Household composition reflects the household's phase in the life course. Mtshali's (2002) findings show that the economic dependency ratio (which reflects the stage in the household's life course) is a determinant of livelihood strategies and status, which is in agreement with our own findings.

Social activities and daily schedules determine the leisure and time allocation of women. Women from poor households engage in income-generating activities to sustain their livelihoods, forcing these women to balance a multiplicity of demands on their time (Kabeer, 1994). Women's involvement in income-generating activities shows another dimension of women's responsibilities, effectively creating an additional role they must play in the household. These women have to compromise either their domestic work and child care or their leisure time and social activities (Folbre, 1984; Kabeer, 1994). The over-burdening of women may go at the expense of their leisure time, which is detrimental to their mental and physical health, while comprised child care will lead to adverse effects on their children's nutritional status. It is also evident in this research that seasonal time allocations of men and women vary with the distribution of their workloads.

The temporal dimension is important in livelihood research because events and decisions made in the past and the future goals of the household influence decision-making (Pennartz and Niehof, 1999). Most research is based on a cross-sectional design, whether or not it is comparative (Brons, 2005). A longitudinal study design needs longitudinal data that is difficult and costly to obtain. In addition, this type of data collection needs a coherent framework to follow-up data collection, maintain the data, and for final analysis. The importance of longitudinal design is that helps to reveal hidden causes behind changes in livelihood strategy within a socio-cultural, political and economic context that cross-sectional studies fail to elicit. The combined influence of daily, social and historical time governs the livelihood strategies of the households. This can best be documented by a longitudinal study design and analysis. The study of Bosch (2005) looked at adolescent girls in Bangladesh using Matlab data to find the impact of early childhood nutritional anthropometry on adolescent reproductive health. It was possible for her to conduct such a study because the required longitudinal data was available.

10.3 Policy implications

Bangladesh is passing through an economic transition phase due to political, economic and social changes as a result of the democratization of politics, increased opportunities for girls' education and employment, and women's empowerment through access to credit. Although Bangladesh has attained self-sufficiency in food-grain production, food security in many households is still jeopardized by annual flooding and seasonal fluctuations in food availability. At the time of disasters, like the 1998 floods, livelihood opportunities and social capital are rapidly exhausted. As a consequence, households face food insecurity because of the exhaustion of all possible opportunities. In such a situation the government, donors, and NGOs must look to *livelihood provisioning* to meet the food and other essential needs of the people to maintain nutritional levels and thus save lives.

However, food security at the household level does not imply that all members of a household are food secure. Even when a household is food secure an individual might not be food secure due to gender discrimination in household-level food allocation. Policymakers must understand intrahousehold food allocation patterns so that policies and programs have the desired impacts. It is recommended that food and nutrition programs in Bangladesh pay special attention to gender discrimination. All programs aiming at food security should have a gender dimension to address and minimize intrahousehold food allocation discrepancies.

Household food security depends on livelihood variables. Diversification of livelihood (income) activities is necessary to achieve and sustain the livelihoods of the households. The rural economy in Bangladesh has diversified in the course of time as a result of NGO initiatives and socio-economic change. This gives households the opportunity to avert vulnerability and sustain their livelihoods. However, most female-headed households do not benefit from these opportunities due to the gender-based division of labor and social stigma. *Livelihood promotion*, i.e. improving households' resilience for meeting food and other basic needs on a sustainable basis, should be the target of all development agencies including the government, donors, private organizations, and NGOs. In addition, these agencies should emphasize gender-sensitive livelihood opportunities so that it becomes easier for women to diversify their livelihood activities.

Women play a crucial role both as gatekeepers to household food security and nutrition and as major contributors to the household economy. Most NGOs are working with gender sensitive programs to empower women, but in the end their programs may add to women's workloads and increase the incidence of harassment towards women. Women from poor households get support from NGOs through training and credit for employment and income generating activities. However, very poor households remain out of the reach of NGO credit support networks because landholding and assets function, informally or implicitly, as collateral. NGO credit enables many women to avert vulnerability and sustain their livelihoods. In many cases, however, NGO credit is not used properly and is used for consumption purposes, especially in adverse situations like an illness, flood, or when having to pay a dowry. Credit to women is often mis-used by the husband, brothers, and sons. As a result, the borrowers (women) cannot repay loans in time and are harassed by NGO workers. As consequence many poor households avoid NGO credit. Thus, NGOs must ensure the proper use of credit to avoid loan defaults. This can be attained through supervision of credit use, which will ease the repayment burden of women. In addition, many poor women want to save money but do not want to borrow from NGOs. Thus, NGOs should provide easy saving procedures so that poor women can save their money with NGOs and thus avoid losing their money to fraudulent people and enabling them to withdraw their money at their convenience. This will help poor households as well as provide funds for the NGOs to run their program.

Livelihood protection, i.e. the prevention of the erosion of productive assets, or assistance in recovering these, is needed at the time of floods or other disasters. The government assists people at the time of disasters with relief and social safety-net programs (like VGF) and during the post-flood period with agricultural rehabilitation support through credit from agricultural banks or providing seeds and fertilizer to farmers. NGOs also assist people with their own relief programs during floods and disasters, and the extension of credit, which remains insufficient for vulnerable and distressed people, however. In such situations both government and NGOs can work jointly to meet the demand. The government can assist with funds while NGOs can use their network support. NGOs should provide soft loans to poor households to help them recover from a vulnerable situation. The government, with the

assistance of donors and international agencies, is working to attain household food security through social safety-net (VGD, FFW and VGF) and food-for-education (FFE) programs. The VGD program targets vulnerable women (female-headed households), while FFW and VGF target both poor men and women. The FFE program targets both boys and girls, but mostly girls benefit from this program (Ahmed and del Ninno, 2002). All of these programs aim to support household food security but not livelihood security. In addition, costs incurred in delivering this support to households and individuals are another concern. Thus, donors and government agencies should rethink these programs to replace them with cash-assisted programs to increase the efficacy of their interventions. This will help to strengthen household livelihoods instead of only food security.

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GLOSSARY

<i>Agrahayan</i>	Eighth month of Bangla calendar year
Agrani Bank	A government owned commercial bank
<i>Aman</i>	Autumn season (late summer) rice
<i>Ashar</i>	Third month of Bangla calendar year
<i>Asshin</i>	Sixth month of Bangla calendar year
<i>Ata</i>	Local variety of fruit
<i>Aus</i>	Early summer season rice
<i>Aya</i>	A women working as an attendant of patients
Bangladesh	A government-owned commercial bank mainly serving the farmers
Krishi Bank	
<i>Baishakh</i>	First month of Bangla calendar year
<i>Bari</i>	A sub-unit within a village, literally (kin-related) homestead organized around a courtyard, household
<i>Bhadra</i>	Fifth month of Bangla calendar year
<i>Biharis</i>	non-Bengali Muslims migrated from India after independence of Pakistan
<i>Biri</i>	Local variety of tobacco
<i>Boro</i>	Winter season rice
<i>Bou</i>	Housewife or wife, family (pariwar), bridge, sister-in-law
<i>Chaitra</i>	Twelfth month of Bangla calendar year
<i>Chula</i>	Oven, hearth, household
<i>Dal</i>	Lentil, one type of bean, <i>dal</i> soup is a common item with rice
<i>Dawa</i>	Short-term seasonal migration of people as contract labor to harvest paddy and bringing paddy in return. A trip may last from seven days to one month and involves work day and night, as long as possible.
<i>Dheki</i>	A tool used by women to husk paddy
<i>Eid</i>	Religious festival of Muslims
Eid-ul-Adha	Religious festival of Muslims, about two months after Eid-ul-Fitar. On this day rich Muslims use to sacrifice animals in memory of Hazrat Ismail (peace be upon him)
Eid-ul-Fitar	Religious festival of Muslims after the fasting month of Ramadan
<i>Fakir</i>	A traditional healer
<i>Falgun</i>	Eleventh month of Bangla calendar year
<i>Gab</i>	Local variety of fruit
<i>Ghor</i>	Hut
<i>Gosthi</i>	Patrilineal kin group
<i>Gram</i>	Village
<i>Gram sarkar</i>	Village government. There is one gram sarkar per village. A male UP member of the respective village is the head of the GS. A female UP member is also a member. The other 22 members are selected from village leaders and influential persons.
Grameen	Rural
<i>Gur</i>	Brown sugar made from sugar cane
<i>Helencha</i>	A green leafy vegetable
Hilsa fish	Known as <i>lsha</i> in bangla, a local variety of fish
<i>Hukka</i>	A device to smoke in a special way
Islami Bank	A private commercial bank
Jaistha	Second month of Bangla calendar year
<i>Jatiya</i>	National assembly, parliament
<i>Shangshad</i>	

<i>Jhinga</i>	A vegetable
<i>Job</i>	Sorghum
<i>Joutuk</i>	Dowry, paid by the bride family to the bridegroom or his family
<i>Kartik</i>	Seventh month of Bangla calendar year
<i>Khal</i>	Cannel
<i>Kolai</i>	Black bean
<i>Kot</i>	A type of mortgage system, enjoying land for money
<i>Madrasha</i>	A religious school
<i>Magh</i>	Tenth month of Bangla calendar year
<i>Mahajan</i>	Money lender, a rich person
<i>Manab</i>	Human (n.)
<i>Manabik</i>	Human (adj.)
<i>Mastan</i>	<i>Mastans</i> are local strongmen or hoodlums who engage in undesirable criminal activities including murder (<i>mastani</i>)
<i>Matbar</i>	Leader of sub-societal group
<i>Mayor</i>	The elected head of a city corporation
<i>Mohor</i>	Bride price
<i>Mora kartik</i>	Dead end of the season, pre-harvest season before winter
Municipal chairman	Municipal chairman who is the elected head of the municipality
Nor'wester	Summer storm coming from the northwest direction
<i>Paira</i>	Millet
<i>Panta bhat</i>	Rice soaked in water overnight
<i>Para</i>	A hamlet (a village is divided into <i>para</i>).
<i>Parishad</i>	Council
<i>Pariwar</i>	Family, a household unit
<i>Pon</i>	Bride price, paid by the bridegroom's family to the bride; in practice it is not paid during marriage life but paid at the time of divorce
<i>Poush</i>	Ninth month of Bangla calendar year
<i>Purdah</i>	Religious seclusion of women, veil
<i>Rabi</i>	Late autumn/winter crop of pulses, oil seeds and vegetables
<i>Rakhal</i>	At present it is like contract laborer (in the past it was like bonded laborer)
<i>Roti</i>	Home-made bread
<i>Samaj</i>	A sub-societal group in the village, village community
<i>Shalish</i>	Village arbitrary
<i>Shamity</i>	An organized group
<i>Sharee</i>	Traditional women's dress
<i>shata system</i>	Shared labor system, exchange of labor
<i>Shimul tree</i>	A wood tree mainly used to Match factories to make match sticks
<i>Shraban</i>	Fourth month of Bangla calendar year
Sonali Bank	A government owned commercial bank
<i>Taka (tk.)</i>	The monetary unit or currency of Bangladesh
<i>Thana</i>	Police station or a sub-district (roughly a county). Bangladesh is divided into 64 districts and each district is divided into <i>thana</i> . Now a rural <i>thana</i> is called an <i>upazila</i>
<i>Unnayan</i>	Development
<i>Union</i>	Each <i>thana</i> is divided into union and each union is again divided into village (constituency of second last tier of Local Government in Bangladesh)
Union <i>Parishad</i>	Second last tier of the local government is called Union <i>Parishad</i> (council) in Bangladesh

UP Chairman	Chairman of the Union <i>Parishad</i> (council). There is one chairman per union who is directly elected by the people
UP member	Member of the Union <i>Parishad</i> . There is one member per village or part of village or several village and is directly elected by the people. There are three male members and one female member per ward and nine male members and three female members per union.
<i>Upazila</i>	A sub-district (former rural <i>thana</i>)
<i>Upazila Nirbahi Officer</i>	Chief of government administration at the upazila level
Ward	Each union is divided into three wards. A ward may consist of one or more villages or part of a village, depending on the size of the village
<i>Zamindar</i>	Superior landlord/revenue collector (before 1950). The British introduced the <i>zamindar</i> system in 1793 and abolished it in 1946. The task of the <i>zamindars</i> was to collect land revenues. They got the status and right of the land, and obtained their <i>zamindarship</i> through an auction. Factually, they were absentee urban landlords.

LIST OF ACRONYMS AND ABBREVIATIONS

ACC/SCN	Administrative Committee on Coordination – Subcommittee on Nutrition
AL	Awami League
ASA	Association for Social Advancement
ASK	Ain O Sahalish Kendra
AVRDC	Asian Vegetable Research and Development Centre
BADC	Bangladesh Agricultural Development Corporation
BARI	Bangladesh Agricultural Research Institute
BBS	Bangladesh Bureau of Statistics
BHP	BRAC Health Program
BJP	Bangladesh Jatya Party
BMRC	Bangladesh Medical Research Council
BNNC	Bangladesh National Nutrition Council
BNP	Bangladesh Nationalist Party
BRAC	Bangladesh Rural Advancement Committee
BRDB	Bangladesh Rural Development Board
BRRRI	Bangladesh Rice Research Institute
BS	Banchte Shekha
CMR	Child Mortality Rate
CONCERN	An Irish voluntary organization
DANIDA	Danish International Development Assistance
DATA	Data Analysis and Technical Assistance
DC.	District of Colombia
DEC	Development Economics Chair Group at Wageningen University
DMCH	Dhaka Medical College Hospital
DOF	Directorate of Fisheries
DPT	Diphtheria, pertussis and tetanus toxoids,
DWASA	Dhaka Water Supply and Sewerage Authority
ENT	Ear Nose and Throat
EPZ	Export Processing Zone
FAO	Food and Agricultural Organization
FCND	Food Consumption and Nutrition Division (at IFPRI)
FFE	Food for Education program
FGDs	Focus Group Discussions
FWA	Family Welfare Assistant
FWC	Family Welfare Center
FWV	Family Welfare Visitor
GB	Grameen Bank
GDP	Gross Domestic Product
GKT	Gono Kallayan Trust
GoB	Government of Bangladesh
GS	Gram Sarkar
HAZ	Height-for-age Z-score
HKI	Helen Keller International
HSC	Higher Secondary School Certificate
ICLARM	International Centre for Living Aquatic Resource Management
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
IGVGDP	Income Generating for Vulnerable Group Development Program
IMR	Infant Mortality Rate

IPH	Institute of Public Health
IRRI	International Rice Research Institute
IUCN	International Union for Conservation of nature
IUD	Intra Uterine Device
JMBA	Jamuna Multipurpose Bridge Authority
KAP	Knowledge Attitude and Practice
Kg.	Kilogram
Km.	Kilometer
LBW	Low birth weight
MAEP	Mymensingh Aquaculture Extension Project
MAKS	Manab Kallayan Shangstha
MELA	Mincro Enterprise Lending Assistance
MGS	Mansholt Graduate School
Mm	Millimeter
MMR	Maternal Mortality Rate
MP	Member of Parliament
MSc	Master of Science
MSL	Mean Sea Level
Mt	Metric ton
MW	Mega Watt
NGO	Non-governmental Organizations
NHF	Neys-van Hoogstraten Foundation
NNP	National Nutrition Program
NOV	Netherlands Research School of Women's Studies
NOVIB	Dutch donor Agency
OLS	Ordinary least square
ORT	Oral Rehydration Therapy
PE & RC	Production Ecology and Resource Conservation
PGN	Practical Gender Needs
PhD	Doctor of Philosophy
PKSF	Polli Karma Shayak Foundation
PL-480	Public Law – 480
PML	Pakistan Muslim League
PROSKIKA	Proshika Manabik Unnayan Shangtha
RAWOO	Raad voor Advies Wetenschappelijk Onderzoek Ontwikkelingslanden
RDA	Recommended Dietary Allowance
RESPONSE	Regional Food Security for Natural Resource Management and Sustainable Economics
RMP	Rural maintenance Program
RSO	Rural Sociology Chair Group at Wageningen University
SCH	Sociology of Consumers and Households Chair Group at Wageningen University
SD	Standard deviation
SE	Standard error
SENSE	Netherlands Research School for the Socio-Economic and Natural Sciences of the Environment
SGN	Strategic Gender Needs
SPSS	Statistical Package for Social Sciences
Sq.Km.	Square Kilometer
SSC	Secondary School Certificate
TB	Tuberculosis

TBA	Traditional Birth Attendant
TFR	Total Fertility Rate
TSP	Training and Supervision Plan
UAE	United Arab Emirates
UHC	Upazila Health Complex
UK	United Kingdom
UNDP	United Nations Development Program
UNFPA	United Nations Family Population Agency
UNICEF	United Nations Children Education Fund
UNO	Upazila Nirbahi Officer
UP	Union Parishad
US(A)	United States (of America)
UTI	Urinary Tract Infection
VGD	Vulnerable Groups Development Program
VGf	Vulnerable Groups Feeding Program
VO	Village Organization
WB	World Bank
WCED	World Commission on Environment and Development
WFP	World Food Program
WHO	World Health Organization
WP	Working Program
WTO	World Trade Organization
WUR	Wageningen University and Research Centre

ANNEXES

ANNEX I

Checklists for focus group discussions (FGDs)

	Male	Female
A. Kinship 1. Norms and values regarding kinship, obligations and right to support, different types of kinship relationship and their value (step children, in-laws, etc). 2. Uncles- paternal/maternal? 3. Kinship versus neighborhoodship? 4. Preferential marriage? 5. Changes during last 20 yrs (for 1-4). 6. Different types of support through kinship. 7. Borrowing from kin – under what conditions and from whom?	X	X
B. Food security, nutrition adequacy, livelihood security/vulnerability 1. What are the indicators of HH food security? 2. How food secure are households now as compared to the past – changes over time? 3. Impact of disasters (flood/drought) on food security. 4. Changing pattern of food security through different months (agricultural calendar). Seasonality of food security. 5. Emic conception of nutrition adequacy – opinion about composition of a good diet (how should it be composed). 6. Differences regarding children (boys and girls), adults (men and women). 7. Improvement over last 20 years? 8. Food taboos (pregnant and lactating women, infants, girls, boys - (vegetable, fish, meat, milk, egg)? 9. Differences in nutritional adequacy according to months/seasons. Seasonality of nutrition adequacy. 10. Ways of earning a living in the area. 11. Involvement of women in income-earning activities. 12. Livelihood diversification trend over last 20 years. 13. What makes livelihood secure? How? (their views). 14. Do people have enough assets, savings, etc. to make livelihood secure at the time of crisis? 15. What happens if this is not the case? Examples? 16. Do they have a safety net (support system) to survive? Which? 17. Indebtedness in the area – to whom? Is it a general problem? 18. Who are vulnerable? Why? (indicators of vulnerability) 19. Indigenous livelihood classification? (own way of defining security/ vulnerability, and ranking households according to degree of vulnerability or security)	X	X

C. History of eating <ol style="list-style-type: none"> 1. Changes in daily menu during past 20 yrs with regard to: a. staple; b. sources of protein; c. sources if micro-nutrients (vegetables). 2. Differences in daily menu between post and pre-harvest period. 3. Impact of 1988 and 1998 flood; 1989 drought on daily menu. 4. Introduction of new foods. 5. Foods that were eaten in former times (when young/by parents) but not anymore. 6. Food exchange – change of practices over time? 7. Food collection (wild/normal) 8. Gleaning 	-	X
D. Women's empowerment <ol style="list-style-type: none"> 1. Dowry issues (changes in practice over last 20 yrs): Their views on the importance and value of dowry and consequences for women. 2. Education of girls: it is less important than boys? Feeling of parents about investing in daughter's education? 3. More education of girls does create problems or not? Husbands? 4. Access, ownership and control to resources and assets (jewelry, land, livestock, homestead). 5. Access to information. 6. Changes in division of labor in the farm, household activities and outside. 7. Importance of employment and income earning by women. 	-	X
E. Health and Family Planning <ol style="list-style-type: none"> 1. Health risks for women. 2. Health risks for infants and children. 3. Changes in health risks pattern over last 20 yrs. 4. Pattern and changes in health seeking behavior over last 20 yrs. 5. Opinion about traditional healers. 6. Role of TBA and their practices during pregnancy and childbirth. 7. Indicators of good/bad health of women and children. 8. Control over fertility at present and in the past - changes over time. 9. FP knowledge and practices. 10. Preferences for FP method. 11. Incidence of abortion and who is doing abortion (fatal cases)? 12. Changes over last 20 yrs. 	-	X

F. Gender issues	-	X
1. Inheritance		
2. Women's empowerment (mobility)		
3. Decision-making power on consumption, production, sale of produce, purchase of production inputs		
4. Children's education, marriage, treatment during illness		
5. Employment and income (wage)		
6. Gender division of labor		
7. Women's position		
8. Purdah		
9. Marriage		
10. Dowry		
11. Domestic violence		
12. Intrahouse food distribution		
13. Seasonality and food collection		
14. Vegetable cultivation and gender role		
15. Reproductive issues		
16. Gender: access and control		
17. Gender role on social capital		
18. Time use		
19. Practical gender needs		
20. Strategic gender needs		

* Five income classes based on sources of income and income level

ANNEX II

Checklist for in-depth interview

1. Household livelihood portfolio (sources of income – gender & age)
2. Role of social capital (support system) in asset building
3. Gender role on social capital
4. Resources: Personal level – knowledge, skills, experiences
Household level – management skills, experiences, information, social capital
5. Social environment: information services, social networks, market, religion, exchange relations, community organizations, social norms, cultural norms
6. Natural environment: access to safe water
7. Gender: access and control
8. Gathering/collection of wild foods, gleaning, hunting, storage
9. Morbidity (gender & age)
10. Seasonality (normal – post harvest & lean – pre-harvest period)
11. Mortgage system
12. Production of GLV & NGLV
13. Collection of GLV & NGLV
14. Production of livestock
15. Production & collection of fish
16. Social time
17. Historical time
18. Cultural values about femininity and masculinity
19. Access & control over assets
20. Women's autonomy (mobility)
21. Domestic violence
22. Control over own body
23. Employment and income (wage)
24. Children's education, marriage, treatment during illness
25. Decision-making power on consumption, production, sale of produce, purchase of production inputs

ANNEX III

ADDITIONAL SURVEY IN BANGLADESH (July 2003)

(Questions on migration, family planning, kinship and social capital)

1. General information

Household Number in the village survey:

Survey Household Number:

Name of HH head: _____

Father's Name: _____

Name of the Respondent: _____

Husband's Name: _____

Para (Hamlet): _____

Village: _____

Union: _____

Upazila: _____

District: _____

Name of the Interviewer: _____

Date of Interview:

Signature of the Interviewer: _____

Household composition

Sl. No.	Name	Sex M=1 F=2	Age (Mo/Yr)	Marital status	Educa tion Level	Occupa tion	Relation with HH
01							
02							
03							
04							
05							
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							

2. Place of Residence: Husband's family ☐ Wife's family ☐ Neither ☐

If wife's family, then why? _____

1. Economic status of parents

a) Amount of land owned by father and mother of the man? _____ Decimals.

b) Number of brother _____ and sister _____.

c) Amount of land inherited from father and mother. _____ decimals.

d) General economic status of man's parent.

Very poor ☐ Poor ☐ Middle class ☐ Rich ☐ Very rich ☐

e) Amount of land owned by father and mother of the woman? _____ decimals.

f) Number of brother _____ and sister _____.

g) Amount of land inherited from father and mother of woman. _____ decimals.

h) General economic status of woman's parent.

Very poor ☐ Poor ☐ Middle class ☐ Rich ☐ Very rich ☐

i) Do you think your parent's economic status influenced your present status?

Yes ☐ No ☐

If yes, whose parents? _____

4. If there is any kinship relation between husband and wife? Yes ☐ No ☐

If yes, specify _____

5. Health facilities (health seeking behavior during different illnesses).

a) During past one year

Name of diseased person	Health complaints	Medical help sought

b) During past five years:

Name of diseased person	Health complaints	Medical help sought

c) Did any of your children die during past five years? Yes ☐ No ☐

If yes, sex: Male ☐ Female ☐ Age: _____ yrs _____ months

6. Water & sanitation facilities at the hh level

a) Is there a tubewell on the household premises? Yes ☐ No ☐

If yes, note the tubewell mouth marking. Green ☐ Red ☐ None ☐
(for arsenic contamination)

If no, what is the distance of tubewell to the household? _____ feet

Do you have access to the neighboring tubewell? Yes ☐ No ☐

Who fetches water and for what purpose?:

Purpose	Wife	Husband	Daughter	Son	In-laws
Cooking					
Washing utensils					
Washing clothes					
Bathing					

b) Cleaning of household premises

Purpose	Wife	Husband	Daughter	Son	In-laws
Sweeping					
Removal of cow dung					
Other stools					

c) Type of latrine used the household members.

Sanitary/Slab latrine ☐ Pit latrine ☐ Open latrine ☐ Other, Specify _____

7. Migration as livelihood strategy (prevalence, kind of migration, who is migrating, why, where, remittances, any unpleasant experiences)

a) Has any HH member migrated out to other districts during past five years?

Yes ☐ No ☐

If yes, Where _____

When _____

Purpose _____

Amount of money spent for the purpose (investments, for getting papers, paying intermediaries) _____ Taka

What benefits did you get from this migration? Money sent home _____ Taka

Appliances brought home (cost) _____

b) Has any HH member migrated out to other country? Yes ☐ No ☐

If yes, Where _____

When _____

Purpose _____

Amount of money spent on the purpose (investments, for getting papers,
paying intermediaries) _____ Taka

How did you manage that money? _____

What benefits did you get from this migration? Money sent home _____ Taka

Appliances brought home (cost) _____

c) Has any member from your family tried to migrate to other country but lost
money? Yes ☐ No ☐

If yes, Where _____

When _____

How much money did you lose for that purpose? _____ Taka

How did you manage to get that money? _____

Were you able to recover the lost money? _____

8. Importance of kin and relatives

a) Who are more helpful to you when you need monetary help/assistance?

Husband's kin ☐ Wife's kin ☐ Husband's relatives ☐ Wife's relatives ☐

Paternal in-laws ☐ Maternal in-laws ☐ Others: (please specify) _____

Give an example of help in detail: _____

b) Who are more helpful to you when you need non-monetary help/assistance?

Husband's kin ☐ Wife's kin ☐ Husband's relatives ☐ Wife's relatives ☐

Paternal in-laws ☐ Maternal in-laws ☐ Others: (please specify) _____

Give an example of help in detail: _____

9. Importance of neighbors

a) Do you have good relations with neighbors? Yes ☐ No ☐

If not, why? _____

If yes, are they more important than kin and relatives? _____

b) Who is more helpful when you need help/assistance?

Kin ☐ Relatives ☐ In-laws ☐ Neighbors ☐

If neighbors, then give an example of help in detail: _____

10. Who do you turn to for help when:

- a) You do not have enough rich people in family? _____
- b) Someone in your family needs medical treatment? _____
- c) You need to borrow money at any emergency situation? _____
- _____

11. Involvement with organization

- a) Are you involved with any village organization? Yes ☐ No ☐

If yes, which organization?

Village based ☐ BRAC ☐ Grameen Bank ☐ Proshika ☐ ASA ☐

GKT ☐ Bureau Tangail ☐ Others: (please specify) _____

- b) Did you leave any organization? Yes ☐ No ☐

If yes, which organizations?

Village based ☐ BRAC ☐ Grameen Bank ☐ Proshika ☐ ASA ☐

GKT ☐ Bureau Tangail ☐ Others: (please specify) _____

Why? _____

- d) Give an example of help received from any NGO: _____
- _____
- _____

12. Family planning knowledge & practice

- a) Do you know about FP methods? Please specify.

Pill ☐ Condom ☐ Injection ☐ IUD ☐ Norplant ☐ Tubectomy ☐

Vasectomy ☐

b) Are you using any method? Yes ☐ No ☐

If yes, what method you are using now?

Femicon ☐ Ultracon ☐ Panther ☐ Raja ☐ Injection ☐ IUD ☐

Norplant ☐ Tubectomy ☐ Vasectomy ☐

If not, why? _____

c) Do you have an intention to change methods in future? Yes ☐ No ☐

If yes, then to which method?

Femicon ☐ Ultracon ☐ Maya ☐ Raja ☐ Injection ☐ IUD ☐

Tubectomy ☐ Vasectomy ☐

d) Did you need to seek permission from your husband/in-laws? Yes ☐ No ☐

If yes, did you actually do so? _____

If no, why? _____

e) If pill, from where do you obtain this pill?

Govt. Health worker ☐ BRAC Shebika ☐ Purchase from shop ☐

Hospital ☐ Upazila Health Complex ☐

f) If pregnant, ask whether contraceptive methods were used before? Yes ☐ No ☐

g) For pregnant women: Do you intend to use contraception after child birth?

Yes ☐ No ☐

If not, why? _____

ANNEX IV

Seasonal calendar of major crops

CROP	MONTHS												
	Poush	Magh	Falgun	Chaitra	Baishakh	Jaistha	Ashar	Shraban	Bhadra	Asshin	Kartik	Agrahayan	Poush
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Aus (Local)													
Aus (BR3)													
Aus (Hybrid)													
Aman (Local)													
Aman (BR11)													
Aman (BR3)													
Boro (BR3)													
Boro (BR29)													
Wheat													
Maize													
Potato													
Lentil													
Chickpea													
Mung bean													
Black gram													
Mustard/Rape													
Groundnut													
Cucumber													
Sweet Gourd													
Cauliflower													
Cabbage													
Snake gourd													
Ind. Spinach													
Leaf Amaranth													
Stem Amaranth													
Kang kong													
Egg plant													
Tomato													
Green Pea													
Yard long Bean													
Jhinga													
Spinach													
Papaya													
Jute													

SUMMARY

Bangladesh became self-sufficient in food grain production in 1996, but this achievement was lost during the devastating floods of 1998. Food and livelihood security still are a critical concern in Bangladesh. To understand the dynamics of rural livelihood systems, on which food security depends, we have to look at livelihoods from the people's perspective. People develop their livelihood strategies in relation to the situation they are facing. For this they use their assets and capabilities as well as their social capital, such as kinship relations, relations with friends and neighbors, membership of local organizations and entitlements to NGO support. This research aimed at gaining insight into the role of social capital of households and individuals in generating livelihood, achieving food security and averting livelihood and food vulnerability.

In the research the temporal dimension and gender were cross-cutting perspectives. The temporal dimension was included in several ways. At household level the situation before and after the 1998 floods was compared to determine the impacts of the disaster on livelihood and food security and the role of social capital in attaining these. At the individual level the research looked into how individuals develop strategies to improve their situation and that of their family and how they cope with adversity in life. Developments and processes were set against the background of the ecological conditions and macro-level demographic, socio-economic, cultural and political changes in Bangladesh. In livelihood, food and nutrition research the gender perspective is essential. Not only do women generally have less access than men to the assets, resources and employment opportunities needed for livelihood generation, they also get a lesser share of livelihood outcomes and nutritious food. Though this situation of gender inequality was confirmed by the research findings, the results of this research also indicate that as a result of social change in Bangladesh the gender gap is narrowing, notably with regard to education and employment.

Both quantitative and qualitative methods for data collection were applied in the research. The quantitative data set was derived from survey data collected by IFPRI in the sub-district of Satoria in the district of Manikganj. In several rounds, surveys were conducted in 1996-1997 and 1999-2000 among the same sample of households. For this research the sample consisted of only those households of which data for all rounds were available, which amounted to a sample size of 307 households for the quantitative data set. The SPSS program was used to analyze this panel data set. In the same area complementary fieldwork was done during 2001-2003. To complement the IFPRI data an additional survey was conducted in 2003. The qualitative data was collected during 2001-2003 through focus group discussions, observation, in-depth interviews, case studies, and the life history method.

The research area was once marked as a severely food-deficit area, but the introduction of irrigation facilities and high-yielding varieties of rice resulted in an increase in cereal food production. However, food production in the area still cannot meet the demand. The household dependency ratio and the level of household expenditure determine food security at household level to a large extent. The higher the dependency ratio, the more the household is prone to food insecurity. The proportion of expenditure on food of all household expenditures is a crucial factor in household food security. Food security at the individual level and the nutritional adequacy of individual food intake are strongly related to gender. Cultural acceptability of food is another critical factor in attaining food security and nutrient adequacy. Food taboos also affect the nutritional adequacy of women and girls. People's perceptions about food security motivate them to engage in farm-based livelihood activities and seasonal migration for food. The way people perceive food security also explains why

they tend to stick to rice cultivation, whereas commercial vegetable cultivation would be more profitable.

The livelihood portfolios of the households in the research area have changed over time. In the past most households were involved in either farming or farm labor, but opportunities for off-farm and non-farm labor eased the dependency on agriculture and led to further diversification of livelihood activities. More than two thirds of the household heads now have more than one source of income, which enables the household to avert vulnerability and sustain its livelihood. The role of poverty alleviation programs of the government and NGOs is also important in this regard. Having land is still seen as the best way to attain food security and generate wealth. Like in the past households still try to accumulate land and switch to farm-based livelihood activities once they are better-off. They obtain credit from NGOs and village-based organizations to buy land or take land on mortgage, and to rear their own livestock, though educated young men want to find service jobs or migrate out of the country. Remittances may dramatically improve the livelihood status of migrant households, but many households lose their money to fraudulent agents and are worse off in the end. Nowadays, young girls are also migrating to the cities to work in export-oriented industries.

It is evident from the research that households both develop longer-term livelihood strategies and use short-term coping strategies. From the life histories it could be inferred that the livelihood status of a household is significantly influenced by the economic status of the parental household of the household head. Men from poor parents face hardship when they start a household of their own due to lack of assets and poor education. There appears to be an inter-generational transfer of poverty. It is evident from the different life histories that as households pass through different stages of life they are presented with opportunities that force or entice them to switch to new strategies. The rise and fall in household livelihood status during the life course determines livelihood strategies. It was also found that household livelihood strategies depend on the stage in the life course, as indicated by the economic dependency ratio, and the ensuing labor potential of the household.

In the research area, borrowing is an integral part of household livelihood. People take credit to meet short-term consumption need and for working capital. They take credit without collateral from their kin, relatives, neighbors, friends or NGOs through mutual trust and networking, and from banks or moneylenders with collateral. In this research, credit taken without collateral was used as a proxy for social capital. A considerable portion of the credit is provided by NGOs and poor people who do not own land or assets have difficulties in accessing credit either from neighbors or NGOs. It appears that landholding and assets function as collateral, albeit informally or implicitly, in addition to group cohesion. Support from friends is important to gain access to jobs in factories. In patronage relationships patrons may provide support, but only if it suits their own interest. For support kin are generally more important than neighbors, but to some households it is the other way around. The practices of borrowing foods at a time of need and providing food gifts can still be observed but is less common compared to the past. Involvement of women in NGOs adds to their social capital and gives them access to new information, but cultural barriers mostly prevent them from effectively using it. The formation of independent village organizations creates new forms of social cohesion from which people can benefit. At the same time, traditional forms of community level social capital, like the shared labor system and communal celebrations of Eid festivals under the guidance of local leaders, are eroded.

The gender division of labor is related to the economic status of households. Women from poor households work in the rice fields, while those from well-off households do not.

Women's work in the field is generally confined to sowing and planting seedlings, but in case of vegetable cultivation women are also engaged in harvesting. Vegetable cultivation and livestock-rearing have increased women's work load. Livelihood activities are still defined by gender, although less so than in the past. Nowadays both men and women are involved in the productive sphere but women's productive role is not yet well recognized. Young girls are now engaged in factory work, but adult women lack that opportunity and are still bound to gender-specific livelihood activities. Women now increasingly inherit land from their parents, but in the end it goes to their husband or sons. Women's access to credit and involvement in income generating activities give them opportunities to hold money, although they tend to hide this from their husbands. Women take credit from NGOs, but it is men who mostly control it. Sometimes, women are harassed by their husbands if they are unwilling to take credit while their husband wants them to do so, and by NGO workers when they fail to repay the loan in time. Women need men's support to lend money to non-relatives and there is a chance of losing it if they lend money to in-laws. Women try to circumvent this by hiding their identity and using somebody else's name.

Dowry has become part of rural life and even very poor households need to pay dowry for their daughters' marriage. Dowry belongs to the husband and his family; only jewelry is a woman's personal property. The amount of dowry paid for a woman at the time of marriage influences her position vis-à-vis her husband and in-laws. If a good dowry has been paid it may increase her decision-making power. Dowry disputes are an important cause of violence and in-laws play a crucial role in this. Domestic violence against women is still prevalent. Wife-beating is not so much seen as violence but as a husband's prerogative.

Female household heads depend on their in-laws, parents or brothers for their livelihood. When they get engaged in economic activities they are handicapped by social stigma. They lack entitlements and support from the community. When they are barred from the labor market by their guardians, their children may take their place. When they do enter the labor market they have to put up with gender discrimination in payment.

Men and women have different patterns of daily time allocation. Women take leisure after lunch while men do so during the late afternoon or evening. Women are now increasingly involved in NGO and village organization meetings. With these additional activities women may be overburdened, which may lead them to compromise their leisure time and time spent on child care. There is a seasonal dimension to the use of social time. Men used to relax and gossip after harvest, while women were still busy with post-harvest processing. However, among men the traditional custom of gossiping and exchanging views while smoking their water pipe has become almost extinct.

Decisions in the production sphere are solely made by men, though now women are allowed to give their views. Though women now have some decision-making power in reproductive matters, they still have little access to modern medical treatment. Poor women and women in female-headed households have relatively more freedom to choose their own strategies and use new information, but, due to various socio-cultural constraints, many women fail to do so. While women know their practical needs, they are usually less aware of their strategic needs. However, increased girls' enrolment in primary and secondary school, because of widening opportunities for education and parent's awareness about the importance of educating their daughters, is a positive development.

It may be concluded that household food security depends on a number of livelihood variables and the household dependency ratio. At the individual level gender inequality still

influences individual food and nutrition security. The impact of disasters like floods appears to minimize the effects of individual characteristics because there is little food available for all. Though social capital is a crucial factor in sustaining livelihood and averting vulnerability, also this resource is less accessible to poor people, as indicated by their lack of access to loans without collateral. Really poor people, who do not own land and assets, have difficulties in accessing social capital. In a disaster situation both assets and social capital are depleted, which makes it hard for poor households to find support. So, social capital is certainly not a panacea for all problems relating to poverty.

SAMENVATTING

In 1996 werd Bangladesh zelfvoorzienend in graan, maar de verwoestende overstromingen van 1998 maakten dit weer ongedaan. Voedselzekerheid en bestaanszekerheid zijn nog steeds problematisch in Bangladesh. Om te begrijpen hoe mensen in hun levensonderhoud en voedsel voorzien moeten we vanuit hun perspectief kijken naar de activiteiten die ze hiervoor ontplooiën. Mensen ontwikkelen strategieën om in hun levensonderhoud te voorzien in relatie tot de situatie waarmee ze geconfronteerd worden. Ze gebruiken daarvoor zowel hun bezittingen en vaardigheden als sociaal kapitaal, dat wil zeggen het geheel aan sociale relaties – met familie, vrienden, burens – en contacten met of lidmaatschap van lokale organisaties. Het doel van dit onderzoek was het verkrijgen van inzicht in de rol die sociaal kapitaal speelt in het levensonderhoud en het verwerven van voedselzekerheid en in het afwenden van gebrek en onzekerheid van huishoudens en individuen in ruraal Bangladesh.

De dimensie van tijd en het *gender* perspectief vormden integrale onderdelen in het onderzoek. De temporele dimensie werd op verschillende manieren geïncorporeerd. De situatie van dezelfde huishoudens voor en na de overstromingen van 1998 werd onderzocht om de invloed ervan op het levensonderhoud en de voedselzekerheid en de rol van sociaal kapitaal hierin te bepalen. Op het niveau van het individu werd gekeken welke strategieën mensen ontwikkelen om hun leven te verbeteren en hoe ze omgaan met tegenslag. Deze processen werden geplaatst in de ecologische context van Bangladesh en de sociaal-economische, culturele en politieke veranderingen van de afgelopen decennia. In onderzoek naar bestaanszekerheid en voedselzekerheid is het hanteren van een *gender* perspectief cruciaal. Vrouwen hebben niet alleen minder toegang dan mannen tot de hulpbronnen die nodig zijn voor het opbouwen van bestaanszekerheid, zij delen ook minder in de opbrengst van dergelijke activiteiten, inclusief voedsel. Deze *gender* ongelijkheid wordt bevestigd door dit onderzoek. Het onderzoek laat echter ook zien dat de ongelijkheid tussen mannen en vrouwen afneemt, met name als gevolg van de participatie van meisjes en jonge vrouwen in onderwijs en op de arbeidsmarkt.

In het onderzoek werden zowel kwantitatieve als kwalitatieve methoden van data verzameling toegepast. De kwantitatieve gegevens waren afkomstig van surveys die het IFPRI uitvoerde in Saturaia, Manikganj district, in de jaren 1996-1997 en 1999-2000. In verschillende ronden werden dezelfde huishoudens ondervraagd. Voor dit onderzoek werden de gegevens gebruikt van in totaal 307 huishoudens die waren opgenomen in elke survey ronde. Deze data set werd statistisch geanalyseerd met behulp van het SPSS programma. In hetzelfde gebied werd additioneel veldwerk gedaan in de periode 2001-2003, bestaande uit een survey en het verzamelen van kwalitatieve gegevens door middel van verschillende methoden.

Het onderzoeksgebied stond vanouds bekend als een gebied met een voedseltekort, maar de introductie van irrigatie en nieuwe rijstsoorten leidden tot een verhoging van de graanproductie, hoewel deze nog steeds niet groot genoeg is om aan de vraag te voldoen. De voedselzekerheid van huishoudens is in hoge mate afhankelijk van de afhankelijkheidsratio van het huishouden en de besteding aan voedsel van het huishoudbudget. Hoe hoger de afhankelijkheidsratio des te groter de kans op gebrek aan voedsel. De proportie voedselbestedingen van het huishoudbudget is een cruciale indicator voor voedsel(on)zekerheid. Daarnaast zijn ook culturele factoren van invloed, zoals voedseltaboes voor meisjes en vrouwen. De wijze waarop de mensen voedselzekerheid percipiëren verklaart waarom ze zelf voedselgewassen willen blijven verbouwen, seizoensmigratie ondernemen waarvoor ze

beloond worden met rijst, en prioriteit geven aan het verbouwen van rijst boven de meer lucratieve groenteteelt.

De portfolio van activiteiten die mensen ontplooiën om in hun levensonderhoud te voorzien heeft in de loop van de tijd verandering ondergaan. Er is meer werkgelegenheid buiten de landbouw dan voorheen. Meer dan tweederde van de hoofden van huishoudens heeft nu meer dan één bron van inkomsten. Daarnaast spelen de overheid en niet-gouvernementele organisaties (NGOs) een belangrijke rol in armoedebestrijding. Toch zien de mensen zelf landbezit nog steeds als de belangrijkste voorwaarde voor bestaanszekerheid en landbouw als essentieel voor voedselzekerheid. Ze gebruiken leningen om land te kopen of te pachten of om vee te kopen. Jonge mannen met een opleiding verlaten echter het dorp om elders werk te zoeken, soms in het buitenland. Het geld dat ze naar huis sturen is uiterst belangrijk voor de bestaanszekerheid van deze huishoudens. Het gebeurt echter ook dat bij het zoeken naar werkgelegenheid in het buitenland mensen het slachtoffer worden van de praktijken van frauduleuze bemiddelaars. Tegenwoordig verlaten ook steeds meer meisjes hun dorp om in een fabriek te gaan werken.

Uit het onderzoek blijkt dat huishoudens zowel lange termijn strategieën ontwikkelen als overlevingsstrategieën gebruiken voor de korte termijn. Uit de levensgeschiedenissen van mensen blijkt hoe belangrijk de economische status van het ouderlijk huis is voor de kansen op een goed bestaan van de kinderen. Een man met arme ouders mist de middelen en de opleiding om een goede start te maken. Armoede wordt in zekere zin van de ene generatie op de andere doorgegeven. De economische situatie van een huishouden op een gegeven moment bepaalt welke strategieën mogelijk en haalbaar zijn. Daarnaast bleek de afhankelijkheidsratio een belangrijke rol te spelen vanwege het potentieel aan arbeidskrachten in het huishouden dat deze reflecteert.

In het onderzoeksgebied zijn geldleningen integraal onderdeel van de plaatselijke economie. Mensen lenen geld voor consumptieve doeleinden of om in productieve activiteiten te investeren. Ze kunnen lenen zonder onderpand van familie, burens of vrienden en van NGOs. Voor een lening van de bank of een *moneylender* is wel een onderpand vereist. In dit onderzoek werd het lenen van geld zonder onderpand gebruikt als indicator voor het beschikken over sociaal kapitaal. Uit het onderzoek blijkt echter dat mensen die geen land of andere kapitaalgoederen bezitten moeite hebben een informele lening te krijgen. Kennelijk hebben kapitaalarme mensen ook gebrek aan sociaal kapitaal. Naast onderling vertrouwen functioneren land en ander bezit dus als onderpand, zij het informeel en impliciet. Vrienden blijken belangrijk te zijn om werk in een fabriek te krijgen. Traditionele patronage verhoudingen bieden voor arme mensen weinig soelaas omdat de patroon vooral zijn eigen belangen veilig stelt. Het lenen en geven van voedsel in tijden van nood vindt nog steeds plaats, maar minder dan in het verleden. De betrokkenheid van vrouwen bij NGOs versterkt hun positie maar bestaande restrictieve normen maken dat ze daar nog weinig gebruik van kunnen maken. Terwijl nieuwe dorpsorganisaties belangrijk zijn voor sociale cohesie raken de traditionele vormen van communale solidariteit en cohesie, zoals het gezamenlijk vieren van de religieuze festivals, steeds meer in onbruik.

De arbeidsdeling tussen mannen en vrouwen is gerelateerd aan de economische status van het huishouden. Vrouwen uit arme huishoudens werken in de rijstvelden, vrouwen uit meer welgestelde huishoudens in het algemeen niet. In de landbouw zijn het mannen die betrokken zijn bij het oogsten, behalve in de groenteteelt waar vrouwen dit voor hun rekening nemen. Hoewel vrouwen nu veel meer dan vroeger een economisch productieve rol vervullen wordt dit nog nauwelijks erkend. Jonge meisjes kunnen in de fabriek werken maar

volwassen vrouwen zijn nog steeds beperkt in de soort inkomensgenererende activiteiten die ze kunnen ondernemen. Het komt nu steeds vaker voor dat ook vrouwen land van hun ouders erven, maar uiteindelijk zijn het hun man en zonen die het land in bezit nemen. Vrouwen hebben nu meer gelegenheid om geld te lenen voor inkomensgenererende activiteiten, maar als ze dat doen informeren ze meestal hun echtgenoot niet. Soms dwingen mannen hun vrouw geld te lenen van een NGO maar laten de terugbetaling aan hun vrouw over, waarmee ze hun vrouw in problemen brengen. Vrouwen die geld lenen aan anderen doen dat meestal in naam van een man, anders is er een grote kans dat ze het verliezen.

Het betalen van een bruidschat voor dochters is langzamerhand deel van de cultuur in ruraal Bangladesh geworden. Na betaling is de bruidschat eigendom van de man en zijn familie. Vrouwen kunnen alleen maar sieraden als persoonlijk bezit hebben. Hoe hoger de bruidschat hoe sterker de positie van de vrouw vis-à-vis haar schoonfamilie. De hoogte van de bruidschat vormt een bron van conflict en kan leiden tot het gebruik van geweld tegen de vrouw voor wie te weinig werd betaald. Er is nog steeds veel huiselijk geweld tegen vrouwen en het wordt nog steeds als het recht van een man gezien om zijn vrouw te slaan.

Vrouwen die hoofd van een huishouden zijn, zoals weduwen, zijn nog steeds erg afhankelijk van hun eigen familie, vooral hun broers, om te overleven. Het is moeilijk voor deze vrouwen om zelfstandig economische activiteiten te ondernemen. Meestal gaan hun kinderen werken. De mogelijkheden van deze vrouwen zijn beperkt. Als ze betaald werk vinden worden ze als vrouw onderbetaald.

Vrouwen en mannen hebben een verschillende tijdsbesteding. Vrouwen hebben vrije tijd na de lunch, de mannen aan het eind van de middag en in de avond. Vrouwen zijn in toenemende mate betrokken bij NGO activiteiten. Deze activiteiten en de werkzaamheden van vrouwen in de groenteteelt en in de zorg voor het vee verzwaren hun werklast. Dit gaat ten koste van hun vrije tijd en van de tijd die ze aan zorg voor de kinderen kunnen besteden. Tijdsbesteding heeft ook een seizoensdimensie. Na de oogst kunnen mannen zich ontspannen, terwijl vrouwen actief zijn in de verwerking van de opbrengsten. Het traditionele beeld van mannen die na de oogst bij elkaar zitten en nieuwtjes uitwisselen terwijl ze hun waterpijp roken, is evenwel steeds minder te zien.

Mannen nemen doorgaans de beslissingen in de economische sfeer, hoewel vrouwen nu wel hun mening kunnen geven. Vrouwen nemen nu ook meer besluiten in reproductieve aangelegenheden, maar ze hebben nog steeds weinig toegang tot moderne medische voorzieningen. Hoewel vrouwen zich bewust zijn van de vele praktische behoeften die ze hebben, zijn ze zich minder bewust van de veranderingen die nodig zijn om hun strategische positie te verbeteren. Tegelijkertijd zijn steeds meer ouders zich bewust van het belang van scholing voor meisjes en is de toenemende participatie van meisjes in primair en secundair onderwijs een belangrijke stap vooruit.

Het onderzoek wijst uit dat voedselzekerheid van huishoudens samenhangt met de wijze waarop een huishouden in zijn levensonderhoud voorziet en van kenmerken van het huishouden, zoals de afhankelijkheidsratio. Het blijkt ook dat er op individueel niveau nog steeds sprake is van ongelijke toegang tot goed voedsel van mannen en vrouwen. Met betrekking tot de rol van sociaal kapitaal voor het overleven van arme huishoudens moet geconcludeerd dat de mensen die dit het meeste nodig hebben er het minst over beschikken.

CURRICULUM VITAE

Ahmed Ali was born on 25th January 1959 in Narayanganj, Bangladesh. He completed his BSc. (Hons.) in Soil Science in 1979 (held in 1981) and MSc. in Microbiology in 1981 (held in 1983) from the University of Dhaka, Bangladesh.

He started his carrier in July 1983 as a Microbiologist in a FAO project at Bangladesh Agricultural Research Institute (BARI). Then he worked at Institute of Public Health (IPH) on Malaria in a project of Bangladesh Medical Research Council (BMRC) followed by at CONCERN (an Irish voluntary organization) in Mymensingh. From 1985 to 1988 he worked as a microbiologist and laboratory in-charge for Dhaka Water Supply and Sewerage Authority (DWASA).

In 1988 he got an admission in Masters Program in Tropical Medicine at Mahidol University, Bangkok, Thailand and completed his course in 1990.

Since 1991 he was employed at BRAC's Research and Evaluation Division (RED) as a Nutritionist. He was involved in research on public health and development issues. In 1997 he joined in a resettlement project as Project Manager in the same division. He was engaged in compensating the people affected by induced erosion as a result of river training work for the Januma Multipurpose Bridge construction under the Januma Multipurpose Bridge Authority (JMBA).

In 2001 he obtained a sandwich fellowship from the RESPONSE project to start his PhD program with Sociology of Consumers and Households group at the Wageningen University and Research Center (WUR). He was busy with JMBA project until joining his PhD program in the Wageningen University and Research Center. Last February he joined the BRAC Health Program (BHP) where he is working for the National Nutrition Program (NNP).

He is married and lives in Dhaka.

TRAINING AND SUPERVISION PLAN

Name of the course	Department/Institute	Year	Credits
I. General part			
Social Science and Methods	MGS	2001	1
Techniques for Writing and presenting a Scientific Paper	MGS	2001	1
(min. 2, max. 6 credits)		Subtotal part I	2
II. Mansholt-specific part			
Mansholt Introduction course	MGS	2001	1
Mansholt Multidisciplinary Seminar	MGS	2004	1
Presentation of Final PhD Thesis Proposal	MGS	2002	1
Seminar presentation at IFPRI, Washington DC	FCND, IFPRI Washington DC	2002	1
Second International NHF workshop 1-7 May 2005 Hanoi, Vietnam	Neys-van Hoogstraten Foundation	2005	1
(min.4, max. 10 credits)		Subtotal part II	5
III. Discipline-specific part			
Pathways for Agricultural Intensification	MGS	2001	2
Social Theory and Environment	SENSE	2001	4
Gender Studies in Agriculture for MSc	SCH (C450-209)	2001	3
Agro-ecological Approach and Rural Development	PE&RC	2001	1
Ecological Anthropology	RSO (C050-243)	2001	4
Sociology of Households and Livelihoods	SCH (Tutorial)	2001	3
Advance Farm Household Economics	DEC (D100-220)	2002	4
Oral History and Life histories	Netherlands Research School of Women's Studies NOV, Amsterdam	2002	3
(min. 9 credits)		Subtotal part III	24
(min. 20 credits)		TOTAL	31

List of errors

Page 99 Table 5.3 At the heading of the table – 2nd row
Typed as “SD” It should be “SE”

Typed as “Percent of total income from”.
It should be “Difference in percent income from”

Durbin-Watson stat for post-flood period
Typed as “1.171” It should be “1.711”

Page 100/101 Table 5.4 T-stat (significance level)

	Typed as	Should be
Total income	-3.178**	-3.178***
Fish farming	1.204**	1.024
Open water fishing	2.213***	2.213*

Significant at * (0.1), ** (0.05), *** (0.01) (2-tail sig.)

	Typed as	Should be
Agri-equip. rent	.943*	.943
Asset sate	1.160*	1.160
Food for education	2.563***	2.213**

Page 124 Table 7.2 heading of table (first column)
Typed as “Livelihood portfolio”. It should be “Economic status”.

Page 172 Table 8.4 (continued) line no. 1
Typed as

- milk – from own production or purchase from neighbors or the market borrow food from kin/neighbors

It should be

- milk – from own production or purchase from neighbors or the market
- borrow food from kin/neighbors

Page 173 Section 8.8.1 line no. 2
Typed as “household security”
It should be “household food security”

Page 174

Table 8.6 Determinants of individual food security: regression results (linear OLS)

Variables	Pre-flood period			Post-flood period		
	Co-efficient	SE	T-stat	Co-efficient	SE	T-stat
HH level per capita non-staple calorie intake	.889	.020	44.027***	.937	.019	50.626***
Sex of the member	64.247	5.979	10.745***	59.837	5.195	11.519***
Age of the member	2.830	.897	3.155***	-.334	.693	-.482
Age square	-.035	.011	-3.202***	.006	.008	.678
Height	.339	.356	.952	.367	.326	1.126
Weight	2.663	.606	4.397***	1.122	.483	2.321**
Constant	-173.388	31.063	-5.582***	-102.308	31.390	-3.259***
Adjusted R square	.774	-	-	.779	-	-
Durbin-Watson stat	2.241	-	-	2.296	-	-

Significant at * (0.1), ** (0.05), *** (0.01)

Dependent variable = individual non-staple calorie intake.

Page 175 section 8.9.2 Nutrient intake differences between the pre- and post-flood situation should be as follows:

The results show that except for vitamin A, both male and female adults had significantly less nutrient intakes during the post-flood period compared to the pre-flood period (Table 8.8). No significant difference in nutrient intakes among school boys and girls (Table 8.9). The pre-school boys consumed significantly more total and staple calories, total protein and total iron, while girls consumed significantly more total calorie, protein iron and vitamin A during the post-flood period compared to the pre-flood period. The better situation in nutrient intake by pre-school children (both boys and girls) suggests that parents might have cut down their food intake in favor of their pre-school children and siblings (Table 8.10). Both male and female household heads compromised their nutrient intakes during the post-flood period than the pre-flood period (Table 8.11).

Table 8.8 Food intake differences between pre- and post-flood periods for adults

Variables	Male		T-stat	Female		T-stat
	Pre-flood	Post-flood		Pre-flood	Post-flood	
	Mean (SD)	Mean (SD)		Mean (SD)	Mean (SD)	
Calories						
Total	2955.69 (635.12)	2690.96 (592.87)	6.040***	2205.53 (452.59)	2057.29 (487.75)	4.475***
Staple	2478.79 (590.20)	2303.61 (545.62)	4.322***	1872.26 (403.05)	1770.77 (428.04)	3.468***
Non-staple	476.90 (185.83)	378.35 (174.71)	6.958***	333.28 (143.57)	286.52 (131.89)	4.831***
Sources of calorie						
• Plant	402.90 (154.20)	329.19 (157.38)	6.611***	290.19 (125.04)	247.74 (116.77)	4.997***
• Animal	74.00 (62.93)	58.15 (48.93)	3.965***	43.08 (34.92)	38.78 (40.33)	1.618
Total protein	68.07 (15.69)	62.29 (14.56)	5.356***	50.05 (11.16)	47.36 (12.40)	3.244***
Total fat	20.79 (7.93)	17.57 (7.60)	5.800***	15.44 (7.70)	13.14 (5.48)	4.917***
Total iron	10.28 (3.145)	9.58 (3.25)	3.043***	7.72 (2.33)	7.54 (2.75)	.963
Vitamin A	730.52 (428.69)	703.38 (581.85)	.735	617.30 (361.15)	638.38 (563.79)	-.629

Significant at *** (0.01) (2-tail sig.)

Table 8.9 Food intake differences between pre- and post-flood periods for school children

Variables	Boys		T-stat	Girls		T-stat
	Pre-flood	Post-flood		Pre-flood	Post-flood	
	Mean (SD)	Mean (SD)		Mean (SD)	Mean (SD)	
Calories						
Total	2101.82 (617.62)	2033.44 (609.97)	1.256	1811.61 (480.31)	1752.73 (491.29)	1.217
Staple	1774.11 (533.38)	1710.44 (543.35)	1.334	1548.07 (416.65)	1487.11 (477.92)	1.414
Non-staple	327.70 (167.30)	323.00 (156.33)	.327	263.54 (125.32)	265.62 (134.89)	-.161
Sources of calorie						
• Plant	278.71 (139.99)	274.41 (140.37)	.345	226.86 (108.11)	226.57 (113.92)	.026
• Animal	49.00 (42.96)	48.58 (40.51)	.111	36.68 (30.66)	39.06 (41.34)	-.653
Total protein	47.37 (15.11)	46.61 (14.65)	.573	40.51 (11.74)	39.79 (12.28)	.599
Total fat	14.33 (7.42)	13.72 (7.46)	.924	11.92 (6.36)	11.62 (6.89)	.449
Total iron	6.96 (2.90)	7.13 (2.97)	-.663	5.99 (2.38)	5.94 (2.05)	.191
Vitamin A	523.12 (471.91)	529.23 (641.30)	-.123	461.38 (385.82)	473.29 (345.02)	-.328

Table 8.10 Food intake differences between pre- and post-flood periods for pre-school children

Variables	Boys			Girls		
	Pre-flood	Post-flood	T-stat	Pre-flood	Post-flood	T-stat
	Mean (SD)	Mean (SD)		Mean (SD)	Mean (SD)	
Calories						
Total	1028.60 (354.44)	1429.03 (324.30)	-3.303***	970.04 (388.28)	1202.91 (404.84)	-1.741*
Staple	811.46 (329.98)	1163.90 (301.46)	-3.124***	779.70 (365.91)	985.83 (370.60)	-1.642
Non-staple	217.14 (138.87)	265.13 (110.27)	-1.028	190.36 (1229.37)	217.09 (101.09)	-.620
Sources of calorie						
• Plant	165.19 (93.31)	208.12 (119.54)	-1.267	158.76 (122.36)	195.95 (90.38)	-.917
• Animal	51.95 (65.81)	57.01 (43.82)	-.232	31.60 (32.61)	21.14 (22.22)	.973
Total protein	23.39 (9.18)	32.66 (6.46)	-3.034***	21.01 (9.16)	28.11 (9.88)	-2.240**
Total fat	8.41 (6.06)	10.40 (2.22)	-1.019	9.27 (11.00)	9.74 (5.01)	-.130
Total iron	3.45 (1.70)	5.13 (1.69)	-2.864***	2.98 (1.42)	4.39 (1.72)	-2.801***
Vitamin A	313.67 (505.67)	335.81 (226.98)	-.135	202.60 (150.75)	284.64 (133.53)	-1.613

Significant at * (0.1), ** (0.05), *** (0.01) (2-tail sig.)

Table 8.11 Food intake differences between pre- and post-flood period according to household headship

Variables	Male household heads			Female household heads		
	Pre-flood	Post-flood	T-stat	Pre-flood	Post-flood	T-stat
	Mean (SD)	Mean (SD)		Mean (SD)	Mean (SD)	
Calories						
Total	2900.11 (613.30)	2655.90 (588.10)	4.812***	2035.60 (425.70)	1655.22 (511.07)	2.287**
Staple	2428.84 (571.52)	2260.88 (504.89)	3.599***	1724.97 (340.19)	1427.52 (442.06)	2.133**
Non-staple	471.27 (181.24)	395.02 (174.20)	4.956***	310.63 (137.73)	227.70 (108.40)	1.893*
Sources of calorie						
• Plant	395.56 (144.81)	335.68 (155.95)	4.598***	280.77 (125.99)	190.19 (99.02)	2.261**
• Animal	75.71 (68.45)	59.34 (49.30)	3.170***	29.86 (19.99)	37.50 (39.21)	-.695
Total protein	66.46 (15.05)	61.97 (13.95)	3.580***	48.23 (11.11)	39.14 (13.03)	2.124**
Total fat	20.80 (8.03)	18.17 (8.14)	3.760**	13.20 (5.01)	10.72 (3.76)	1.585
Total iron	9.96 (2.85)	9.70 (3.11)	1.018	8.29 (3.10)	6.24 (2.86)	1.944*
Vitamin A	709.22 (394.41)	682.66 (495.70)	.685	772.96 (506.25)	492.33 (336.55)	1.847*

Significant at ** (0.05), *** (0.01) (2-tail sig.)



Regional Food Security
Policies for Natural
Resource Management
and Sustainable Economies

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