GENDER DISAGGREGATED LIVELIHOOD STATUS OF FARM HOUSEHOLDS IN CHAPAI NAWABGANJ DISTRICT OF NORTHWEST BANGLADESH

MS THESIS

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MYMENSINGH

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A Thesis

By

MD. ROKIBUL HASAN
Examination Roll No.:16AEP JD-32M
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ABSTRACT

Agriculture remains the primary source of livelihood for the rural households in Bangladesh. The research was conducted to evaluate gender disaggregated livelihood status of farm households in Chapai Nawabganj district of Northwest Bangladesh. A total of 120 farmers were surveyed from Nachole upazila under Chapai Nawabganj district for collecting necessary data and information. Data were collected during February-April 2018 through a semi-structured interview schedule. Firstly, the socioeconomic characteristics of the farmers were assessed through some descriptive statistics. The results show that the majority of farmers in the areas are over 30 years and married. Most of them are educated up to primary level. Average household size of the farmers found comparatively higher than the national average of 4.5. Farming is the main occupation where each and every respondent are somehow related to agriculture and farming. To document the livelihood scenario in the research area, a total of 23 livelihood assets were identified from the data set and broadly grouped into five groups of capitals through using the asset pentagon, consisting of human capital, physical capital, natural capital, social capital and financial capital. The result presents a gender disaggregated livelihood scenario by differentiating the portion and contribution for male and female in five livelihood capital assets. The results reveal a significant difference and power imbalance (ownership and access) between male and female in rural household livelihoods where female entity are mostly deprived, have more work burden, and faced many demographic, social, economical, cultural and institutional constraints as compared to men. However, sustainability of a household livelihood depends on rights of both men's and women's access to and control over resources and services. Therefore the total livelihood is disrupted and results to a comparatively low standard of living. The major problems faced by the farm households include lack of good quality inputs, lack of financial assets, lack of transportation and storage facilities, lack of quality seed, gender discrimination, lack of extension service, etc. Considering the research findings, some solutions have been suggested and may be adopted. These include producing skilled manpower for farm practices, promoting gender equality and empowerment of women, raising awareness and removing unemployment problem, water resource management, proper implementation of input support and extension services, and providing technical training programs by different government and non-government organizations to enrich the knowledge of the farmers for healthy and sound livelihood.

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ABBREVIATIONS

ADB	: Asian Development Bank
BAU	: Bangladesh Agricultural University
BBS	: Bangladesh Bureau of Statistics
CSIRO	: Commonwealth Scientific and Industrial Research Organisation
DFID	: Department for International Development
et al.	: Et alia (and others)
etc.	: Etcetera
GDP	: Gross Domestic Product
GOB	: Government of Bangladesh
GSS	: Ghana Statistical Service
HIES	: Household Income and Expenditure Survey
ICRA	: International Centre for development oriented Research in Agriculture
Kg.	: Kilogram
LVI	: Livelihood Vulnerability Index
MoF	: Ministry of Finance
MS	: Master of Science
No.	: Number
NRI	: Natural Resources Institute
pp.	: Page
SDIP	: Sustainable Development Investment Portfolio
SL	: Sustainable Livelihood
SLA	: Sustainable Livelihoods Approach
Tk.	: Taka
USDA	: United States Department of Agriculture

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The livelihood of rural Bangladesh is agriculture-centered. Due to its very fertile land and favorable weather, varieties of crops grow abundantly in this country. The agriculture sector plays pivotal role on strong basis for economic development of Bangladesh. Groundwater is one of the most valuable natural resources and plays an important role in the development process of the country. Groundwater-irrigated agriculture is crucial in poverty reduction that results an enormous impact on rural livelihood. About 75 percent of cultivated land is irrigated by groundwater and the remaining 25 percent by surface water (Zahid, 2015). Historically, agriculture sector is remarkable in the northwest area. So it is necessary to determine the socio economic condition of the region and how the people of the region make their livelihood and find out the gender dynamics of livelihood capitals of the households as well as their problems that they faced in their everyday life. In the past two and a half decades, social scientists have been concerned with male and female-headed households as a consequence of differences in the living standards of these two types of households (Chant, 2003).

In almost every country, women and men have different means for access to critical economic assets andvarying power to make choices that affect their lives, as a consequence of the state of gender relations that exists in a given society. Many of the literatures indicate gender inequality and lack of equity in terms of livelihood resource allocation and service distribution as among key determinants that suppress sustainable household livelihood improvement in rural areas of the country. The promotion of equitable men's and women's access to natural and economic resources and social services requires specific actions to address gender disparities (FAO Strategic Framework 2000-2015, Rome, Italy, as cited in Okali C., 2006). A livelihood is much more than a job as it covers a whole range of things people do to make a living. Most people specifically in the rural areas obtain their

means of livelihood from their immediate environment. Livelihood strategy is used to express to the combination of activities that household members engage in as well as the choices they make for achieving livelihood goals like as provision of food, cash and other goods to meet household needs. The concept of livelihood is the link between assets, activities and income as well as the institutional role in determining the use of and returns to assets. Ellis (2000), defines a livelihood as comprising the assets (natural, physical, human, financial and social capital), the activities (which may include crop production, livestock production, self employment, farm labor, non-farm labor) and access to these mediated by institutions and social relations that together determine the living gained by an individual or farm household. The livelihood approach has played a significant role in highlighting the multiple activities undertaken by rural households, the importance of assets in determining the capacity to undertake different activities, the dynamic nature of the actions of rural households and the link between the diversification of assets and activities (Barrett and Reardon, 2000).

Evidence from developing countries states that rural farm households figure on a number of assets and employ multiple activities to generate income. In recent years, there has been increasing emphasis within the rural development literature on what is referred to as rural livelihood and livelihooddiversification. There are significant differences in livelihood opportunities and outcomes between women and men in these rural areas. Although the differing roles and responsibilities between women and men vary from country to country and within countries reflecting differences in economic, social and cultural forces, some important generalizations on gender differences in rural livelihoods were made including gender differences: in gender roles in agricultural production and food security, in household work burden and decision making, in access to land and water rights, in access to credit and income, and in access to education, training and extension services (Mutangadura G. B., 2005).Specifically, this research attempts to outline the participation and of male and female of the region based on livelihood capitals with the help of the UK Department of International Development's Sustainable Livelihoods Framework

(DFID, 1999) and observes the sustainability condition of the selected households of Chapai Nawabganj region.

1.2 Farm and farmers' livelihood

Bangladesh's rural economy and specifically agriculture have been powerful drivers of poverty reduction in Bangladesh since 2000. Indeed, agriculture accounted for 90 percent of the reduction in poverty between 2005 and 2010. More than 70 percent of Bangladesh's population and 77 percent of its workforce lives in rural areas. Nearly half of all of Bangladesh's workers and two-thirds in rural areas are directly employed by agriculture, and about 87 percent of rural households rely on agriculture for at least part of their income (The World Bank).

Being an overwhelmingly agricultural economy, scope and opportunities in the sector is limited and offer little hope to Bangladesh's poorest people. Average farm sizes have fallen steadily to the point where typical holdings are now only acceptable to meet almosthalf of a household's livelihood needs. Therefore, traditional reliance of rural livelihoods on income from agricultural is getting lower.

Since there is no scope to increase the area under cultivated land, the only way to increase employment, farm production and income and thereby to improve livelihood of the farming community is to increase the productivity of land through integrated farming. It is a way to supply necessary commodities to the households and to maximize farm income as well as to maintain environment friendly farming. A livelihood includes the capabilities, assets (stores, resources, claims and access) and activities required for a means of living: a livelihood is sustainable which can cope with and recover from stresses and shocks, maintain or enhance it capabilities and assets and provide sustainable livelihood opportunities for the next generation and which contributes net benefits to other livelihoods at the local and global levels in the long and short term.

It is important to note that Bangladesh's agricultural is the livelihood of the farmers. It has been observed based on six districts that the average total income of the integrated farms was Tk. 124839 and for mixed farms, it was Tk. 99641. The income figure of integrated farming is higher than the national average of Tk. 115776 (BBS, 2010). Considering the farming systems, farmers earned highest annual income (Tk. 155892) under integrated farming and in case of mixed farming; farmers got highest annual income (Tk. 138542) than other farming systems (Khan, 2015). This result is slightly similar with Uddin and Takeya (2005) who found that income from non-agricultural enterprises is higher for farmers in conventional farming compared to those of integrated farming in respect of farm sizes. It was calculated that change in annual income of the integrated farms was increased by the amount of Tk. 25198.

Bangladesh has long been considered to be one of the most vulnerable countries in the world given human-induced climate change and subsequent sea-level rise. It is estimated to be the third most vulnerable country in terms of population exposed to sea level rise. Bangladesh is also a hub of hydro meteorological disasters including cyclones, tidal surges, floods, drought, saline water intrusion, water logging, and land subsidence. In a recent study, the agriculture-based livelihood and poverty simulations highlighted the critical significance of debt through informal and formal loans set at such levels as to persistently undermine the well-being of agriculture-dependent households. Simulations also indicated that progressive approaches to agriculture (i.e. diversification) might not provide the clear economic benefit from the perspective of pricing due to greater susceptibility to climate vagaries. The livelihood and poverty results highlighted the importance of the holistic consideration of the human–nature system (Lazar, 2015).

1.3 Purpose of the study

This research explores the socio economic condition of a highly water stressed region of Bangladesh (i.e. Nachole of Chapai Nawabganj district) and how the people of the region make their livelihood; and find out the gender dynamics of livelihood capitals

of the households that help to understand the gender differences in resource endowments.

1.4 Objectives of the study

The overall objective of this study is to draw the total livelihood pattern of male and female of the study area based on their resource endowments.

The specific objectives are:

1. To assess the socioeconomic characteristics of the sample farmers.

2. To examine the gender dynamics of livelihood capitals of the sample households.

3. To find out the problems that affects rural livelihood in the study area.

1.5 Justification of the study

The northwest region of Bangladesh is being continuously suffered with its water stressed and highly tempered environment. The people who are living in rural side of the region are passing their lives with huge difficulty. Therefore, their livelihood is challenging. This works as an inspiration to the researcher to see how challenging their life is compared to the average life style of people in Bangladesh.

Majority of the poor in northwest region live in the rural area rely on agricultural production. Agriculture is the predominant profession of the population. This is the major source of their income. There have been many initiatives from governmental and non-governmental organizations for agricultural development. The main objective of these initiatives was to promote sustainable agricultural development for a better standard of living. Most of these initiatives have been unsuccessful due to lack of understanding social, financial and ownership factors that influence the decision making process of the rural farm households. Exploring the importance of community level factors particularly, social and physical variables in the

participation will help to understand their livelihood among rural farm households and in this case for the region of Chapai Nawabganj.

The study will help to understand the gender disaggregation in livelihood condition in the study area. Moreover, remedies will be suggested based on the research findings on how the condition can be improved than prior so that the households can run more smoothly and livelihood can be survived with standard of living. It will also play an important role in policy implications for government and the people. If the Government, Nongovernmental organizations, individuals and other cooperate organizations decide to invest resources in poverty alleviation or rural development, it is essential to know how these capitals could influence livelihood phenomena especially among rural farm households so as to maximize the objectives, hence this research study.

1.6 Definition of key terms

It is important to define some key concepts that have been used in this study in order to clarify the context within which they are being used. These concepts are:

i) Household:

The use of the term 'household' in this study refers to a group of related or unrelated persons, who live together in the same house or compound, who recognize one adult male or female as the household head, share the same house keeping arrangements and are catered for as one unit (Ghana Statistical Service, 2007).

ii) The head of household:

This is the person recognized as the head by members of the household and who is usually responsible for the upkeep and maintenance of the household (Ghana Statistical Service, 2007).

iii) Asset:

Asset is used in this study to refer to the tangible and intangible resources that a household owns. The tangible resources for instance, include jewellery, woven textiles, electrical appliances, income/cash, and savings among others, while the intangible assets on the other hand, refer to the educational attainments or skills of household members as well as households' ability to secure assistance such as food, money, and loans, among others from family members, neighbors, friends, and social groups.

iv) Livelihood:

Livelihood is used in this study to mean a household's or people's capabilities, and assets such as material and social assets and their activities that are necessary to make a living (Chambers and Conway, 1992; Scoones, 1998).The term livelihood comprises the assets (natural, physical, human, financial and social capital), the activities and the access to these assets (mediated by institutions and social relations) that together determine the living gained by an individual or household or a community. A livelihood comprises people, their capabilities and their means of living, including food, income and assets. Tangible assets are resources and stores, and intangible assets are claims and access.

v) Livelihood strategy:

Livelihood strategy is used in this study to refer to the numerous or combination of activities household members engage in as well as the choices they make to achieve livelihood goals such as the provision of food, cash and other goods to satisfy household needs (Chambers & Conway, 1992). In this sense, the strategies available, choices made and activities undertaken include a particular activity, a set of activities or direct use of assets to produce outcomes (Kim, 2014).

vi) Livelihood assets:

Scoones (1998) states that the basic material and social, tangible, and intangible assets that people use for constructing their livelihoods are conceptualized as

different types of "capital" to stress their role as a resource base "from which different productive streams are derived from which livelihoods are constructed" (Scoones, 1998). Livelihood resources and assets are the inputs to the livelihood system (Niehof and Price, 2001) and resources can be seen as immediate means needed for livelihood generation. It can be depicted as both the natural and social environmental possessions available to an individual or household to be able to make a living. A key component in the sustainable livelihoods approach, they are the assets on which livelihoods are built. They can be divided into five core categories (or types of capital): human capital, natural capital, financial capital, social capital, and physical capital. Carney (1998) and ICRA (2012) both suggest that there are five dominant forms of livelihood assets and these are:

vii) Natural capital:

The natural resources that stock from which resource flows useful to livelihoods are derived. These natural resources are made up of air, land, soils, minerals, plants and animal life that people use. Natural capital can be measured in terms of quantity and quality (for example acreage, diversity and fertility). It is important not only for its environmental benefits, but also because it is the essential basis of many rural economies in providing food, building material, fodder, and so forth. (Natural Resources Institute, 2000). Many of the factors identified as causes particularly of rural poverty reflect declining access to natural capital (Korsi*et al.*, 2001).

viii) Social capital:

The horizontal and vertical social resources (networks, membership of groups, relationships of trust, access to wider institutions of society) upon which people draw in pursuit of their livelihood. The Natural Resources Institute (NRI, 2000) defines social capital as that part of human resources determined by the relationships people have with others. These relationships may be between family members, friends, workers, communities and organizations, and can be defined by their purpose and qualities such as trust, closeness, strength and flexibility. Social capital is important for its intrinsic value, and also because it increases well-being;

facilitates the generation of other capital; and services to generate the framework of the society in general, with its cultural, religious, political and other norms of behavior. Korsi*et al.* (2001) again state that lack of social capital, or social exclusion, can be highlighted as a significant characteristic of poverty.

ix) Human capital:

The skills, knowledge and good health are important to the ability to pursue livelihood strategies. Human capital is therefore that part of human resources determined by people's qualities such as personalities, attitudes, aptitudes, skills, knowledge and physical, mental and spiritual health. Human capital is important, not only for its intrinsic value, but also because all other capital assets cannot be used without it (Natural Resources Institute, 2000)

x) Physical capital:

The basic infrastructure (transport, shelter, water, energy, and communications) and production equipment are means which enable people to pursue their livelihoods. Physical capital is derived from the resources created by people, such as buildings, roads, transport, drinking water, electricity, communication systems among others, as well as equipment and machinery for producing further capital. Physical capital is important not only for meeting people's needs directly, but also for providing access to other capital via transport and infrastructure (Natural Resources Institute, 2000). Physical capital or assets such as housing type, sanitation, sources of drinking water and cooking are also often used as proxy indicators of household well-being (Korsi*et al.*, 2001).

xi) Financial capital:

The financial resources available to the people (whether savings, supplies of credit, regular remittances or pensions) and which provide them with different livelihood options (Natural Resources Institute, 2000). It is often (by definition) the most limiting asset of poor people, but it is one of the most important, in that it can be

used to purchase other types of capital, and also to have influence (good and bad) over other people.

xii) Sustainable livelihood:

According to Chambers and Conway (1992), the sustainability of livelihood raises many questions and these fall into two groups: whether a livelihood is sustainable environmentally, in its effects on local and global resources and other assets and whether it is sustainable socially, that is, able to cope with stress and shocks, and retain its ability to continue and improve. Sustainability is thus a function of how assets and capabilities are utilized, maintained and enhanced so as to preserve livelihoods.

xiii) Sustainable livelihood framework (SLF):

According to DFID (1999) the livelihoods framework is a tool to improve our understanding of livelihoods, particularly the livelihoods of the poor. It was developed over a period of several months by the Sustainable Rural Livelihoods Advisory Committee, building on earlier work by the Institute of Development Studies (amongst others).

1.7 Outline of the study

This study has been divided into seven chapters. After this introduction, review of literature is presented in Chapter two. Chapter three deals with the research methods of the study. Chapter four deals with socioeconomic characteristics of the sampled households in the study area. Livelihood assets scenario is presented in chapter five with critical discussions. Chapter-six deals with the problems that affect rural livelihood. Finally, a summary, solutions and conclusion are presented in Chapter seven.

CHAPTER TWO

REVIEW OF LITERATURE

2.1 Introduction

This chapter gives a description of what has been published on current topic by accredited scholars and researchers. To accomplish the present study, the following literatures were reviewed that set out in the universe and definitely have relevance with the present study. The review of literature indicates the sustainable livelihoods framework and how it offers an appropriate conceptual lens to examine the interaction between household assets and household livelihood strategies and therefore the relationship of the livelihood capitals and sustainability condition of the study area.

2.2 Literature related to livelihood approach

The 'sustainable livelihoods approach' (SLA) adopts a distinctive perspective on theunderstanding of poverty and how to intervene to betterment of the conditions of the poor. It acknowledges that poverty is a condition of insecurity rather than only a lack of wealth (Meikle *et al*., 2001). Further it recognizes that the circumstances of the poor change constantly, and that they sustain themselves in precarious conditions by employing a variety of assets (Moser, 1998).

Since the 1990s, the sustainable livelihoods approach has become a dominant approach to the implementation of development interventions by major international agencies (Morse *et al*., 2009). Its objective is expected to contribute to the overall goal of povertyeradication. The Brundtland Commission on Environment and Development, Agenda 21, the Social Summit, the Beijing Conference, Desertification Convention and UNIFEM have all incorporated and developed the concept (Meikle *et al*., 2001).

While there is no universal definition of a 'sustainable livelihood', a variety of key features have been ascribed to it by a range of authors. The research will be based on the framework developed by the UK Department for International Development

(DFID), which applies the definition of ´livelihood´ by Chambers and Cornway (1992):

> *"A livelihood comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living; a livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods at the local and global levels and in the short and long-term."*

In the sustainable livelihoods approach, a ´sustainable livelihood´ is defined in terms ofthe ability of a social unit to enhance its assets and capabilities in the face of shocks andstresses over time (Morse *et al*., 2009). It is a ´multiple capital´ approach wheresustainability is considered in terms of available capital (natural, human, social, physical and financial) and an examination of the vulnerability context (trends, shocks and stresses) in which these assets exist. (DFID, 1999) defines livelihoods as ´sustainable´ when they:

> "*are resilient in the face of external shocks and stresses; are not dependent upon external support (or the support itself is economically and institutionally sustainable), maintain the long-term productivity of natural resources and do not undermine the livelihoods of, or compromise the livelihood options open to, others."*

Respectively, the SLA aims at identifying the important assets in livelihoods, their trends over time and space as well as the nature and impacts of shocks and stresses(environmental, economic and social) upon these assets. Based on this

analysis, it further seeks to gain knowledge of the wider context (e.g. political, legal, economic, etc.). Following that, interventions are designed to address any vulnerabilities impeding enhancedlivelihoods (Morse *et al*., 2009).

According to DFID (1999), the SLA has above all to be understood as -

"*a way of thinking about*

the objectives, scope and priorities for development" *and as* "*a way of putting people at*

the center of development, thereby increasing the effectiveness of development assistance".

The central focus of the LVI (Hahn *et al.,* 2009) is to look into various aspects of vulnerability and differences in households' efforts and adaptive capacity to maintainlivelihood (Chambers and Conway, 1992). These differences are found in accessibility to financial, human, social and physical capitals which determinedifferences in households' recovery from disaster, and which further lead to adaptation and livelihood resilience (Cassidy and Barnes, 2012).

Ellis(2000) examined the livelihood as comprising the assets (natural, physical, human, financial and social capital) the activities and the access to these (mediated by institution and social relations) that together determines the livelihood gained by an individual or household. Livelihood diversification is then the process by which households construct a diverse portfolio of activities and assets to survive and improve their standard of living.

According to Scoones(1998), sustainable livelihoods are gained through access to a range of livelihood resources (natural, economic, human, physical and social capitals) which are combined in the pursuit of different livelihood strategies.The fundamental feature of the sustainable framework is an analysis of five different types of assets own by individuals to build their livelihoods that consists of natural, social, human, physical and financial capital (Carney, 1998; Ashley and Carney, 1999; Bebbington, 1999).

Studies by Carney (1998) and DFID (2000) found that household food nutrition and income security can be enhanced by following three intervention strategies: a. Livelihood promotion (improving households) b. Livelihood protection (preventing and erosion of productive assets assisting in their recovery) and c. Livelihood provisioning (meeting food and other essential needs to maintain nutritional levels and save levies). The ultimate goal of any development intervention is to promote sustainable livelihood systems in intervention areas.

The precise frameworks and tools used by different agencies vary (Carney, 1998). However, they all share the same basic concept of sustainable livelihoods, and use a framework that contains the following elements:

An analysis of the causes of vulnerability – shocks and stresses in the economic, social and political context, trends, seasonality, fragility of natural resources among others.

An analysis of assets, at the individual, household and community level, comprising human, social, economic, physical and natural resource assets.

The context within which livelihoods evolve – policies at both micro and macro levels; civic, economic and cultural institutions, both formal and informal; the nature of governance and its processes at all levels in society.

Livelihood strategies, including, but not restricted to, consumption, production and exchange activities.

The resulting livelihood outcome, assessed multi-dimensionally in terms of food and other basic needs security, greater sustainability of the natural resource base, reduced vulnerability and increased income.

According to the Department for International Development (DFID, 2000), the SLA has two key components and these are:

A set of principles to guide action to address and overcome poverty

A framework that helps in understanding the complexities of poverty.

2.3 Importance of gender disaggregated livelihood

(Chambers *et al.*, 1992) had done the analysis of livelihoods and they stated that there are numerous determinants of livelihood strategies. Many livelihoods largely are predetermined by accident of birth. Gender as socially defined is also a widely determinant of livelihood activities. A person may also be born, sensitized and apprenticed into an inherited livelihood as a cultivator with land and tools or as a fisherperson with boat and tackle; and each of these may in turn create a new livelihood(s) in the same occupation. Many livelihoods are also less singular or predetermined. Some people take livelihoods with degrees of desperation, what they do being largely determined by social, economic and ecological environment in which they find themselves. A person may also choose a livelihood, especially through education and migration.

The majority of new livelihood opportunities are still considered to fall under the male domain, including work in the private sector, in small-scale businesses, or at the marketplace. In rural areas, interest of resource poor women in income-generating activities is high and they are involved in various non-farm income activities (ADB, 2001;Zezza, 2007).Rural women are playing pivotal roles in almost every aspect of our society from time immemorial. They have made important contributions in creating access to human, natural, financial, physical and social capital for making their livelihood sustainable (UNIFEM, 1998).

Khan and Rahman (2007) stated that at the individual level, income-generation activities are perceived to be the ultimate liberator, which bring about a positive change to poor women's income and provide not only the financial help to household but also have positive impact on other factors of daily life. Some of the literature indicates that women's income is the key to sources of power and opportunities that may otherwise hinder their lives (Rahman and Naoroze, 2007; Hoque and Itohara, 2008; Fakir, 2008). The involvement of women in income-generation activities changes their attitudes (Ahmed *et al.*, 1997). A number of studies recognize that women's income-generation activities are not only crucial but also an urgent priority to reduce poverty and improving their livelihoods or living

standard (Afrin *et al*., 2008). Niehof and Price (2001) recognized aspects of how a household pursues its livelihood strategies. What men versus women do is in part reflective of their culture, that is, male and female roles are constricted by what is deemed fitting male and female behavior.

The status of a woman comes from her family and while her role includes the maintenance of her family as a social institution and as an economic entity, the decision-making powers and economic control are almost always in the hands of men. Within the family, women's roles in decision making are very low. All decisions regarding income related activities are made by men. Often, women are not able to make any decisions about family matters without male involvement. In the past, even reproductive decisions were made by men (UNICEF, 2001).

Gibson et al. (2004) found that key features of women's livelihoods in Bangladesh are breaking new ground; the situation for women is very dynamic as increases in non-farm work and urbanization of rural life are affecting society more generally. Women's contribution to readymade garment exports and crop production, as well as their contribution to the remittance economy is increasing day by day. However, poor women especially, work in employment that is poorly paid, insecure and often seasonal. From a poverty perspective, the challenges faced by these women are that they make up a huge pool of poor labourers with limited options, low mobility, low status and little security (CARE, 2006).

In spite of some positive outcomes, however, gender inequalities, especially in rural areas with respect to: enjoyment of human rights; political freedom and economic status; land ownership; housing conditions; exposure to violence; and education and health are still major concerns for Bangladesh, as overall, they make women more vulnerable to social, environmental and political changes (Islam, 2009).

2.4 Concluding remarks

The literature reviews mentioned above the described how the livelihood frameworks developed and how these dealt with the community. Some of the studies figured out the livelihood assets (natural, physical, financial, social and natural) and stated the usefulness of using these assets categories in examining livelihoods. Therefore, the present study also follows the asset pentagon in assessing the livelihoods. Another important aspect of livelihoods measurement is gender, which was not adequately addressedin research, especially in Bangladesh. No research was found that examined the livelihoods of farm households by disaggregating gender. To minimize the research gap, this research steps forward in examining gender disaggregated livelihood status where both male and female are properly looked atand analyzed to predict the more actual and definite livelihood scenario of the study area.

CHAPTER THREE

RESEARCH METHODOLOGY

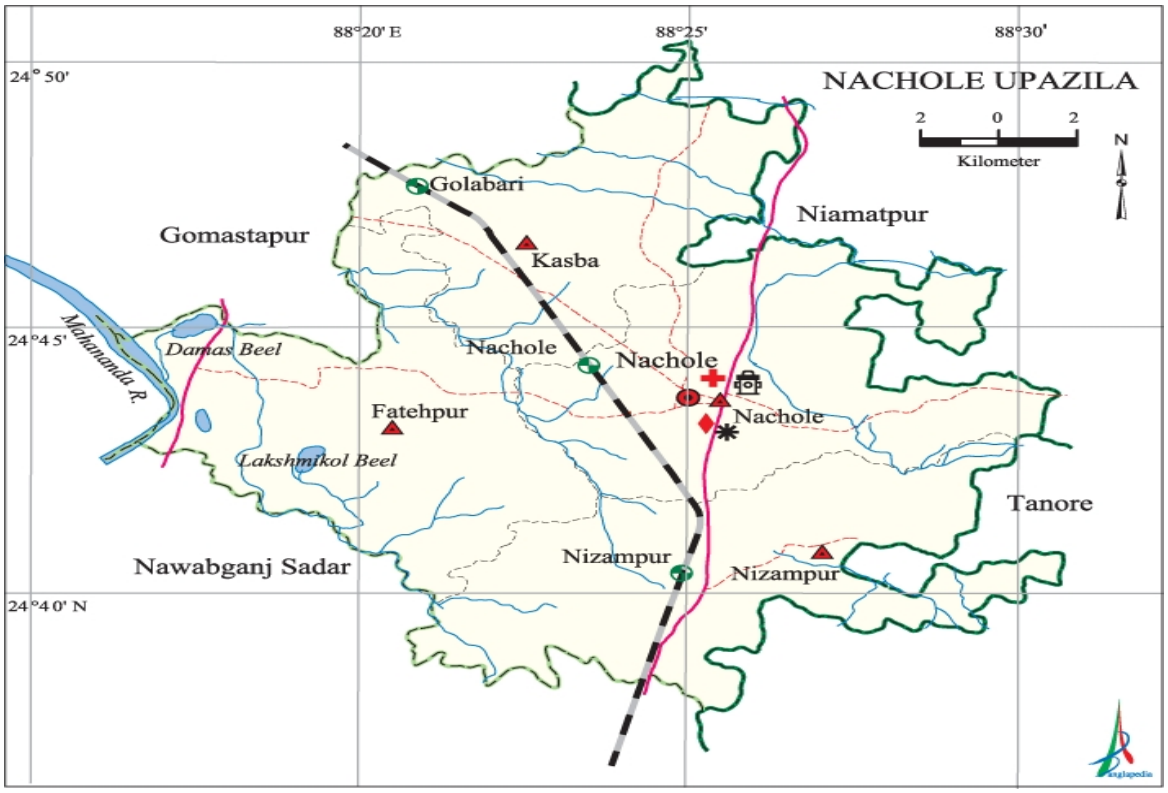
3.1 Prologue

The overview of this study as well as the relevant literature highlighting the conceptual framework were presented in chapter one and chapter two respectively. This chapter discusses the research techniques that were adopted for the study including the study area, research design, sources of data, sampling and sample size and data analysis.

3.2 Selection of the study area

Selection of the study area is one of the major footsteps in farm management study. The area where the survey is to be conducted based on the particular purpose of the survey and the possible cooperation from the respondents. The Nachole upazila of Chapai Nawabganj district is selected to be the study area for the present study. The study area was selected purposively as it is one of the areas of "The Sustaining Groundwater Irrigation for Food Security in the Northwest Region of Bangladesh – SDIP Phase-II" project under which this research has been done. Necessary data are obtained from the area under study in order to fulfill the objectives. Moreover, this research aims to select the study area where multiple crops, livestock and poultry under different farming systems, and also the different non-farm activities are regularly practiced. In this area, besides the farm practices, peoples are also engage themselves in non-farm activities in order to sustain their livelihood practices. Therefore, the research found it as a suitable study site to fulfill its objectives.

Map 3.1: Map of Chapai Nawabganj



Map 3.2: Map of Nachole upazila

3.3Description of the study area

3.3.1 District Chapai Nawabganj

In 1982, then President Hussein Muhammad Ershad converted the administration to the doorstep of the people and transformed the thanas into the upazilas and subdivisions. Due to this step, 5 thanas of Nawabganj were upgraded to Shibganj, Nachole, Bholahat, Gomostapur and Nawabganjsadarupazilas. Nawabganj subdivision was formally declared the district on 1st March 1984. Minister of Health and Population Affairs of Bangladesh Government Major General M. ShamsulHaque inaugurated the district ChapaiNawabganj. Nawabganj district's first deputy commissioner was appointed. K. ShamsulHaque. He served as the Deputy Commissioner from 01.031984 to 08.08.1985. In the face of the demand for the prisoners, on 1st August 2001, the name of the government of Nawabganj was officially changed to ChapaiNawabganj (Bangladesh National Portal, 2018).

3.3.2 Upazila Nachole

Nachole upazila (ChapaiNawabganj district) that covers the area of 283.68 sq km, located in between 24°38' and 24°51' north latitudes and in between 88°15' and 88°21' east longitudes. It is bounded by gomastapur upazila on the north-west, Chapai Nawabganj sadar upazila on the south-west, tanore upazila on the south-east, niamatpur upazila on the north-east. The soil of this region is very congenial to the production of paddy. Nachole thana was formed in 1918 and it was turned into an upazila in 1984. It has 4 union, 201 Mouza and 197 villages. Nachole has a population of 146,627. 72,895 of them are Males and 73,732 of them are female. Males constitute 49.71% of the population, and females 50.29%. This upazila's eighteen up population is 89,267. Nachole upazila has an average literacy rate of 45.5% (7+ years). It has 7 college (including 1 government college), 3 technical college, 34 secondary school (including 1 government school), 77 primary school and 18 madrasas. People are involved with various occupations. The sources of income Agriculture 73.27%, non-agricultural laborer 4.91%, industry 0.29%, commerce 9.38%, transport and communication 1.25%, service 3.54%, construction 0.67%,

religious service 0.09%, rent and remittance 0.08% and others 6.52%. Main agricultural crops are Paddy, wheat, pulse, vegetables. Sources of drinking water may indicate as Tube-well 94.32%, tap 2.41%, pond 0.45% and others 2.82%. 9.77% (rural 7.65% and urban 35.84%) of dwelling households of the upazila use sanitary latrines and 42.19% (rural 42.16% and urban 42.62%) of dwelling households use non sanitary latrines, 48.08% of households do not have latrine facilities (Banglapedia, 2018).

3.4 Research approach

A useful approach (Sustainable Livelihood Framework) was adopted for this study since the research was conducted with rural households whose life and meaningful actions were under study. The approach was therefore an interactive process (Bennett *et al.*, 2004), rather than an exercise of extracting information from the people and this increased the effectiveness of the research and any policy recommendation arrived at is likely to make sense to those affected. The ultimate argument here is that, rural people have in-depth knowledge about their circumstances and livelihood systems and must therefore be assisted to articulate their feelings and problems, and recommend solutions to enhance the relevance and applicability of the research findings (Cornwall and Jewkes, 1995; Bennett *et al.*, 2004).

3.5 Selection of sample

An important part of research work is the selection of sample. Sample is described as a representative part or a single item from a larger whole or group especially when presented for inspection or represented as proves of quality. Sampling is coordinated with the selection of a subset of individuals from a statistical population to measure characteristics of the whole population. Population is the entire pool from which a statistical sample is drawn. Each observation measures one or more properties of observable bodies distinguished as independent objects or individuals. The aim of sampling is to provide various types of statistical information of a qualitative or quantitative nature about the whole by examining a few selected units.

The study employed the multi-stage sampling method. A total of 120 respondents were selected randomly from purposively selected study areas of Ajhoir, Kharibuna, Dewpara villages of Nachole upazila. Since the study collected information on household level activities by gender, presence of spouse of the respondent was ensured to verify the responses from the selected respondent.

3.6 Methods of data collection

Most of the data required for the research were collected from primary sources. Primary data were collected directly through interview with sample respondents by using a semi-structured interview schedule designed for data collection and to some extent observations. The study covered male and female's (mostly male-headed households) access, contributions and participations over rural livelihood resources. The collected data have both qualitative and quantitative types in nature.

Since most of the farmers did not keep any written records of their crop farming, the researcher had to rely on the memory of the respondents. With a view to collect field level primary data from the selected farmers, face-to-face interview method was conducted by the researcher himself. Before interviewing, the selected farmers were contacted with the help of the Sub Assistant Agriculture Officer (Riniara Begum) so that they could give their consent to be interviewed according to their convenience of time. At the time of interviewing, the researcher asked questions systematically and explained the aims and objectives of the research whenever it was felt necessary.

Plate 1: Data collection in research area

Whenever the respondents felt any difficulty in understanding any question, the researcher took utmost care to explicate and elucidate the same properly. After each interview, the questionnaire was checked to be sure that information to each of the item was properly recorded. If there were such items, which were ignored, they were corrected through a revisit.

3.7 Processing and tabulation of data

Before analyzing the data, the data and information collected from field surveys, interviews, discussions and communications were scrutinized, classified, edited and coded. Quantitative data were inputted into computer using Microsoft Excel and tabulated accordingly. Qualitative data were first coded and converted into quantitative type in order for them to be computed and then, the analysis was done. After completing the pre-tabulation task, actual tabulation work was initiated. A list of tables wasconstructed and finally, tabulated data were analyzed on the basis of the objectives of the research.

3.8 Socioeconomic condition of the households

Socioeconomic data were mostly presented in tabular and graphical formation. This representation is simple in calculation and widely used. Moreover these forms are easy to understand. Descriptive statistics like sum, average and percentages followed by some graphical representations were applied to assess the socioeconomic conditions of the households in the study area.

3.9 Sustainable livelihoods framework

This research is guided by the Sustainable Livelihoods (SL) framework as set out by DFID (1999) which places people at the centre of a web of inter-related influences that affect how people make a livelihood. The framework mainly focuses on the resources and livelihood assets to which individuals and households have access and use. The individual components of the framework are described in short below while the sustainable livelihoods framework is shown in Figure 3.1.

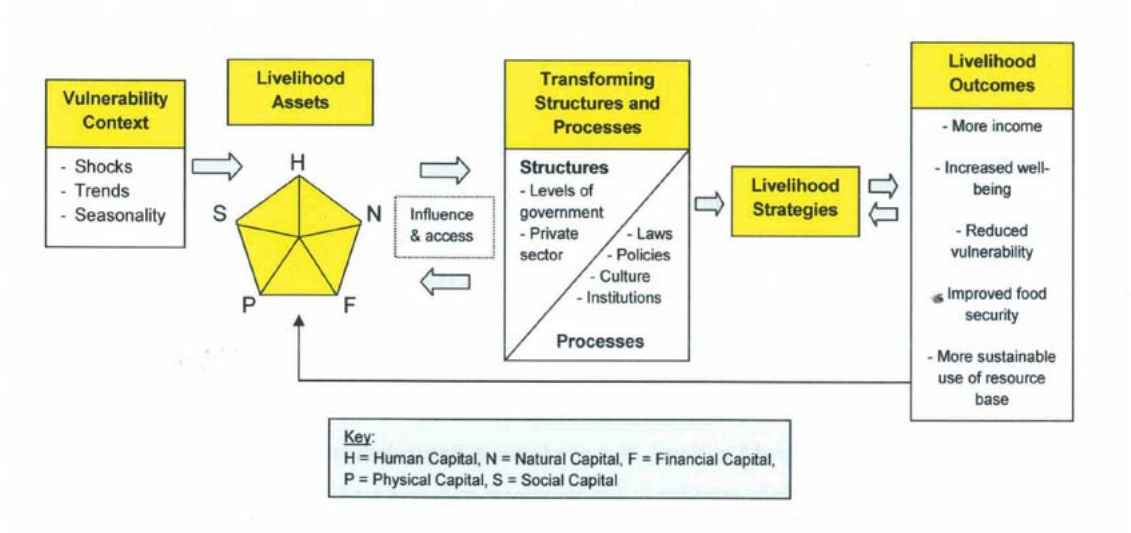


Figure 3.1: Sustainable livelihood framework (DFID, 2000)

The sustainable livelihood framework includes the asset pentagon which is composed of five types of capital namely, human capital, social capital, natural capital, physical capital and financial capital (DFID, 2000). A sustainable livelihood is the outcome of both inter and intra relationship between the components of the capitals. Recently with the increased use of livelihood approaches in development, considerable attention has been given to develop methods for monitoring changes in all aspects of peoples' life which considered not only financial improvement but also socioeconomic impact on livelihoods and social well being of the target group of people (CARE, 2002). The sustainable livelihood framework presents the main factors that affect peoples' livelihood, and typical relationships between these. As it has many dimensions of work, this research focused on the calculation of livelihood assets through asset pentagon.

3.10Asset pentagon and variable under study

The livelihood framework identifies five core asset categories or types of capital upon which livelihoods are built. Increasing access, which can take the form of ownership or the right to use these assets, is a primary concern for DFID in its support of livelihoods and poverty elimination (DFID, 2000). These assets are widely known as "asset pentagon" which is shown in Figure 3.2.

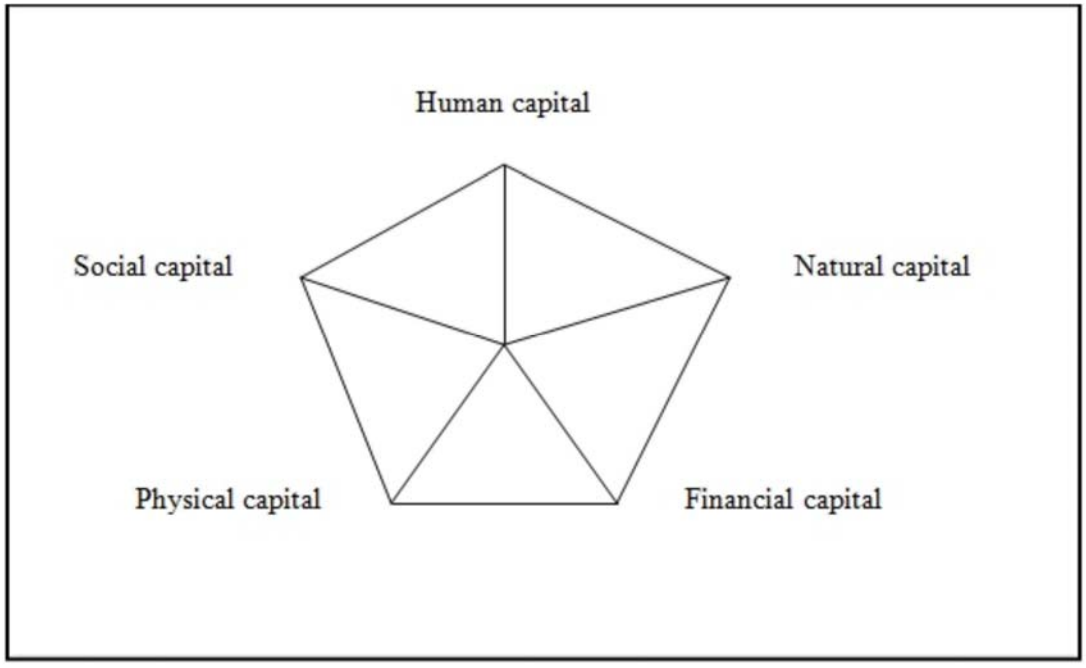


Figure 3.2: **The asset pentagon (DFID, 2000)**

i) Human Capital

Human capital represents the skills, knowledge, ability to labor and good health that together enable people to pursue different livelihood strategies and achieve their livelihood objectives. The identified variables of human capital under the study are:

1. Total number of family members

2. Working family members

3. School going children

4. Land ownership

ii) Physical Capital

Physical capital comprises the basic infrastructure and producer goods needed to support livelihoods. The components to infrastructure usually essential for sustainable livelihoods are affordable transport, secure shelter and buildings,

adequate water supply and sanitation, clean, affordable energy; and access to information (communications). The identified variables of physical capital under the study are:

1. House

2. Electricity

3. Sanitation

4. Pure drinking water

5. Agricultural equipments

6. Household furniture

7. Cooking Fuel

iii) Financial Capital

Financial capital denotes the financial resources that people use to achieve their livelihood objectives. The definition used here is not economically robust in that it includes flows as well as stocks and it can contribute to consumption as well as production. However, it has been adopted to try to capture an important livelihood building block, namely the availability of cash or equivalent that enables people to adopt different livelihood strategies. The identified variables of financial capital under the study are:

1. Saving in bank

2. Cash in hand

3. Formal credit

4. Informal credit

iv) Social Capital

There is much debate about what exactly is meant by the term 'social capital'. In the context of the sustainable livelihoods framework it is taken to mean the social resources upon which people draw in pursuit of their livelihood objectives. These are developed through: networks and connectedness, membership of more formalized groups, relationships of trust, etc. The identified variables of social capital under the study are:

1. Social club

2. Religious institute

3. Political organization

4. Govt. Organization

5. Non Govt. Organization

v) Natural Capital

There is a wide variation in the resources that make up natural capital, from intangible public goods such as the atmosphere and bio-diversity to divisible assets used directly for production. The identified variables of natural capital under the study are:

1. Land

2. Tree plants

3. Livestock

3.11 Problems of households that affect rural livelihood

In the present research, major problems faced by the households were identified. These findings were accomplished on the basis of their perceptions in this context and presented accordingly in a descriptive manner.

3.12 Concluding remarks

Methodology is the most important and vital field in any research work. The success of any research depends to a great extent on how accurately the research methods are chosen for the stated objectives. Therefore, the researcher was very careful to choose the right research methods in narrating the findings adequately.

CHAPTER FOUR

SOCIOECONOMIC CHARACTERISTICS OF THE SAMPLE FARMERS

4.1 Introduction

Socioeconomic feature is an important determinant of the livelihoods. In this chapter, an attempt has been made to analyze the socio-economic characteristics of the sample farmers. Specific characteristics of the households are called socio-economic characteristics of that household. Behavior of an individual was largely determined by his/her characteristics. Information about age distribution, level of education, occupation, types of family, sources of finance, present capital of this business, types of loom by operational status, amount and types of production, reasons of starting this business etc. were collected for this study. A brief description of these characteristics has been presented in this chapter.

4.2 Socioeconomic characteristics of the farmers

4.2.1 Age Distribution

The selected respondents in the study area were classified into five age categories. The first category includes the farmers of 0-30 years old, second category includes 31-40 years old, third category includes 41-50 years old, fourth category includes 51-60 years old and the fifth category includes the farmers of 61 years and above.

Table 4.1: Age distribution of the sample farmers

Age category (years)	No. of respondent	Percent
0-30	18	15
31-40	31	25.83
41-50	32	26.67
51-60	30	25
Above 60	9	7.5

Source: Field survey, 2018

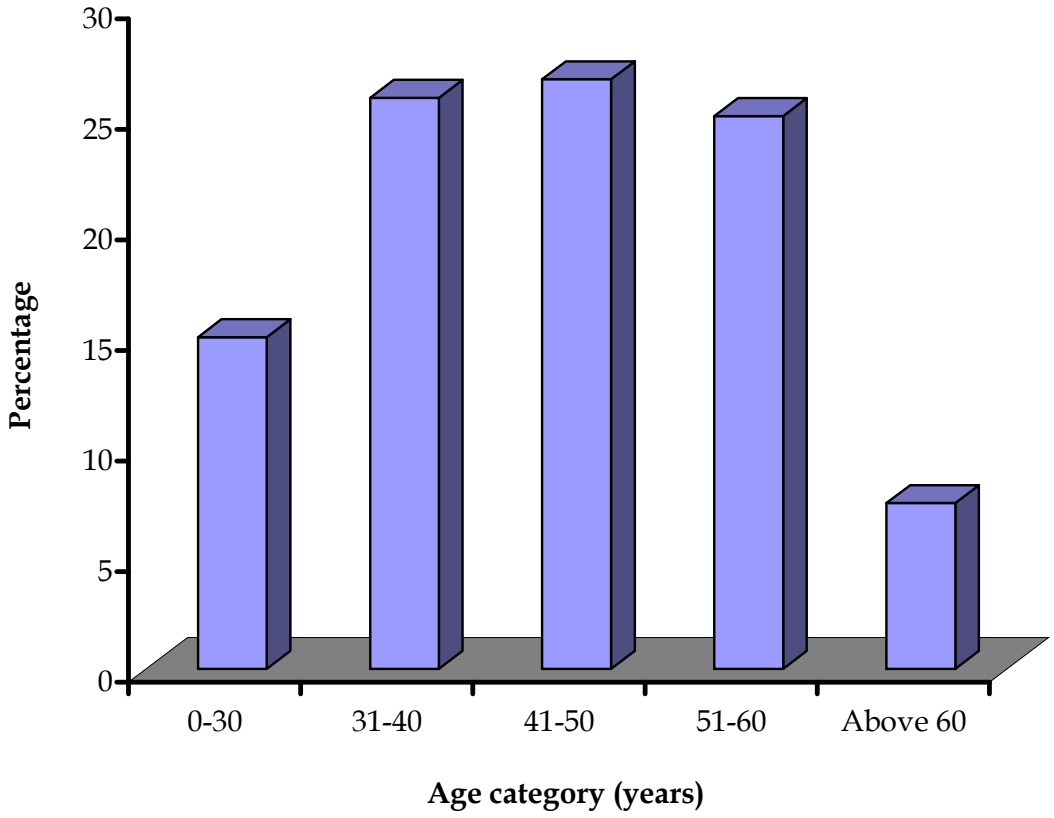


Figure 4.1: Age distribution of the sample farmers

Table 4.1 shows that 15 percent of the farmers were in the age category of 0-30 years, 25.83 percent were in the age category of 31-40 years, 25 percent were in the age category of 41-50 years, 26.67 percent were in the age category of 51-60 years and 7.5 percent were in the age category 61 years and above in the selected study area. It is observed that most of the respondents belong to the age category of 41-50 years.

4.2.2 Literacy Profile

Education plays an important role in efficient production of the farmers. In this sense educated farmers can apply modern technology. There is a strong correlation between society and education. The level of literacy is generally considered as an index of social advancement of a community. The selected respondents were categorized into six groups on literacy point of view. The categories are: (a) illiterate, (b) Primary, (c) Secondary, (d) SSC, (e) HSC and (f) Graduate and above.

Table 4.2: Literacy profile of the farmers

Literacy multitudes	No. of respondent	Percent
Illiterate	30	25
Primary	53	44.17
Secondary	19	15.83
SSC	8	6.67
HSC	3	2.5
Graduate and above	5	4.17

Source: Field survey, 2018

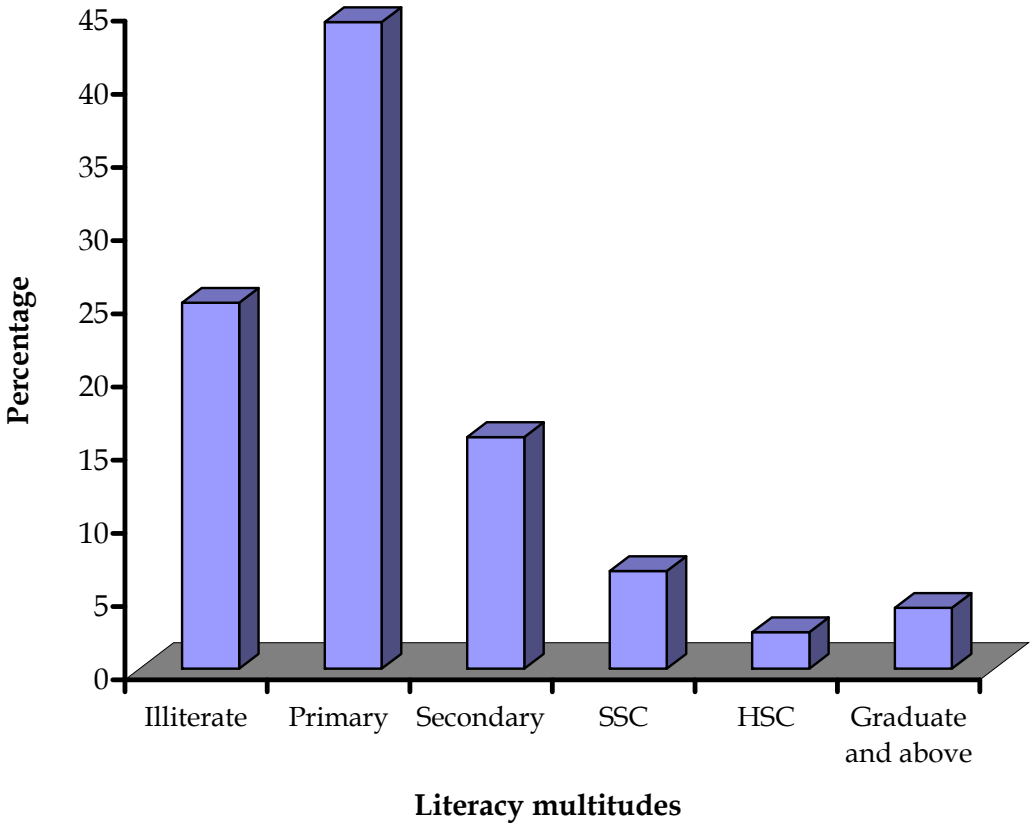


Figure 4.2: Literacy profile of the farmers

As regards level of education of the respondents, table 4.2 indicates that 25 percent were illiterate who have no educational knowledge, 44.17 percent were educated in primary level, 15.83 percent were educated up to secondary level, 6.67 percent were

educated in SSC level, only 2.5 percent of the farmers were educated in HSC level and the rest 4.17 percent were educated up to graduate and above level. It is observed that majority of the farmers in the study area were educated as they belonged to primary level.

4.2.3 Main Occupational Status

The occupation that earns most of the family income is considered as primary occupation. In the study area, only the family head of a household is considered, who has at least one occupation, while some had more than one occupation. In this study, occupation was classified into farming, business and others.

Table 4.3: Main occupational status of the respondents

Types	No. of respondent	Percent
Farming	112	93.33
Business	7	5.83
Others	1	0.83

Source: Field survey, 2018

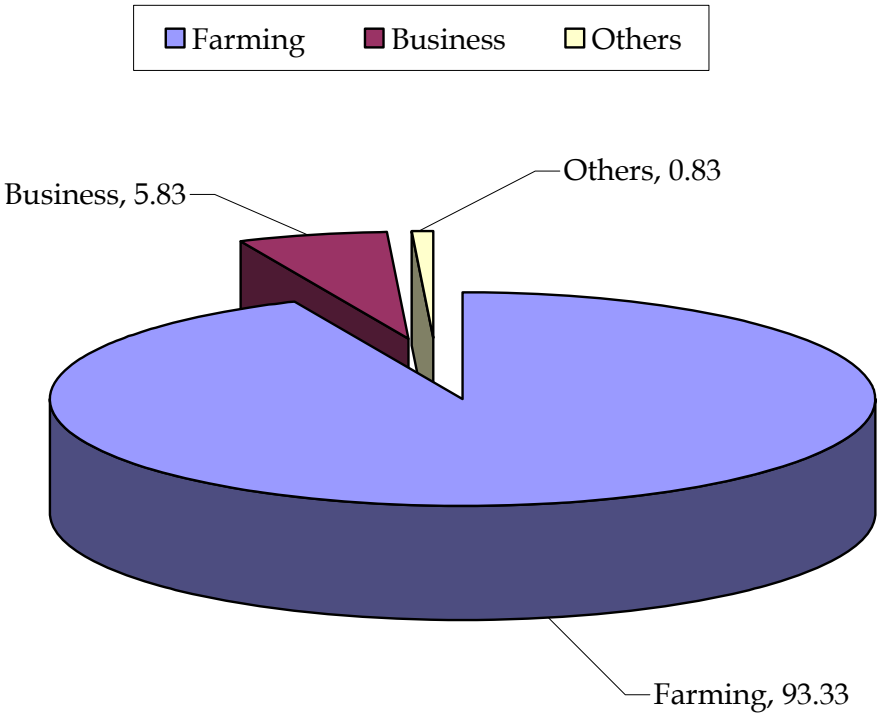


Figure 4.3: Main occupational status of the respondents

After doing the survey of the selected respondents, it indicated that majority like 93.33 percent of the respondents reported farming as their main occupation, only 5 percent of the respondents reported business and 0.83 percent reported as others (mechanic) as their main occupation. It is observed that majority the respondents in the study area depended on farming.

4.2.4 Subordinate Occupational Status

In the research area, only the family head of a household is considered. To analyze the subordinate occupational status of the respondents, subordinate occupation was classified into farming, business and others.

Table 4.4: Subordinate occupational status of the respondents

Types	No. of respondent	Percent
Farming	8	6.67
Business	36	30
Others	20	16.67
None	30	25

Source: Field survey, 2018

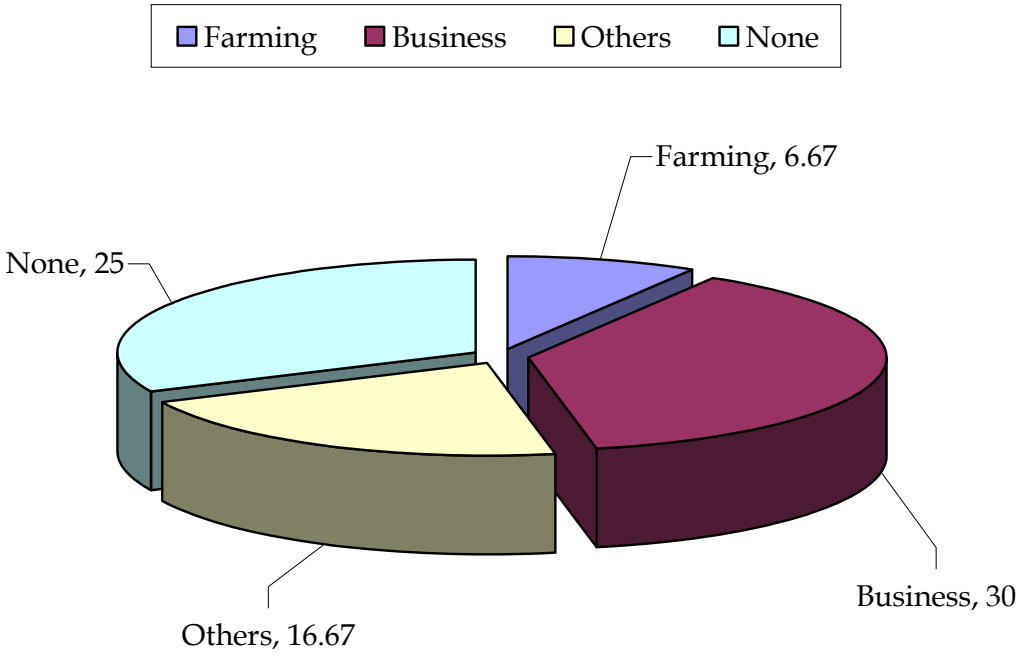


Figure 4.4: Subordinate occupational status of the respondents

After doing the survey of the selected respondents, it indicated that majority like 30 percent of the respondents reported business as their subordinate occupation, only 6 percent of the respondents reported farming and 16.67 percent who are day laborer reported as others as their subordinate occupation. 25 percent were not involved in any subordinate occupation and the rest 26 respondents did not provide their information for their personal cause. It is observed that majority the respondents in the study area were making their life by doing business as their subordinate occupation.

4.2.5 Farming Experience

The selected respondents in the study area were classified into seven categories according to their farming experience. The first category includes the farmers of 0-10 years, second category includes 11-20 years, third category includes 21-30 years, fourth category includes 31-40 years, fifth category includes 41-50 years, sixth category includes 51-60 years and the seventh category includes the farmers of 61 years and above.

Table 4.5: Farming experience of the sample farmers

Category (years)	No. of respondent	percent
0-10	14	11.67
11-20	31	25.83
21-30	36	30
31-40	25	20.83
41-50	11	9.17
51-60	2	1.67
Above 60	1	0.83

Source: Field survey, 2018

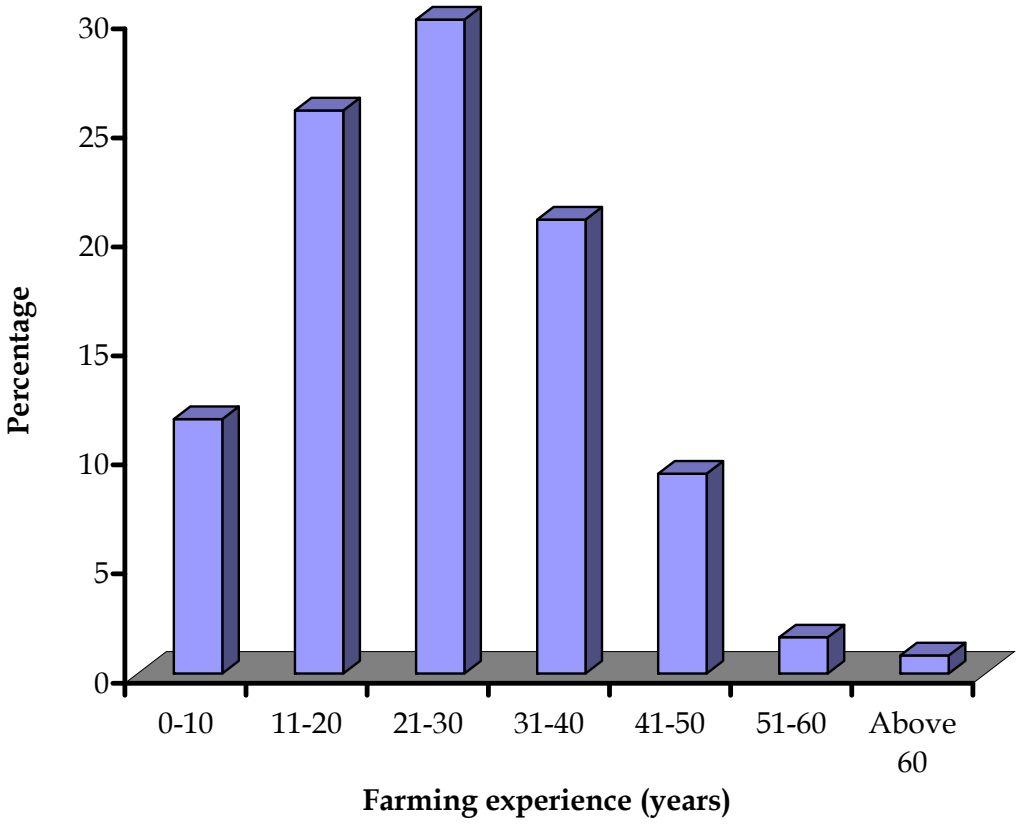


Figure 4.5: Farming experience of the sample farmers

Table 4.5 shows that 11.67 percent of the total respondents have farm experience of 0-10 years, 25.83 percent farmers have farm experience of 11-20 years, 30 percent farmers have farm experience of 21-30 years, 20.83 percent farmers have farm experience of 41-50 years, only 1.67 percent farmers have farm experience of 51-60 years and 0.833 percent farmers have farm experience of 61 years and above. It is observed that most of the farmers belong to 21-30 years of farming experience.

4.2.6 Household size and Dependency ratio

A household is defined as where all persons living less than one roof or occupying a separate housing unit, having either direct access to the outside (or to a public area) or a separate cooking facility. Where the members of a household are related by blood or law, they constitute a family. Table 4.6 shows

that the average household size of farmers was 5 which was higher than the national average of 4.5 (HIES, 2010).

Table 4.6: Average household size and dependency ratio in the study area

Household members (no.)			Working/earning members (no.)			Dependency ratio (iii = i / ii)
Male	Female	Total (i)	Male	Female	Total (ii)	
3	2	5	2	1	3	1.67

Source: Field survey, 2018

However, the dependency ratio expresses how many members of a household dependent on economically working and earning person of that household. In the study area, the number of economically working and earning persons were 3 denoting dependency ratio of 1.67.

4.3 Concluding clarification

The socioeconomic characteristics of the household are represented through tabular and graphical analysis. In age category, between 41 to 50 age, was highest that found in the research. Majority of the farmers in the study area were educated as they belonged to primary level. Average household size of the farmers found comparatively higher than the national average of 4.5. Farmers were chosen their main profession in farming. A few number of the respondent thought differently as they were chosen business in their main profession. Each and every respondent are somehow related to agriculture and farming in the study area. It is observed that most of the farmers belong to 21-30 years of farming experience.

CHAPTER FIVE

LIVELIHOOD ASSET CALCULATION OF SAMPLE HOUSEHOLD

5.1 Prologue

This chapter discussed on the access and ownership issues related to the sample household. The findings are shown in percentage form based on the basis of the ownership status and access capacities of male and female entity in the study area. From the asset pentagon, the existing variables are divided in to five capitals or assets named as Human capital, physical capital, financial capital, social capital and natural capital. From the calculation, research pictured the actual livelihood scenarioof the study area. It seems easy to understand the whole perception about the households of the area. The status of the livelihood capitals are discussed by calculating the results.

5.2 Status of human capital

Table 5.1: Status of human capital in the study area

Variables	Male		Female		Total in number
	No.	Percent	No.	Percent	
Total numbers of Family members	304	51.61	284	48.22	589
Working family members	188	66.90	93	33.09	281
School going children	93	56.36	72	43.64	165
Land ownership	65	54.17	32	26.67	97

Source: Field survey, 2018

5.2.1 Total number of family members

In the study area, total 120 respondents were surveyed. The result found that total family member was 589 where the male was 51.61% and the female was 48.22%.

In the study area male number is higher than female number.

5.2.2 Working or earning family members

In the study area, total 120 respondents were surveyed. The result found that working or earning family members is 281 where the male was 66.90% and the female was 33.09%.

Labor Force Survey (LFS), 2015-16, Bangladesh Bureau of Statistics revealed the labor force participation rate in rural area of Bangladesh in Statistical Year Book Bangladesh 2016. The result showed that in rural Bangladesh there was total 59.6% working family members in Bangladesh where the male percentage was 81.9% and the female percentage was 37.6% (Govt. of Bangladesh, 2016). Therefore, we can say that male labor force participation rate is comparatively low in the study area. But female working members of the study area are almost near to the Labor Force Survey result. In our country, mainly male persons are the head of their families and so that they are working higher than female person. But female persons are not so back worded. They are working as well. The working female family members are increasing day by day.

5.2.3 School going children

From 120 respondents, the research found that a total of 165 children were going to school where 56.36% were male child and 43.64% were female child.

Bangladesh Bureau of Statistics published the Sample Vital Registration System 2015 and revealed a result about the literacy rate of Rural Bangladesh. The result showed that 57.2% children were going to school where 59.2% were male and 55.1% were female (Govt. of Bangladesh, 2015). So, in the study area, the literacy rate of male is almost favorable but female literacy rate is comparatively unsatisfactory. Although now a days, females are not far from the male entities and they also get chances to achieve their education which is going up awarded, females of the study area still face some problems to achieve education.

5.2.4 Land ownership

In land ownership, from 120 respondents, the research found that total 80.83% persons had land ownership where cultivated land owned mostly by male entities which was 54.17% whereas the female owned only 26.67%.

Land dominants mostly men compared to women in our country. Total 97 persons have their own land and the rest 23 persons were landless. They are cultivating crops by taking lease.

5.3 Status of physical capital

5.3.1 House ownership

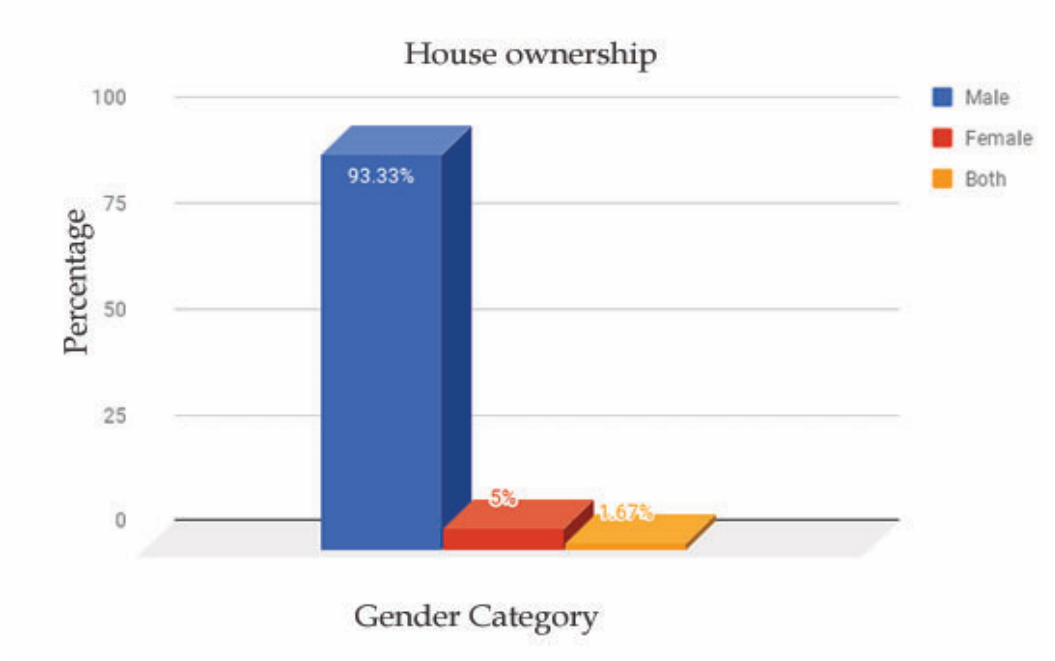


Figure 5.1: House ownership in the research area

Ownership of house, from 120 respondents, the research found that 100% persons have house where 93.33% owned by male entity and 5% owned by female entity and only 1.67% owned by both male and female.

In the study area, all the farmers have minimum one house. Some farmers did not have cultivated land but they have a house for living. Most of the houses are owned

by the male persons. A few amount of female who have the ownership in the house. Besides a few household found where both male and female are owned. In Bangladesh, house ownership regulates by the male entity.

5.3.2 Access to electricity

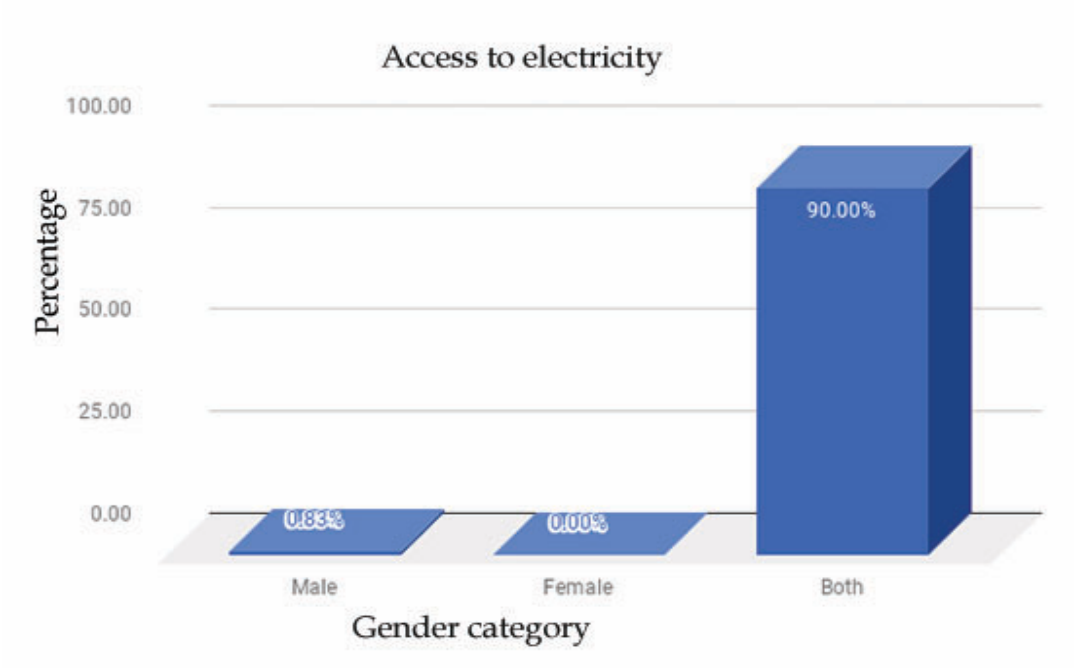


Figure 5.2: Access to electricity in research area

Access to electricity, from 120 respondents, the research found that about 90.83% persons had received their access on electricity usage. Both male and female had access to electricity usage by 90% where only 0.83% had accessed by male.

Sample Vital Registration System 2015; Bangladesh Bureau of Statistics revealed that 67.6% households had electricity connection (Govt. of Bangladesh, 2015). Therefore, we can say that in the study area, usage of electricity is very satisfactory. People are accessed electricity by the help of Power Development Board (PDB) and some are accessed by solar system. But there found a few household where electricity has not yet come. Both male and female in a household use electricity but research area found only one household where only males are accessed the electricity as because there is no female member in the family.

5.3.3 Access to sanitation

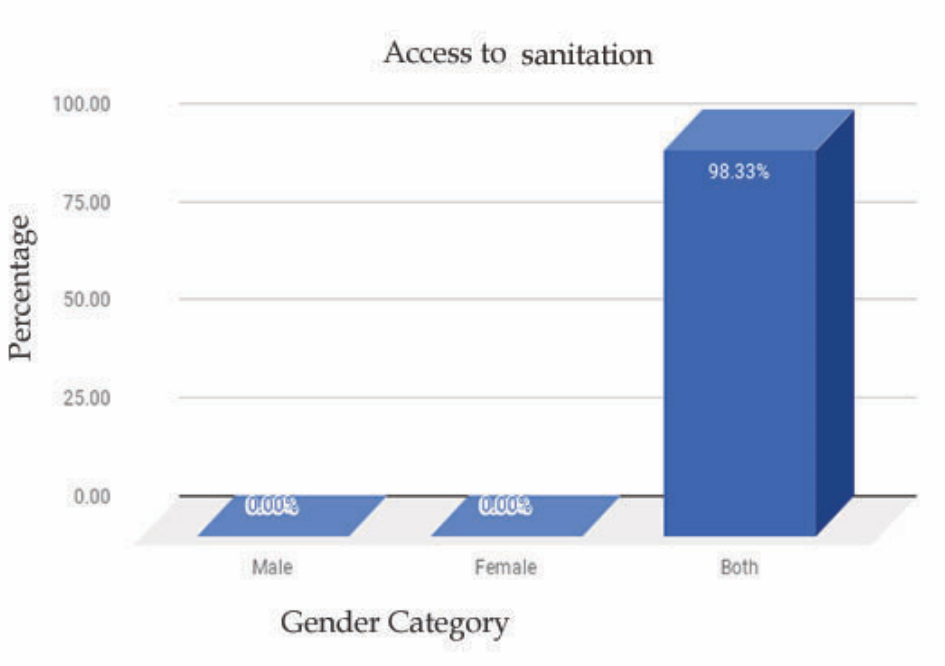


Figure 5.3: Access to sanitation in research area

Access to toilet, from 120 respondents, the research found that about 98.83% persons had received their access on toilet in their household. Both male and female had access to toilet usage by 90%.

In 2015, BRAC revealed an annual report and showed that 78% of the households in rural Bangladesh had accessed to hygienic latrines (BRAC, 2015). But in the study area, now-a-days almost everyone have sanitation facility. This is a rapid transition. Some households receive sanitary and some receive non sanitary latrine. Only two respondents found in the research area who have no toilet in their own.

5.3.4 Access to pure drinking water

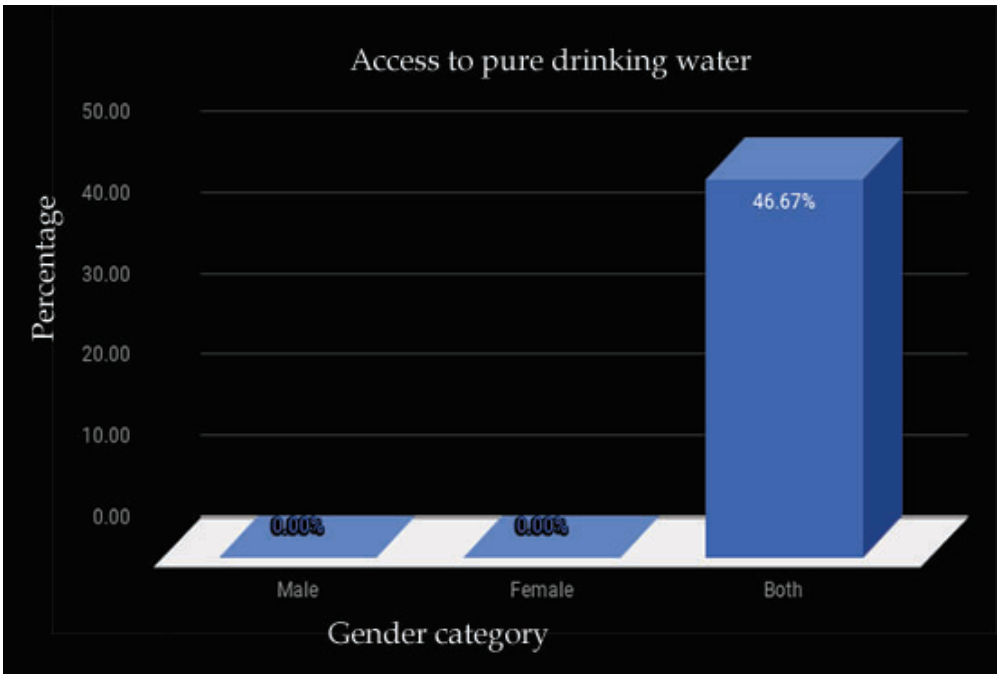


Figure 5.4: Access to pure drinking water in research area

Access to pure drinking water, from 120 respondents, the research found that 46.67% persons had tube-wells. Both male and female had access to tube-well usage by 46.67%.

In the study area, about half of the peoples have tube-well. They use it for their own household and livestock. Male and female both use it.

5.3.5 Ownership in agricultural equipments

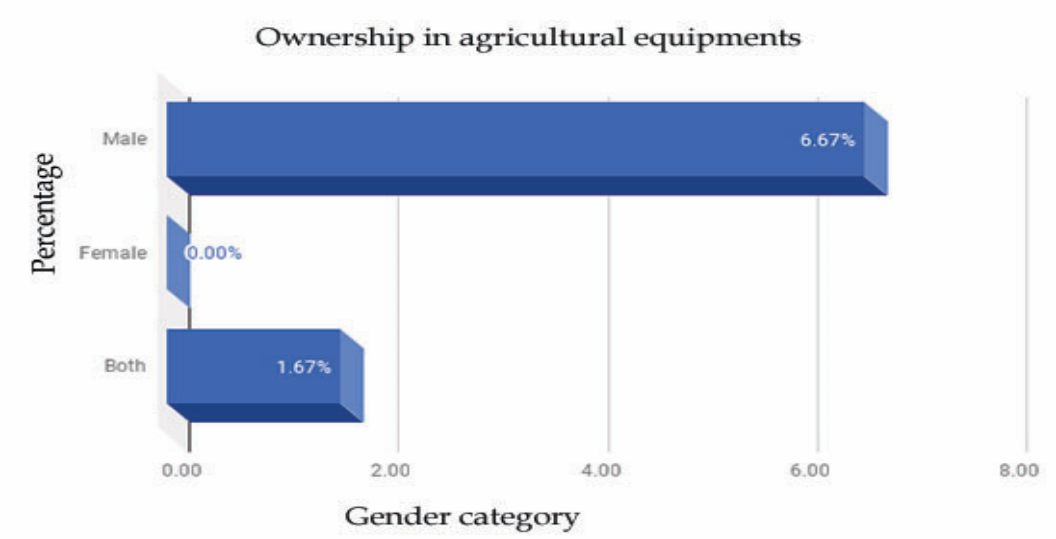


Figure 5.5: Ownership in agricultural equipments in research area

Ownership in agricultural equipments, from 120 respondents, the research found that only 8.34% had ownership of the agricultural equipments where 6.67% owned by male and 1.67% owned by both male and female entity.

From the Power and Participation Centre, Governance and Economy Survey, 2015, we came to know that in the 36.2% households have owned agricultural equipment (H. Z. Rahman, 2016). Therefore, in the study area agricultural equipment rate is not satisfactory. Equipments like tractor, thresher etc. are used for farming in the rural area. Only a few farmers have tractor and thresher. Others are using it through a payment for the equipments. Mostly ownership belongs to male's hand.

5.3.6 Ownership in household furniture

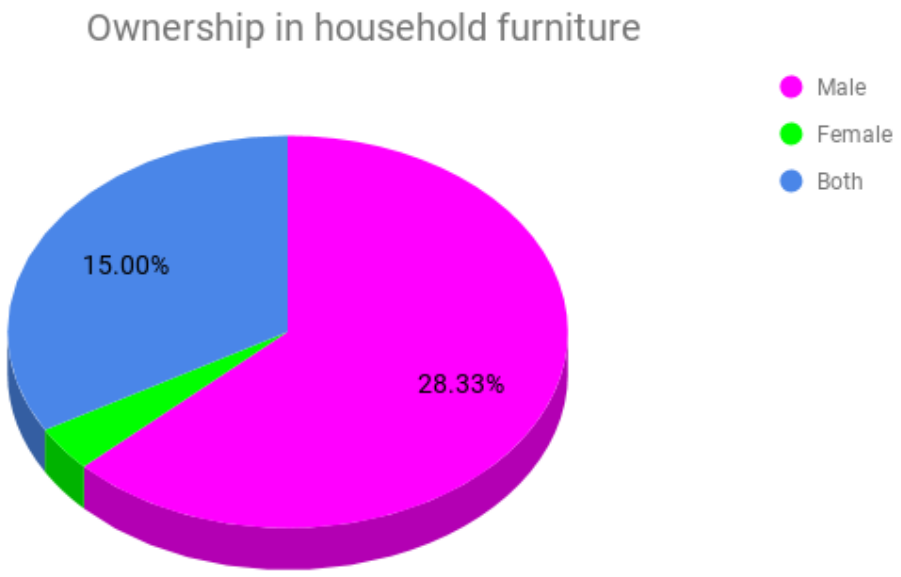


Figure 5.6: Ownership in household furniture in research area

Ownership in household furniture, from 120 respondents, the research found that 45% persons had household furniture where 28.33% owned by male entity and 1.67% owned by female entity and 15% owned by both male and female.

In the study area, household furniture includes television, freeze, furniture's, motorbike, bicycle etc. that are used in daily life. About less than half of the respondent belongs in this category. A research centre named Power and Participation Centre conducted a study and found a result from the survey period of late 2015 that 47.7% households have furniture expenditure (H. Z. Rahman, 2016), which is very near to this study area.

5.3.7 Access to cooking fuel

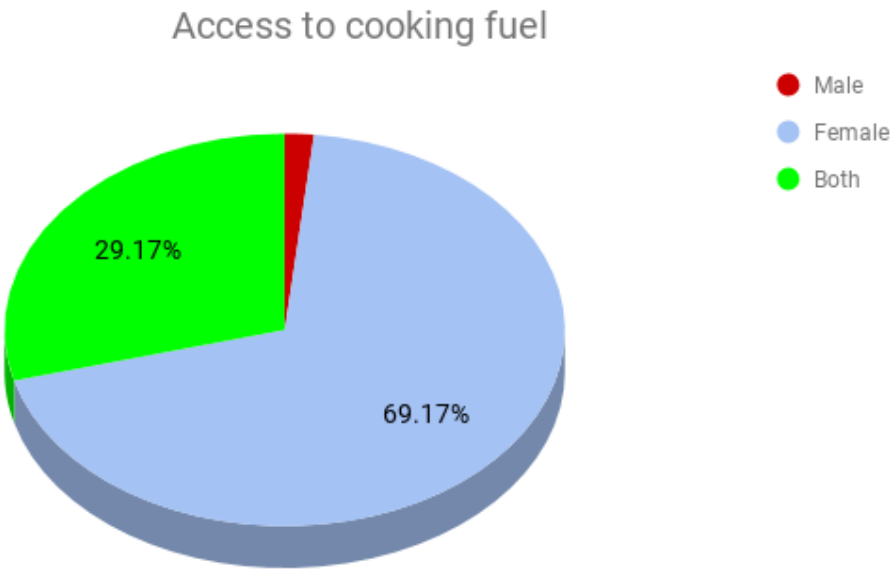


Figure 5.7: Access to cooking fuel in research area

Access to cooking fuel, from 120 respondents, the research found that 100% persons had received their access on cooking fuel usage. Both male and female had access to cooking fuel usage by 29.17% where 69.17% accessed by female and only 1.67% had accessed by male.

In the study area, each and every household get access on cooking fuel consumption. They use wood, bamboo etc for their cooking purpose. Moreover, Power and Participation Research Centre declared in their study that in rural area of Bangladesh, 82.1% households make the fuel expenditure (H. Z. Rahman, 2016). Therefore, in the study area access to cooking fuel rate is very satisfactory.

5.4 Status of financial capital

Table 5.2: Status of financial capital in the study area

Variables	Access						Total	
	Male		Female		Both			
	No.	Percent	No.	Percent	No.	Percent	No.	Percent
Saving in Bank	21	17.5	4	3.33	14	11.67	28	32.5
Cash in Hand	27	22.5	3	2.5	18	15	48	40
Formal Credit	16	13.33	51	42.5	9	7.5	76	63.33
Informal Credit	15	12.5	3	2.5	2	1.67	20	16.67

Source: Field survey, 2018

5.4.1 Access to saving in bank

Access to saving in bank, from 120 respondents, the research found that 32.5% peoples had their access to saving in bank where 17.5% male received, 3.3% female and both male and female accessed by 11.67%.

Bangladesh Bureau of Statistics Rural Credit Survey 2014 revealed that 23.57% of households have savings in bank (Govt. of Bangladesh, 2014). So in the study area, we can find that the number of households having savings in bank is higher. People are saving money in banks for theirfinancial security. Some farmers are saving in banks for their daughter's marriage and some are saving in a thought of their old aged stick and some are saving in a thought of their child education. And whoever are not saving in banks, they are either illiterate or did not want to keep their money in banks.

5.4.2 Access to cash in hand

Cash in hand that means the amount of money farmers kept in their house. Access to cash in hand, from 120 respondents, the research found that only 40% peoples had money in their house where 22.5% male had accessed, 2.5% female and both male and female accessed by 15%.

Bangladesh Bureau of Statistics Rural Credit Survey 2014 showed that 15.10% of households have cash in hand (Govt. of Bangladesh, 2014). So we can say that in the study area, there is a growing number of people who are keeping their money in their house. They mainly use the money in their field for cultivating crops. But the money mainly regulates by the male members who are the head of their families. There found a very small number of families where both male and female members have access to that money.

5.4.3 Access to formal credit

Formal credit means borrow money from either government or nongovernment institution. Access to formal credit, from 120 respondents, the research found that 63.33% peoples had their access in formal credit where 13.33% male, 42.5% female and both male and female accessed by 7.5%.

Bangladesh Bureau of Statistics (BBS) has conducted the Rural Credit Survey in 2014. According to the survey results, 48.7% of rural households in Bangladesh received rural credit in 2013. The result also showed that the wife of the head of household (58.5%) is main borrowing member of the household in terms of member's relationship status with the head of household in the borrowing household, followed by the head of household (36.2%). All this survey results reveal that females take most of the loans. And in the study area male member of the family take fewer loan. BBS Credit Survey also revealed that most of the borrowing members were engaged in own household activities (57.5%), and only 12% of the borrowing members are engaged in agricultural activities (Govt. of Bangladesh, 2014). But in the study area, most of the people depend on farming. So they need money for making crops in their field. Due to asset limitation, they borrow money from the formal institution. This institution could be governmental or nongovernmental. Mostly female members of the household have accessed the formal credit from NGO where male are taking loan from banks. NGO's like BRAC, ASA, PROSHIKA, GRAMEEN BANK etc. are providing loan for the female members in that area.

5.4.4 Access to informal credit

Informal credit means obtaining loan from money lenders, relatives and friends, etc. Access to informal credit, from 120 respondents, the research found that 16.67% peoples had their access in informal credit where 12.5% male, 2.5% female and both male and female accessed by 1.67%.

Bangladesh Bureau of Statistics Rural Credit survey showed in their results that 11.12% of loans were obtained from informal/non-institutional/personal sources including mahajans, dadon-businessmen and friends/relatives (Govt. of Bangladesh, 2014). In the study area, only some peoples are getting loans from their friends and relatives. As most of them depend on farming, they are not economically solvent and that's why they are incapable to give loanto their relatives or their friends. But the money lenders often give them loan with a high interest. Mostly males are dealing with the informal credit.

5.5 Status of social capital

5.5.1 Access to social club

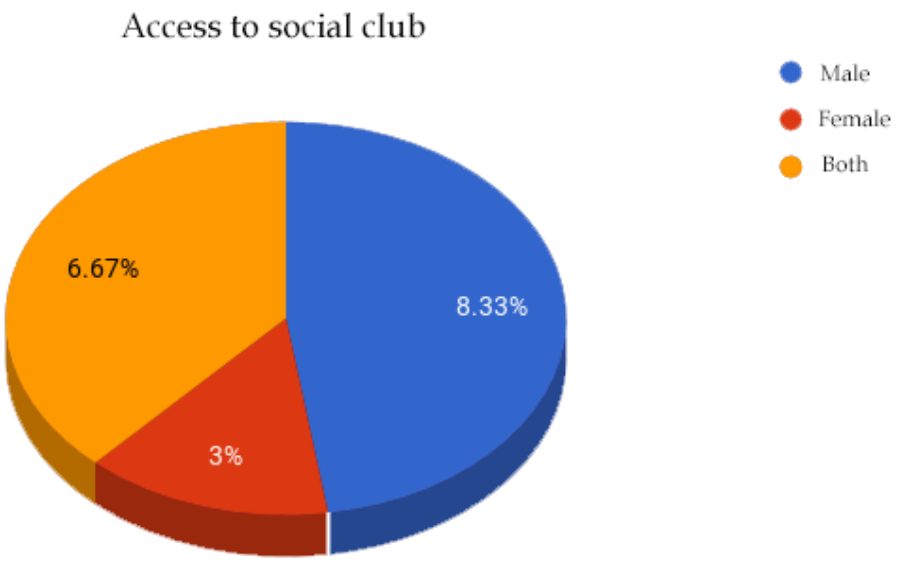


Figure 5.8: Access to social club in research area

Access to social club, from 120 respondents, the research found that only 17.5% had their access and the others were not participating. From them, 8.33% was the male entities and 2.5% was the male entities. But 6.67% both male and female had access to social club.

In the study area, peoples were not very interested to go in their local clubs. Very tiny amount of people were found who were involved in these matter.

5.5.2 Access to religious places

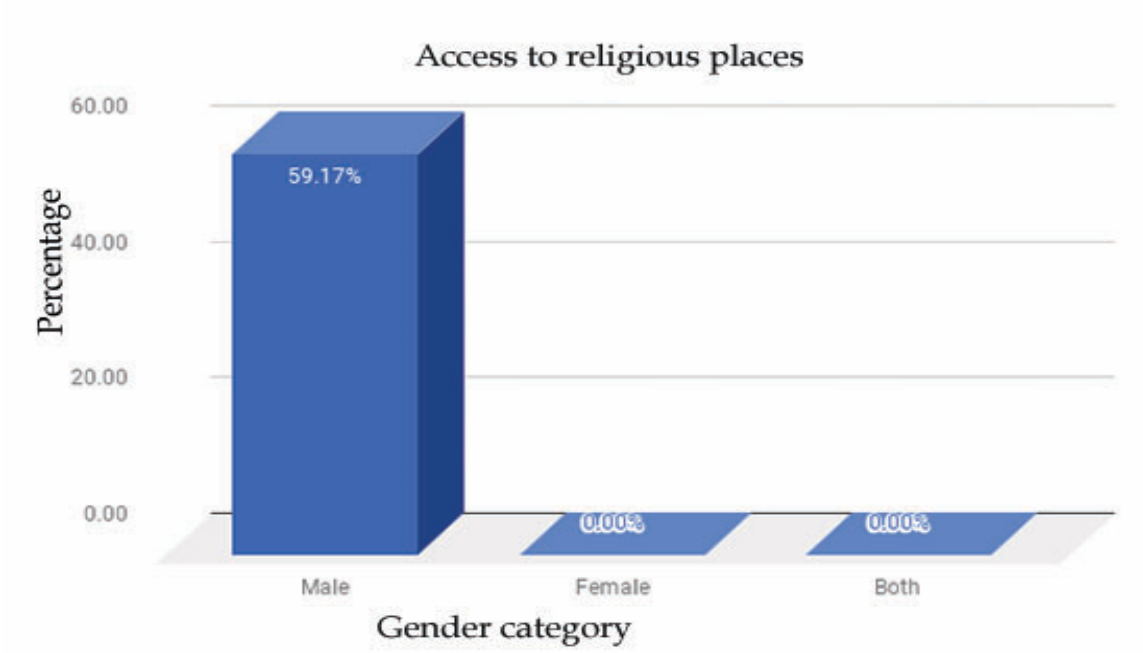


Figure 5.9: Access to social club in research area

Access to religious places, from 120 respondents, the research found that 71 persons were having access to religious institutes. No female was found there. In study area, 59.17% male were going to religious places.

In the study area, almost everyone believes in Islam and male persons who aged over 30 years were going to mosques for their regular prayer. But no female persons were found. They pray in their own house.

5.5.3 Access to political organization

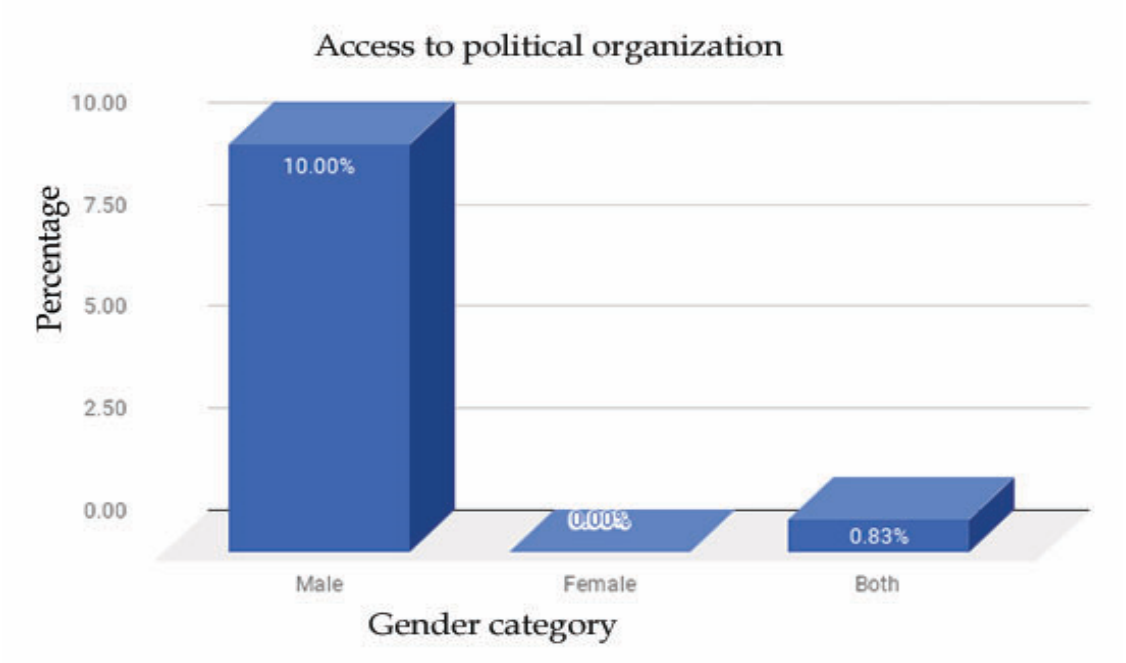


Figure 5.10: Access to political organization in research area

Access to political organization, from 120 respondents, the research found that only 10.67% had their access to political organization. From them, 10% was the male entities and no female found. But 0.83% both male and female had access to political organization.

In the study area, peoples were not interested in political issues. Farmers need to work all day long in the field in seasonal time. So they did not get timeto involve. Young aged people were getting involved in BCL. Female persons were not interested to involve on these. Only one household found in the study area where both male and female involved in political organization.

5.5.4 Access to Govt. organization

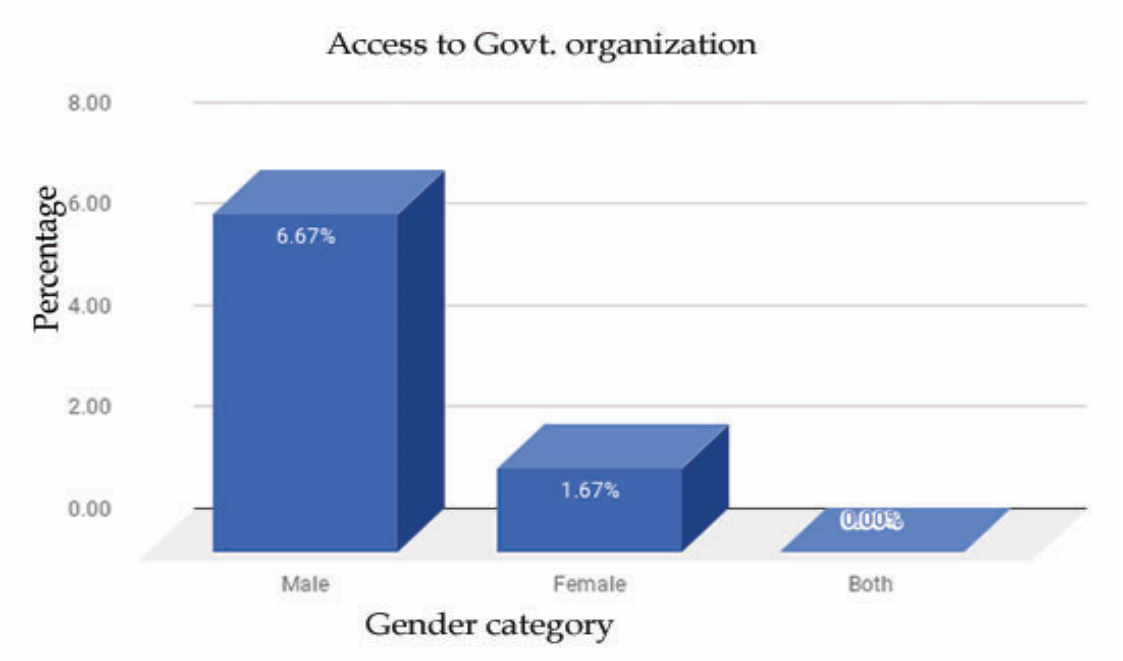


Figure 5.11: Access to Govt. organization in research area

Access to govt. organization, from 120 respondents, the research found that only 8.33% had their access to govt. organization where 6.67%only male received the access and female accessed 1.67%.

In the study area, peoples were not involved in government institutions. They were engaged in nongovernmental organization. There found some name of government institutions like Bangladesh Krishi Bank (BKB), Sonali Bank, Rajshahi Krishi Unnayon Bank (RAKUB), Janata Bank and Ekti Bari Ekti Khamar (EBEK).

5.5.5 Access to Non Govt. organization

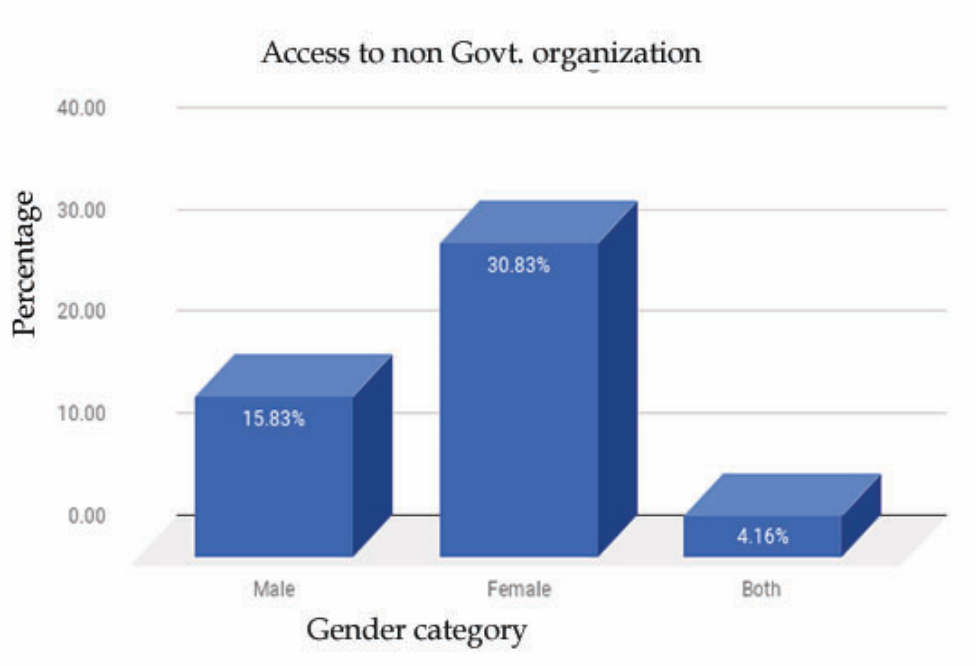


Figure 5.12: Access to Non Govt. organization in research area

Access to non govt. organization, from 120 respondents, the research found that 50.83% peoples had their access to non govt. organization where 15.83% male received, 30.83% female and both male and female accessed 4.16%.

In the study area, peoples were getting involved in the non govt. organization. Half of them rely on these. In rural areas, peoples usually are not so educated. It is one of the reasons because as suppose if a farmer need loan for cultivation, then it will be very easier for him to get loan from NGO's as it requires a little paper works compared to any government organization. So they easily get their loan from the non government organization. NGO's have small installment system to repay his loan. Besides it has some negative effect upon the farmers. If anyone could not repay their loans in time, then the NGO take a serious action according to their policy that results a huge demurrage of the needy farmers. That's why many of the farmers avoid NGO.

5.6 Status of natural capital

5.6.1 Cultivated land size

Cultivated land is the primary factor in any production process. All the other factors of production like capital, labor and entrepreneurship are useless and cannot function without land. Land is considered to be the original and inexhaustible gift of nature. It is the most important productive asset for farm households because farm families depend mainly on the land. The size of the land in agriculture influences household livelihood patterns in that the larger the farm land, the higher the production which leads to higher standard of living.

Table 5.3: Cultivated land size of the respondents

Category (decimal)	No. of respondent	Percent
0-200	74	61.67
201-400	19	15.80
401-600	14	11.73
Above 600	13	10.80

Source: Field survey, 2018

Table 5.3 shows that 61.67 percent of the total respondents have land between 0-200 decimal where they cultivated their crops. 15.80 percent farmers belong to second category which is between 201-400 decimal, 11.73 percent farmers have 401-600 decimals land for cultivation and only 10 percent farmers are holding more than 600 decimal of cultivated land. It is observed that most of the farmers are holding land between to 0-200 decimal.

In the study area, most of the respondents are connected with farming. Whoever have land in their own are either doing farming or give lease to others for their cultivation as a contractual basis.

5.6.2 Tree plants ownership

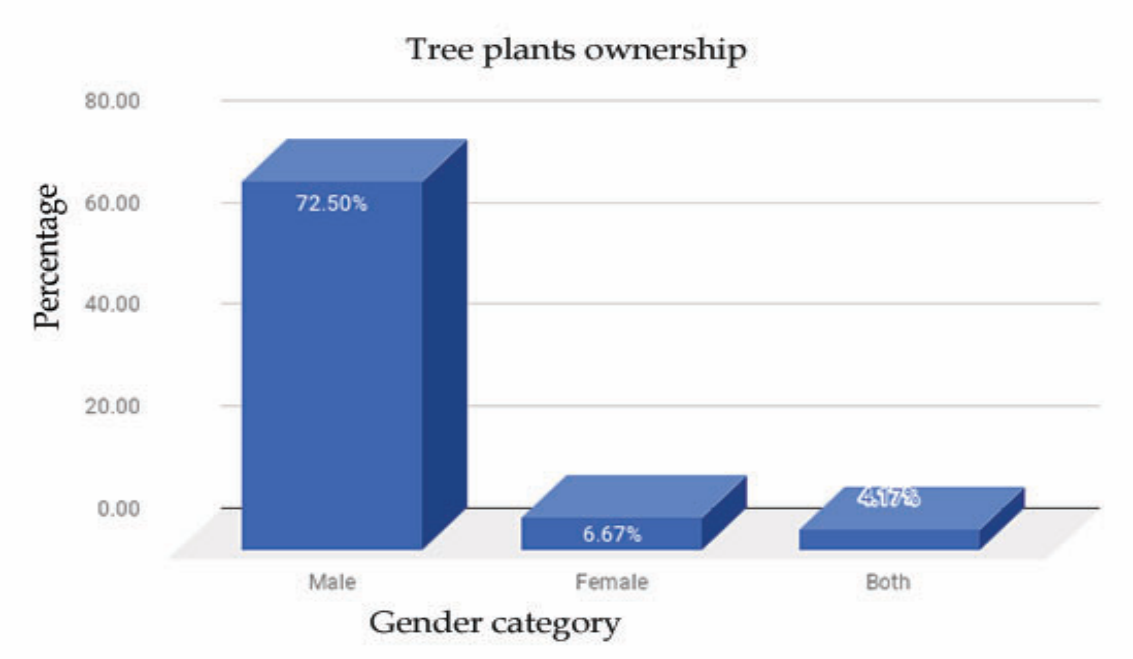


Figure 5.13: Tree plants ownership in research area

In the study area, from 120 respondents, the research found that total 88.33% had trees or plants where 72.5% owned by male entities and 6.67% owned by female entities and only 4.17% owned by both male and female entity.

In the study area, farmers have trees like mango, jack fruit, guava etc. that acts as a medium of asset. These were placed around their house. Usually trees are so useful as they get seasonal fruit from the trees and it provides fuel wood for their cooking purpose. Besides, trees act as a wind break to protect their house.

5.6.3 Livestock ownership

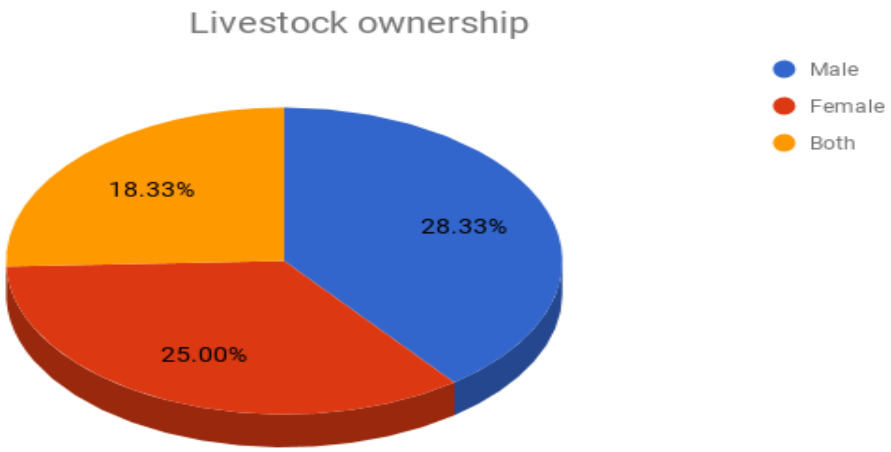


Figure 5.14: Livestock ownership in research area

In the study area, from 120 respondents, the research found that 71.67% had livestock ownership where 28.33% owned by male entities and 25% owned by female entities and only 18.33% owned by both male and female entity.

In the study area, almost every household have either cattle or goat or chicken or both. Farmers practice livestock operations around and within their house. Generally, it helps them economically. They can easily get meat and milk from the livestock operation. Especially, in every eid-ul-azha, they get some money by buying cows and goats.

5.7 Concluding remarks

From the above result and discussion, research found that in almost every single foot step, female are being suppressed. In every aspect, most of the opportunities are deserved by male compared to female entity. A livelihood is said to be improved when there exists an equal portion of opportunities and rights for both male and female respectively. Government should take a deep concern about this matter so that female can get their actual right and opportunities as like as the male community of Bangladesh.

CHAPTER SIX
PROBLEMS AFFECTING RURAL LIVELIHOOD

6.1 Introduction

The reasons that inhibit the achievement of expected output are defined as problems or constraints. This section deals with the problems faced by the farmers and their households that brutally affected rural livelihood of Chapai Nawabganj district. On the basis of their discernments about the problems they faced, the overall problems were being merged in this chapter. These findings can help the policy makers for further investigation.

6.2 Problems of the farmers and their households that crucially affects livelihood

A range of problems were faced by the farmers and their households that badly affects rural livelihood in the research area. The extent to the problems professed by the farmers was picked out according to their perceptions were depicted in below-

6.2.1 Lack of knowledge and training

The knowledge of the farmers on this aspect was not immensely transparent. Lack of appropriate knowledge on this farming practice was a great knotty issue for the farmers. In the study area a farmer named Yasin Ali says,

"I am still using our old traditional farming system and don't know about modern farming system."

They did not know about the modern farming system. As a result they still remain in the traditional farming and thinking. Besides, the farmers are not capable of understanding with their costs and benefits. So they did not manage their families well as it badly affects their livelihoods. Farmers didn't get the appropriate training. Another farmer named IliasKazi says,

"I don't understand actually what amount of insecticides I should apply in my land"

6.2.2 Low educational levels and inequitable access to education

Low educational levels reduce livelihood patterns and opportunities. Women are mostly affecting in the study area. It causes low labor productivity and limits spread of new thinking in agriculture. Mostly female entities are remaining unmoved that reduces livelihood standard. In the research area, it was seen that the consequence of lower education results early marriage, dowry and some superstations. Inequitable access to education results high rate of women illiteracy. Poor access to education translates in low literacy and unemployment of the youth. These households live relatively far from the public schools, and the schools are relatively far from each other. As a result, rural schools have considerable expenses for transporting children to and from school and other activities. Education of girls was felt to be unnecessary in the past and this has seriously affected their quality of life. Illiteracy has also hampered their development due to lack of communication with the outside world. They are slow in adopting new practices, which are essential with the changing times Low literacy rate, particularly among women having adverse effect on their skills development, employment productivity, family welfare and education of their children.

6.2.3 Lack of capital

Lack of capital is one of the vital problems in the research area. Most of the farmers have a few amount of land for crop cultivation for their own. So they have to depend on land owner for crop cultivation. Besides, capital access is also low for the farmers. Due to low capital, farmers are unable to buy good quality seed, fertilizers and other agricultural equipments. It is assumed that the overall livelihood pattern is affected.

In the study area, a farmer named Mr. Samad says -

"Brother, mostly we all are continuously facing a lot of problem in buying quality seed and fertilizer due to low capital."

6.2.4 Gender discrimination

Gender discrimination is one the vital problems that results lower livelihood status of a community. Better education for girls later translates into higher age at marriage, lower fertility levels, reduced population growth rates, less pressure on natural resources. But the scenario of the study area draws an opposite picture.

Mostly female are deprived of their rights and opportunities. In the study area, research found that mostly women are suffering from malnutrition. Ownership status is always lower in case of women.

Once a gender-blind Bangladesh fishpond program was held and it targeted information regarding the technology to the households. By default, husbands (Hallman et al. 2007; Kumar and Quisumbing 2010) found that their holdings (relative to their wives') of land, livestock, and total value of assets were increased through participation in the program. Though husbands still owned the majority of household assets, in women's side women's assets was increased quicker than their husbands. From this program, we learn women have fewer control over asset and if they get equal control over asset, they can contribute in the rural agricultural economic development. In Bangladesh, male are dominant. In the field of information and technologies, female participation is comparatively lower. If there is no discrimination in gender, both male and female get equal rights and opportunities. Generally male are working outside but at the other hand women are deprived of working outside. They faced many questions by their in-laws while working away from home. So women provide a large portion of time on food processing and household work. In the study area, a female named RebekaBanu says-

"How my mother-in-law would perceive if I worked away from home"

Moreover thinking of women's physical security, there were some women who were not willing to work outside themselves. Besides, women have the tendency of saving money than male entity. But they do not get the money in their hand. At the end women lost their interest in working outside that largely affects their livelihoods.

6.2.5 Poor health status

Poor health conditions of the peoples due to lack of clean drinking water, sanitation and drainage facilities, inadequate health care facilities, leading to high child mortality and poor quality of life. It increases economic poverty by lowering labor productivity and livelihood opportunities. Poor health, like AIDS, is a serious

constraint on growth and competitiveness as it lowers labor productivity, particularly in research areas where it disproportionately affects educated men and their families and their overall livelihoods.

6.2.6 Lack of technical and management skills

Lack of technical skill lowers labor productivity and reduces livelihood options of the poor. In the study area, most of them are not well educated and they have no such technical knowledge for their cultivation. Most of the farmers are following the old traditional system. They are incapable of adopting the new inventions of agricultural farming system. As a result, there are no enormous improvements of their livelihoods. Due to low management skill, it results a low productivity of crops. Research area also found that, people are not interested in adopting new innovation. Lack of training facilities and extension services crate a hurdle for the development of rural community.

6.2.7 Lack of access to information

Peoples are facing lack of information. In the study area, farmers are not getting new ideas and inventions due to low access to information. Information technology is not very common in rural areas. Research found that mostly rely on internal linkages that encourage the flow of goods, services, information and ideas. The intensity of family and personal relationships in rural communities can sometime be helpful but they may also present obstacles to effective business relationships. As a result, they are not conscious about their rights and opportunities. Even where there is press freedom, the poor lack access to information on account of their illiteracy and inability to purchase newspapers, radios, etc. So farmers as well as households fall behind from the main stream.

6.2.8 Lack of access to public infrastructure and services

Research found that there is serious infrastructural lacking where households do not have equitable access to public goods (few visits from agricultural extension agents, agricultural research is seldom designed with their needs in view). The poorest rural areas are those least provided with physical infrastructure such as roads, markets, telecommunications and so on. The growth of rural livelihood of Chapai Nawabganj

is not very healthy in spite of efforts made by government due to lack of proper and adequate infrastructural facilities and services.

6.2.9 Natural resource depletion

Natural resource depletion is one of the tragic problems that affect the livelihood. In the study area, rural people tend to live in the most marginal areas and they are subject to degradation and depletion. Loss of natural resource base means loss of potential to develop sustainable economic activities. It results, no doubt, a low livelihood scenario.

6.2.10 Lack of financial assets

Lack of financial assets available to farmers is one of the biggest problems by which rural livelihood is cursed. Major sources of finance in study areas are loans from regional rural banks or from zamindars and mohajans or from nongovernmental organizations but their rate of interest are usually very high. Government has some institutions for this purpose but the results are not up to the level expected. Most of the rural entrepreneurs fail to get external funds due to absence of tangible security. The procedure to avail the loan facility is too time-consuming that its delay often disappoints the rural farmers. Though financial statements are difficult to be maintained by rural illiterate farmers, lack of guarantees for raising up of loans and so on. Thus the livelihood is affected.

6.2.11 Inadequate level of savings

Farmers often face the saving problems. Most of the farmers are working on farm and they have no such assets except their house and livestock. But they don't save their capital because they invest their whole capital in to their cultivation and the rest are used in family consumption. Most of them are incapable of saving money for their future. If any accident happens to them then it will be very hard for them to overcome from the situation.

6.2 12 Lack of idea about bank policy and mobile money transfer technology

In the study area, most of the farmers have no knowledge about different bank policies and money transfer technologies. In the study area, a farmer named Kaesul Kabir says,

"I heard about mobile money transfer technology but I don't know how to use it"

Another farmer named Dilip Haldar says,

"I didn't open any bank account in my name yet"

They don't have bank accounts in their name and they don't know how to use digital financial tools. They feel unsecured when they pay or receive money. Therefore, if the farmers start to make use of the widening range of digital financial tools, they can receive income safely, securely and privately and can strengthen their financial assets.

6.2.13 Lack of expert and motivational advisor's advice

In the study area, there was lacking of expert and motivational advisor's advice. An expert can give advice to the farmers to take important, initial and emergency steps in their crop production. Motivational advisors can help the farmers to be apathy toward new technology and training. Due to lack of advice, farmers face many challenging situations. At the difficult time, they don't have relevant customized content to overcome the situation. Sometimes agriculture supervisors don't give the appropriate solution of the agricultural problems.

One farmer named Jobbar Uddin says,

"An agriculture supervisor is the doctor of the crops. But sometimes some agriculture supervisors give wrong advices to us. If they give us wrong advices then how our troubles will reduce?"

6.2.14 Lack of trust

Farmers have lack of trust in government. So, they usually don't want to trust extension organization because of its link with agricultural policy and government interest. Therefore, they don't take extension service and ultimately deprived from credit and benefit. In some cases, farmers don't trust other farmers or neighbors and don't receive any idea from them. In the study area, both male and female member of the household don't reveal anything about their savings due to lack of trust.

Farmers don't open their bank account due to lack of trust on bank and banking agencies and they feel unsecured. All these create problems in rural livelihood.

6.2.15 Low risk bearing capacity

Rural farmers have less risk bearing capacity due to lack of financial resources and external support. They are not interested in taking any risk that associated with their farming or business. So the traditional old technology and the old mechanism is still continuing and results a low production and a tiny profit.

6.2.16 Lack of transportation and storage facilities

Transportation of products was not easy for the farmers in the study areas because of severe road communication system. A vast amount of products were being damaged because of it. Besides storage facility was low and as a result, storing of products for future sale was reasonably uncertain.

6.2.17 Lack of Govt. credit

Lack of govt. credit facility is one of the biggest problems in that region. Farmers do not find interest to take loan from formal credit institution. There are some causes behind it such as NGOs required meeting in every week, complexity in gaining loan from government institution, maintaining pass book etc. they prefer loan from local lender and they also think that the procedure is much easier than formal credit institution.

6.2.18 Lack of access to agricultural extension service

Farmers are not so much benefitted with agricultural extension services. Only a few percentages of farmers are conscious about the service. Whenever they face problem about crop production such as fertilizer, insect attack they go to the dealers and do as they suggest to do by the dealers or local old aged person. So they don't get enough access to the extension service that results a confusion and low productivity.

6.2.19 Lack of quality seed

The overall livelihood affected by the low quality seed. Farmers don't get the quality seed most of the times. On the other hand, quality seeds are required with a high price. Most of the farmers produce the seed in their own but whenever they buy the crop seed from market, they think that the seed quality is not so high as they pay high amount of money for the seed. They are willing to pay but they expect a good

quality of seed as they know better yield produces from good quality of seed. A farmer named Shajahan Ali says,

"Last year I couldn't provide quality seeds in my land and couldn't produce good crops."

6.2.20 Bias attitude of input distribution

From the research, it is found that there exists biasness in case of input distribution. Most of the farmers are not satisfied with the agricultural input distribution system. They think that biasness is so high and there is no one to monitor this biasness. It is often occurs that poor and landless farmers are totally deprived from these facility as they don't know about the benefit. In the study area, farmers who have a good relation to the respected chairman and other public associates who are dealing with the seed and fertilizer distribution, get the quality seed and fertilizer which is a threat towards the improvement of common farmers as well as his households as well as overall livelihoods. A farmer named ForajMeah says,

"Politically powerful people get the maximum agricultural facilities."

6.2.21 Lack of water availability

Lack of water availability is one of the biggest problems during Rabi season. Most of the farmers have to depend on underground water for crop production as they do not have other water resources. Irrigation is always a hard task and always require supervision. In the study area, the groundwater level is very low and tube well installation is heavy costly. So farmers bear a high expense on this that enhances the cost of production as well as minimizes the profit.

6.2.22 Poor knowledge about air pollution

In the study area, there was no use of clean cooking stoves and also no exhaust ventilation pipes in house. The exhaust ventilation pipe helps to emit the smoke. As there were no ventilation pipes, prolonged exposure to smoke from impure cooking fuel creates air pollution inside the house. All these create serious implications in human livelihoods. Air pollution is very harmful for human health. But in the study there was poor knowledge of health among the respondents.

Concluding Notes

People of Bangladesh still live in poverty and mostly live in rural areas. Poverty is a continuous problem in Bangladesh. This research discussed some serious findings that correlated with the livelihood affecting issue. All these issues create problem in rural livelihood. Though rural poverty remain troublesome development challenges, policy makers should pay a sincere attention on the findings and evaluate the suggestions provided by the respondents at different stages of the research to overcome the problems. Government should also lend its helping hand in this context. The Government can launch different strategies to better tackle the issues of problems. There are many governmental and non-governmental organizations that already started working on poverty reduction but people of the rural area should have the proper knowledge about it. Due to lack of knowledge, farmers could not implement the idea and remain ancient. Therefore, rural livelihood could not get way to improve. So, social workers should spread the important information about different plan, policy or strategy among the people of the rural area. Motivation and awareness raising programs should be emphasized. Working together is a way to combat some of the problems rural people face. By creating a supportive ecosystem of Government, NGOs, donor agency actors and farmers with different roles, the problem of rural livelihood can be lessened.

CHAPTER SEVEN

SUMMARY, SOLUTIONS AND CONCLUSION

7.1 Summary of findings

The present study was undertaken to determine the gender disaggregated livelihood status of farm households in Chapai Nawabganj district of Northwest Bangladesh. Apart from determining the socioeconomic characteristics of therespondents, the study further focused on calculation of the livelihood assets that found in the study area and finding out the problems that affect their livelihood status.

7.1.1 Socioeconomic characteristics of the farmers

The selected characteristics of the respondents such asage distribution,literacy profile, main occupational status, subordinate occupational status, farming experience, household size and dependency ratio were studied. Findings in respect of these six characteristics of the respondents in thestudy area are summarized below:

In age distribution,15 percent of thefarmers were in the age category of 0-30 years, 25.83 percent were in the age category of 31-40 years, 25 percent were in the age category of 41-50 years, 26.67 percent were in the age category of 51-60 years and 7.5 percent were in the age category 61 years and above in the selected study area. It is observed that most of the respondents belong to the age category of 41-50 years.As regards level of education of the respondents, findings indicates that 25 percent were illiterate who have no educational knowledge, 44.17 percent were educated in primary level, 15.83 percent were educated up to secondary level, 6.67 percent were educated in SSC level, only 2.5 percent of the farmers were educated in HSC level and the rest 4.17 percent were educated up to graduate and above level. It is observed that majority of the farmers in the study area were educated as they belonged to primary level. In terms of main occupational status of the respondents,majority like93.33 percent of the respondents reported farming as their main occupation, only 5 percent of the respondents reported business and 0.83

percent reported as others (mechanic) as their main occupation. It is observed that majority the respondents in the study area depended on farming. In terms of subordinate occupation,findings indicates that majority like30 percent of the respondents reported business as their subordinate occupation, only 6 percent of the respondents reported farming and 16.67 percent who are day laborer reported as others as their subordinate occupation. 25 percent were not involved in any subordinate occupation and the rest 26 respondents did not provide their information for their personal cause. It is observed that majority the respondents in the study area were making their life by doing business as their subordinate occupation. In farming experience of the respondents, findings indicates that 11.67percent of the total respondents have farm experience of 0-10 years,25.83 percent farmers have farm experience of 11-20 years,30 percent farmers have farm experience of 21-30 years, 20.83 percent farmers have farm experience of 41-50 years, only 1.67 percent farmers have farm experience of 51-60 years and 0.833 percent farmers have farm experience of 61 years and above. It is observed that most of the farmers belong to 21-30 years of farming experience. The number of economically working or earning person was 3 in total, denoting dependency ratio of 1.67.

7.1.2 Livelihood asset calculation of sample household

A total of 120 respondents were included in the present research. The existing variables in the study area were divided in to five capitals or assets named as human capital, physical capital, financial capital, social capital and natural capital. Under all of these capitals, research found a total of 22 variables. The findings are summarized below:

Human capital

Total family member was 589 where the male was 51.61% and the female was 48.22%.In the study area male number is higher than female number.Working or earning family members is 281 where the male was 66.90% and the female was 33.09%.Total 165 children were going to school where 56.36% were male child and 43.64% were female child. 80.83% persons had land ownership where cultivated land

owned mostly by male entities which was 54.17% whereas the female owned only 26.67%.

Physical capital

In total, 100% persons have house where 93.33% owned by male entity and 5% owned by female entity and only 1.67% owned by both male and female. About 90.83% persons had received their access on electricity usage. Both male and female had access to electricity usage by 90% where only 0.83% had accessed by male.Total 98.83% persons had received their access on toilet in their household. Both male and female had access to toilet usage by 90%. Total 46.67% persons had tube-wells. Both male and female had access to tube-well usage by 46.67%.Only 8.34% had ownership of the agricultural equipments where 6.67% owned by male and 1.67% owned by both male and female entity. In terms of ownership in household furniture, 45% persons had household furniture where 28.33% owned by male entity and 1.67% owned by female entity and 15% owned by both male and female. 100% persons had received their access on cooking fuel usage. Both male and female had access to cooking fuel usage by 29.17% where 69.17% accessed by female and only 1.67% had accessed by male.

Financial capital

Total 32.5% peoples had their access to saving in bank where 17.5% male received, 3.3% female and both male and female accessed by 11.67%.Only 40% peoples had money in their house where 22.5% male had accessed, 2.5% female and both male and female accessed by 15%. Total 63.33% peoples had their access in formal credit where 13.33% male, 42.5% female and both male and female accessed by 7.5% and 16.67% peoples had their access in informal credit where 12.5% male, 2.5% female and both male and female accessed by 1.67%.

Social capital

Only 17.5% had their access in social club and the others were not participating. From them, 8.33% was the male entities and 2.5% was the male entities. But 6.67% both male and female had access to social club. 71 persons were having access to religious institutes. No female was found there. In study area, 59.17% male were going to religious places. Only 10.67% had their access to political organization. From them, 10% was the male entities and no female found. But 0.83% both male and female had access to political organization.8.33% had their access to govt. organization where 6.67% only male received the access and female accessed 1.67% and 50.83% peoples had their access to non govt. organization where 15.83% male received, 30.83% female and both male and female accessed 4.16%.

Natural capital

A total of 88.33% had trees or plants where 72.5% owned by male entities and 6.67% owned by female entities and only 4.17% owned by both male and female entity and 71.67% had livestock ownership where 28.33% owned by male entities and 25% owned by female entities and only 18.33% owned by both male and female entity.

7.1.3 Problems affecting rural livelihood

A total of 22 problems were identified that affects their rural livelihood. The problems are lackofknowledge, low educational levels and inequitable access to education, lack of capital, gender discrimination, poor health status, lack of technical and management skills, lack of access to information, lack of access to public infrastructure and services, natural resource depletion, lack of financial assets, inadequate level of savings, lack of idea about bank policy and mobile money transfer technology, lack of expert and motivational advisor's advice, lack of trust, low risk bearing capacity,lack of transportation and storage facilities, lack of Govt. credit, lack of access to agricultural extension service, lack of quality seed, bias attitude of input distribution, lack of water availability and poor knowledge about air pollution.

7.2 Solutions

Poverty is the main cause that impedes the development of rural Bangladesh. It creates other obstacles too that farmers encounter in rural areas. So, poverty reduction can be the most important step to solve out the problems that farmers faced. And agriculture plays an important role in shortening the poverty. There are several scopes to do well in agriculture both at government and nongovernment (NGO) level.Besides government; general people can also play different roles to reduce the problems. In order to make the rural livelihood improved and healthy, the following measures may be adopted:

7.2.1 Achieve universal primary education

Different governmental and non-governmental groups should create mass awareness about the demerits of illiteracy. After the enrolment at school, some children stop going to school. Thus education can be improved through retaining students in school by applying different facilities to them.

7.2.2 Producing skilled manpower for irrigation

Skilled personnel are very necessary for the effective execution of irrigation. So, different technique should be planned to find out the active and skilled personnel. For successful irrigation development a programing model should be developed for designing the appropriate training systems.

7.2.3 Promote gender equality and empower women

If women had the equal opportunity to work similar to men, they could contribute to the development of the agricultural work. So, people of the rural area should reject their superstition and negligible attitude towards the working women outside and ensure secured working environment and facilities.People of the rural area should play role in stopping early marriage, creating opportunities for women to work outside, involving them in decision making and promoting equitable access to asset and control over it.

7.2.4 Composing evolution with research and training

Different development program need research back up and training for effective implementation. Development doesn't end in research and training, effective transferring of technologies from laboratories to the field is necessary.

7.2.5 Remove unemployment problem

People of rural area should be encouraged to create a new income opportunities. Various short term income sourcing actions need to be planned till the earning starts generating from the key interventions. Poor people who have no sufficient land and water can maintain livestock for generating income. Different community development programs should be initiated to build capabilities of the impoverished people. These programs can promote skill oriented training and serve agricultural inputs either free or at allayed cost.

7.2.6 Health

Government should increase the number of health and nutrition professionals and train them. Rural health care facilities should be emphasized and extended access to primary health-care methods by all the rural people.

7.2.7 Banish corruption

Government and rural people should work together to eliminate corruption. Parents should provide strong moral education to their children. Youth should be introduced with the moral development program. These programs encourage them to take part in community development, to do non-violence activities, de-addict from alcohol and gambling and build respect for women.

7.2.8 Ensure local government participation

Local government participation should be increased to assess and erase poverty.

7.2.9 Give loans at lower interest rate

If some sectors give loans to the farmers at lower interest rate, they can be motivated to invest it on production. The loan repayment system must be coherent. If the loan size is expand, the impoverished people can come out from the vicious circle of impoverishment to take the loan and can buy their necessary agricultural equipment.

7.2.10 Sufficient government digital service centers and facilities

In the rural area government should ensure sufficient government digital service centers and facilities. So, rural people can get adequate services at the instant period of time.

7.2.11 Keep telecommunication medium in house

Information and communication technologies help to provide access to information that help farmers to increase their efficiency and productivity in agriculture sector. So, farmers of the rural areas should be acknowledgeable about the benefits of the telecommunications medium such as the radio, television, cell phone, satellite technology, internet including video conferencing etc. By using these technologies farmers can get weather forecast, diseases alert and up-to-date information about pest and disease control, price and new varieties release that help a farmer to set their opportunities and threads. If rural people can know the advantages of ICT properly, they will be motivated to keep telecommunication medium in their house and use them regularly.

7.2.12 Introduce with the internet

Different organization can implement program in the rural area and introduce the rural people with the internet. Then educate the rural people about how to make use of the internet and ensure higher use of internet by them and grab the opportunities of internet.

7.2.13 Increase public and private investments in infrastructure

Public and private sectors should invest in rural areas to build streets, waterways and transportation so rural people can get the storage and market facilities and can

connect themselves to the water supply services and electrification facilities. If rural people can get access to external markets they can get diversification within the community. Diversification is necessary to maintain stabilized livelihoods and social development.

7.2.14 Provide suitable land-use frameworks

Land should be managed properly to support the establishment of agricultural activities. People should gather knowledge about land suitability for cultivation so they can properly use the land they have and can increase their cultivation. Government of Bangladeshis disseminated a new law named the "Village Improvement Act" in order to reduce unplanned settlement in rural areas of Bangladesh and to obstruct the conversion of land from agriculture into non-agricultural uses. Different organization and group should disseminate the law.

7.2.15 Gather knowledge about technology

Farmers should be introduced with the bank policies and services and they should create bank account in their name. They also should be introduced with different money transfer technologies, mobile banking system and gather knowledge about how to use different digital financial tools.

7.2.16 Develop tree based farming

People of the rural area can generate income through developing tree plantation program. Tree can also obstruct harsh weather conditions and provide food security. Different private and public sector should organize tree based farming training program and local families should be participated in the training program. The program must help to empower people to sustain their livelihood and social development.

7.2.17 Water resource management

Local communities should come forward to conserve the water. Local communities should have the knowledge about the soil and water conservation practices in agriculture. So, adequate training and demonstration should be ensured for the

farmers. Local people should learn how to conserve water so they can use the increased quantity of water in domestic work and irrigation. For agricultural productivity and reducing poverty non-government organization and government development agencies should implement watershed management project in the rural area and ensure active involvement of the local community. Watershed management program can eliminate soil erosion.

7.2.18 Wasteland management

Some new and innovative techniques should be explored to manage the waste land. People of the community organization should raise awareness and work together in land management.

7.2.19 Consider family as a unit for development

Community development programs should consider family as a unit of development rather than the village. They should target the family who really need support to move on.

7.2.20 Promote organizations from the grassroots level

Local people should develop various types of groups or organizations so they can understand the problems of each other and can help. This group can motivate the other members of the community and ensure active participation of them in diverse development activities. This group should build the resilience of rural communities and work together to acquire their actual right.

7.2.21 Raise awareness and promote training

Government and non-government organization should promote different vocational and entrepreneurship training for the people of the rural area. This training provides them technical education to the farmers and develops educational programs to prevent disease and training about modern farming system and cost efficient farming technique. Besides, it encourages on employment oriented technical

education and changing in vocational training method andhelp to banish the fear to accept the new system of agricultural production.Most importantly, it raises awareness especially on the rights of women and the concept of empowerment and gender equality in rural areas.

7.2.22 Ensure environmental sustainability

To ensure environmental sustainability, safe and environmentally sound waste management practices, sustainable use of natural resources practices, ecosystem conservation through community-based programs may be practiced and adopted.

7.3 Conclusion

Going by the findings of the study, it was revealed that most households in Chapai Nawabganj mostly engage in farming to augmenting their main income source. Again, poverty in Chapai Nawabganj is high having estimated that more than half of those surveyed were poor and living with a low standard of living. Moreover, they are facing many problems that disrupts their livelihood hence the need for more commitment on the part of government and the private sector to improve onthe status quo in terms of creating a healthy and sound livelihood.

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