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Women Laborers in Agriculture: A Study on Dinajpur District of Bangladesh

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Women Laborers in Agriculture: A Study on Dinajpur District of Bangladesh



PhD Dissertation

Mohammad Zamirul Islam

**Institute of Bangladesh Studies
University of Rajshahi
Rajshahi-6205
Bangladesh**

March 2014

Women Laborers in Agriculture: A Study on Dinajpur District of Bangladesh



PhD Dissertation

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Session: 2011-2012

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Bangladesh

March 2014

Women Laborers in Agriculture: A Study on Dinajpur District of Bangladesh



*A Dissertation Submitted to the Institute of Bangladesh Studies of
University of Rajshahi in Partial Fulfillment of the Requirements
for the Degree of*

**Δοχτορ οφ Πηιλοσοπηψ
ιν
Σοχιαλ Ωορκ**

By

Mohammad Zamirul Islam
Session 2011-2012

**Institute of Bangladesh Studies
University of Rajshahi
Rajshahi-6205
Bangladesh**

March 2014

Dedicated to
My Parents
Mohammad Pair Hossain
&
Zamena Khatun
for whom I am on the Earth

DECLARATION

I do hereby declare that the dissertation entitled '**Women Laborers in Agriculture: A Study on Dinajpur District of Bangladesh**' submitted to the Institute of Bangladesh Studies (IBS), University of Rajshahi, Rajshahi-6205, Bangladesh for the **Degree of Doctor of Philosophy (PhD) in Social Work** is completely a new and original work of mine. No part of it, in any form, has been submitted to any University or Institute in pursuing any degree or diploma.

Mohammad Zamirul Islam
PhD Fellow (2011-2012)

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CERTIFICATE OF APPROVAL

This is to certify that the dissertation entitled **‘Women Laborers in Agriculture: A Study on Dinajpur District of Bangladesh’** is an original work accomplished by **Mohammad Zamirul Islam**, a PhD fellow in Social Work in the session 2011-2012 at the Institute of Bangladesh Studies (IBS), University of Rajshahi, Bangladesh. The findings and views presented in this dissertation are originated from both primary and secondary data and entirely his contribution. He has prepared this dissertation under my active supervision and guidance. As far as I know, the dissertation has not been submitted elsewhere for any degree or diploma or publication.

I have gone through the draft dissertation thoroughly and found it suitable for submission. The dissertation is therefore recommended and forwarded to the University of Rajshahi through Institute of Bangladesh Studies for necessary formalities leading to its acceptance in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Social Work.

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Mohammad Zamirul Islam
PhD Fellow (2011-2012)
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ABSTRACT

It is a field based study to explore the nature of participation of women laborer in agriculture in rural areas of Bangladesh. It has been carried out in Dinajpur district of Rangpur division which is also within the northern part of Bangladesh. This study has been done through social survey method. Using multi stage sampling procedure, four *upazilas* have been selected out of thirteen *upazilas* of this district and from the selected *upazilas*, four unions from each have been chosen. From the four unions, twelve villages have selected randomly. From these villages, required number of respondents has been drawn for the study. Size of sample of this study was 385 which had been determined by using formula of Cochran (1963). In this study I have tried to unearth the various aspects of participation of the rural women laborers in agriculture. Usually women laborers in rural areas are involved in various kinds of agriculture related work. From sowing seeds in the fields to harvesting and storing them in granary, they actively participate in all sorts of jobs related to agriculture. Generally women's work in agriculture is not treated as agricultural work and so recognition of their contribution is not acknowledged either in society or within the state. This study reveals that women's work is much more multifaceted as compared to the male persons of the society. There are listed 21 types of agricultural works out of which women alone perform 9 types whereas only three types of jobs are done only by men. There remaining 9 types of agricultural works are performed by both men and women through their joint participation. Similarly, on an average, women work for 37.5 days for 33 decimals of land (one *Bigha*) whereas men spend only 28.5 days for the same. Study findings show that more than 90% of the respondents engage themselves in agriculture in order to ensure their daily bread. Almost all the other causes of their participation in the same sector are directly or indirectly related to poverty. The age group of 31-40 years has a higher rate of participation and for that reason they earn the highest in the study area. Participation of women from nuclear family is much more (76.9%) in agriculture than those coming from joint family and a large portion of

them (29.1%) have no dwelling house of their own. While working in field, nearly all of them (92.4%) faced different types of obstacles. Of the obstacles, lacking toilet facilities in the field, burning sun, their inability in performing of all works, difficulties in maintenance of *purdah* are the mostly mentioned. Among different seasonal works, their participation is high in weed cleaning, paddy reaping, threshing of paddy, sorting rice, parboiling rice, drying straw, winnowing are worth mentionable in both *Boro* and *Aman* seasons in the study area. In winter season, works related to the cultivation of corns, potatoes, green chilies, parable and bitter guard are mostly done by women. In *Boro* and *Aman* season, almost half of the respondents (44.7% and 45.9%) earned less than Tk.5000, and it is 81.65% in winter season. This is why; income variation has been seen high in winter season in the study area. There is also discrimination in wage and duration of work in comparison with their male counter parts. Women laborers had to invest more time in working and they also were paid less. Contingency analysis of the data shows that age, physical fitness, marital status, head of family, religious identity, mobility to work etc. are positively associated with wage at 1% level of significance. Similarly in multiple regression analysis, there are seen a significant association between total wage of IRRI and *Aman* season and the predicted variables (preparing seed bed, uprooting paddy shoots, give water, transplanting paddy-shoots, weed cleaning, reaping paddy, threshing, sorting, rice boiling and drying, dusting off rice, hay making) at 5% level of significance. In addition, in winter season, there are also seen significant association between total wage of winter season and the predicted variables (mustard related tasks, potato related tasks, parable/bitter guard, green chillis, sweet potato, ginger/garlic/onion related tasks, corn related tasks, lady's finger) at 5% level of significance. In respect to measuring empowerment of the respondents, three indicators i.e., mobility, decision making and political and legal awareness have been taken under consideration with different issues. It is seen that for both mobility and decision making indicators, average indices are 49.73 and 49.59 and for political and legal awareness, it is a little bit higher (57.66). Of the variables, age, education, religion, type of family, connection with NGOs and total seasonal income are significantly associated with empowerment of the women laborers. It is observed that those who earn more are empowered more and they have raised their voices against all kind oppressions in and out of their families in the study area.

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ABBREVIATIONS AND ACRONYMS

ALS	:	Agriculture & Livestock Survey
BER	:	Bangladesh Economic Review
BRAC	:	Bangladesh Rural Advancement Committee
BBS	:	Bangladesh Bureau of Statistics
CDP	:	Crop Diversification Program
DTW	:	Deep Tube Well
EAP	:	Economically Active Population
FAO	:	Food and Agricultural Organization
GB	:	Grameen Bank
GO	:	Government Organization
GDP	:	Gross Domestic Product
GoB	:	Government of Bangladesh
IFAD	:	International Fund for Agricultural Development
ILO	:	International Labor Organization
IRRI	:	International Rice Research Institute
LDCs	:	Least Developing Countries
LSF	:	Labor Force Survey
MES	:	Monitoring of Employment Survey

NCDP	:	North-West Crop Diversification Project
NCLI	:	National Commission on Labor of India
NCW	:	National Commission for Women
NGO	:	Non-government Organization
PHC	:	Population and Housing Census
PhD	:	Doctor of Philosophy
RDRS	:	Rangpur-Dinajpur Rural Services
SAARC	:	South Asian Association for Regional Cooperation
SPSS	:	Statistical Package for Social Sciences
STW	:	Shallow Tube Well
TRIPS	:	Trade Related Intellectual Property Rights
UN	:	United Nations
UNSNA	:	United Nations System of National Accounts
WB	:	World Bank
WEI	:	Women Empowerment Index
WTO	:	World Trade Organization

CHAPTER I

INTRODUCTION

1.1 Background of the Study

Bangladesh is predominantly an agrarian country. Agriculture is of paramount importance to Bangladesh. Four-fifths of the people depend, directly or indirectly, upon it... The great importance of agriculture and agricultural products is often not fully understood because of the pre-occupation with ways and means to promote industrial growth (Rashid, 1991). It is also the principal source of income and employment of the rural people. For using primitive method of cultivation, its agriculture is labor intensive and near about all the rural people are engaged in it. Though there are some technological changes in agriculture in recent time, it is still backward in using modern technology in comparison with India, China and Philippines (Rahman, 1997).

There is no denying that a long term sustainable development of a country depends on the development of non agricultural sectors. The development of non agricultural sectors cannot be seen without the development of agriculture. It is said that industrial development comes along with the development of agriculture and thus the development of a country paves the ways of prosperity. But the present state of agriculture of the country is not doing well. Especially the agro-based economy is facing challenges of unemployment, underemployment and disguised employment along with a lacking of modern technology. Landlessness, over lapping of micro credits and lack of training of rural agricultural laborers have also been associated these realities. Proper utilization of manpower is the key factor to development and it is also the basic elements of production. Development of any country entirely depends on the proper usages of these factors. How well a country employs its human resources is important in deciding how much it will develop economically (Agarwala, 1985). But, it is very unfortunate for Bangladesh that rate of unemployment; underemployment, disguise employment etc. are still increasing day by day.

1.1.1 Agriculture of Bangladesh

Bangladesh has a long agricultural heritage. Its agriculture is as old as the land of this country. For four thousands of hundreds years, the fertile Bengal delta was covered by the dense rainforest and wetland, an environment of high biodiversity (Van Schendel, 2009). It seems very probable that in the initial stage both settlement and agriculture followed the courses of the great river systems of the province, which acted as powerful fertilizing agents of the soil in their neighborhood. With the growth of population, however, there came about a steady increase in the cultivated area (Chakraverty, 1943). Allchin (1969) said that the first archaeological evidence of domesticated rice in Asia is in Gujarat in 1800 B.C., in central China C. 2300 B.C. and in Thailand C. 3500 B.C. The origin of the domestication of rice and the development of wet-rice techniques have been a matter of great controversy and remain a major unsolved problem.

Under inspiration of the Western Neolithic, an agriculture way of life developed on the upper and middle Gangā plains in the mid-2nd millennium B.C...Two phases of the Neolithic from the west then, nibbled at the Bānglā plains in West Bengal, but the rest of the forest alluvium of Bangladesh was too much for them. We have seen, though, that Bangladesh meanwhile would have been at least lightly occupied by the horticultural tradition from the Southeast Asia, which was better adapted to it. The infusion of masses of people had not yet begun (Maloney, 1977).

It is assumed that from the pre-historic period, its people used to do cultivation as their livelihood. For having location in low-lying region, Bangladesh was known as the land of rivers from the early age of history. There is the environment of the floodplains with their frequent inundations and a humid tropical climate, both unkind to material remains of human settlement not made of the sturdiest material (Van Schendel, 2009).

There were a lot of advantages for agriculture. These advantages at first attracted the people of Austric clan. Kole, Khasi, Mankhamer etc. were the part of this clan. They had come to the Indian sub-continent at the Neolithic era and there they learnt the use of iron and copper. With their arrival to this land, they take *Lan*, a stick for land cultivation, from which the modern plough (*langal*) has originated (Faruok, 1974). There are some words in Bengali language which are from Austric words. Words such as *langal* (Plough), *Narical* (Coconut), *Lau* (Pumpkin), *Ganda* (four) and *Kuri* (twenty) are Austric in origin (Rashid, 1991).

Before the presence of Aryan, people of Nisad and Damil clan started gardening of various fruit trees like coconut, nut etc. in this land. Alpine race arrived here after Nisad clan and then Aryan arrived from mid Asia. There were proofs and impacts of the Aryan in the history of fifth century. What we know about the ancient agricultural history of Bangladesh is the history Aryan's time. Real peasantization of Bānglā begun only about 700 B.C., and man came quickly to master this distinctive environment efficiently. For this, four prerequisites had to come together here: iron, oxen, the plow, and wetland rice. Once these four came together this remarkably productive land could be utilized, and it became settled fairly quickly (Maloney, 1977).

Majumder (1943) mentioned Bengal eternally as an agriculture dominating country. Rice would have been grown around eastern India from the late 3rd millennium B. C. at least, but it was dry rice or hill rice. Puddled rice enabled a growing population to live in the Gangā plains after 1000 B. C. and it diffused to the tip of South India by about 700 B. C. It was this crop that enabled peasantization of Bānglā, not the wheat, barley, and millets used farther west. The plow made the full peasant life possible, having diffused from the Near East, along with the ox cart. It is labor saving device which enables more efficient production the hoe cultivation of the Mundas, so that a surplus can be produced and

towns can grow. And the oxen, which drew the plow and the cart and ate rice straw, returned their dung to the land to re-fertilize it...this symbiosis of peasant village society, oxen, plow, and wet rice, with iron, account for the progressive peasantization of Bānglā from 700 B. C. to 700 A.D. (Maloney, 1977).

Hiuen Tsan the China tourist, describes that land of Bangladesh was cultivated with great care and a great deal of crops, flowers & fruits were produced...in the Brahmin inscription discovered in Mahastangore, states this region as a store house of rice (Faruok, 1974). There produced crops twice in a year and they did not clean weeds from their land. Both male and female all together worked in the field (Rahim, 1995). All these words prove that this land was actually a land of rice.

In the medieval period, agriculture was also the main source of livelihood. For example, a Chinese account of 1349/50 stated, 'The seasons of Heaven have scattered the wealth of the Earth over this kingdom'. At about the same time Ibn Batuta visited East Bengal. He mentioned that as he travelled from Sylhet to Sonargaon by rivers for 15 days he saw on his right and left orchards, water wheels, prosperous villages and gardens, 'as if we were passing through a market'. During Shaista Khan's time Bernier came to Bengal. He noticed on both sides of the Ganges 'extremely fertile' fields producing a whole variety of crops. Abul Fazl informed us that a particular variety of rice was 'sown and reaped three times in the same year without little injury to the crop'. But this cannot be taken as an index of the general fertility of the land. For even as late as the middle of the twentieth century, only a small part of the land was cropped more than twice in the same agricultural season (Banglapedia, 2003).

In pre-British India, the main form of wealth was land. The main economy was agriculture. The social relations that existed were based upon such an agricultural economy. This agricultural economy of India was organized on the basis of the village communities (Karim, 1961). Villages of that time were main focus of country's economy. In the later part of Muslim ruling in sixteenth century, traders from different countries came to Bengal and among the traders; Portuguese put a new contribution to agriculture of this country. They were of the thinking that many trees and plants of their country can grow well by dint of favorable weather of this country and accordingly they started planting tobacco, potato, papaya, pineapple, guava, etc. in this land (Faruok, 1974). Thus they made a remarkable qualitative change to the agriculture of the country.

In British Bengal, agriculture got a new lashing at the hand of the English. They began delivering Bengal cheap goods to the industries of England. As a result, the balance of traditional economy of Bengal got broken down. With a view to facilitating revenue of the country, English created a new Zamindar class through introducing Permanent Settlement Act in 1793. Furthermore, forcefully indigo tillage made the peasantry ruined. Extreme pressure on peasantry started aggravating and people became entirely miserable and distressed. For the draining of wealth to England as well as natural calamities, there were seen some famines in this fertile land. Certainly, the English had also provided governmental assistance in developing agriculture of the country. They introduced irrigation system; cultivation of new cash crops, setting up railways, improved system of marketing etc. which were started at the very beginning of twentieth century (Faruok, 1974).

With the increase of population, pressure on agriculture increased day by day and land–farm ratio started getting smaller. The Famine Commission of 1880 observed that the numbers who have no other employment other than agriculture are greatly in excess of

what is really required for the thorough cultivation of the land (Royal Commission, 1928). In 1901, average farm size was 3.3 acre and in 1911, this size cut down to 3.1 acre. Next time this size started smaller in course of time. According to the investigation of M M Islam 'There was seen an average annual production rate of all crops in 1920-46 was 0.30%, and the production rate of cereal in this time was also 0.30%. Average growth rate for cash crop was 1.3%' (Ali, 2000).

Till this time, agriculture was the main source of country's economy and most people were engaged in agriculture. The census returns of 1921 showed that the proportion of the population directly engaged in, or dependent on, agriculture and pastoral pursuits in the British India was 73.9% (Royal Commission, 1928).

During the 1960's, an agricultural survey was conducted in this land. This survey revealed the following information-

- A) Amount of cultivable land was more than 2.17 crore acre (2,17,25,827 acre);
- B) Amount of cultivated land was more than 1.91 crore acre (1,91,38,139 acre);
- C) Amount of cultivable fallow land was more than 4.7 lakh acre (4,70,518 acre);
- D) Amount of arable fallow land near about 16 lakh acre and
- E) Amount of forest was 5 lakh acres (5, 04,037 acre) (Agriculture Census, 1960).

Of the cultivable land, most of the land was used for food grains and the rest was used for cash crop. Jute was the dominant cash of that time.

According to the Master survey of Agriculture in East Pakistan in 1968;

- 1) The number of farms in 1964 was 61.4 lakh which rose to 68.7 lakh in 1968;
- 2) 83 land owner cultivates land by own and 17 land is cultivated by tenant as share-cropper of the land owner;

- 3) Near about 20 of the cultivators had no land and this number was increasing;
- 4) Almost all of the land were fragmented and divided (Rahman, 1979).

The agricultural instruments of the farmer since then were very primitive in nature. It was one of the glaring examples of stagnation of technology in the East Pakistan that the plough had not changed its forms in last two thousand year. A farmer was in need of two bullocks, a plough, a ladder, a rack, a leveling beam, and several scythes to plough, sow, and harvest his land.

After the independence of Bangladesh in 1971, its agriculture was trying to enhance a sustain growth in crop production. The most pressing problem was therefore the current state of stagnating yields and declining productivity in a range of food and non-food crops. Projections of food grain supply and demand were consistent in their conclusions that there is a widening food grain supply gap. With negligible scope for area expansion, as most of the arable lands of Bangladesh are already under cultivation, future growth continues relying on raising productivity per unit of land.

Ownership of land and land distribution scenarios after independence was a big bar to expected agricultural production and growth. These scenarios were getting worse with the rapid increase of population. With population increase, farm size in rural area started cutting down .According to the Report on The Bangladesh Census of Agriculture and Livestock 1983-84 (vol. 1), the number of total family of Bangladesh was 13.82 million of which 10.05 million families were attached to agriculture. Of the total 22.68 million acre, the amount of land under rural families was 13.02 million acre.

Table 1.1: Changes in Farm Ownership Distribution of Bangladesh Agriculture (1960-84)

Farm size(in acre)	Number of agro. Farm (%)		Volume of total agro. Land (%)	
	1960	1984	1960	1980
Small farm	51.6	70.34	16.2	28.98
Below 0.5	13.1	24.06	0.9	2.74
0.5-0.99	11.2	16.37	2.3	5.08
1.0-2.49	27.3	29.91	13.0	21.16
Medium farm (2.5-7.49)	37.7	24.72	45.7	45.09
Large farm (Above 7.5)	10.7	4.94	38.1	25.93
Total	100.00	100.00	100.00	100.00

Source: Agriculture and Livestock Census, 1983-84

There is seen a remarkable change in land distribution. In 1960, near about cent percent of the total land holders were belonging to large farm that used 38% land for agriculture where 52% small farms used only 16% of the total land. The number of small farm in 1960 was 52%, which rose to 70% in 1984, though their agricultural land had not increased. They would cultivate 16% land in 1960 which increased 29% in 1984. This unequal distribution of land creates a big crisis in agricultural advancement of the country. According to the statistics of Bangladesh Bureau of Statistics (BBS) 2006 the scenarios of the agricultural sector of Bangladesh are as follows:

Table 1.2: Bangladesh Agriculture at a Glance, 2006

Total family	17,600,804
Total farm holding	15,089,000
Total area	14.845million hectare
Forest	2.599 million hectare
Cultivable land	8.44 million hectare
Cultivable waste	0.268 million hectare
Current fellow	0.469 million hectare
Cropping intensity	175.97
Single cropped area	2.851 million hectare
Double cropped area	3.984 million hectare
Triple cropped area	0.974 million hectare
Net cropped area	7.809 million hectare
Total cropped area	13.742 million hectare
Cont. of agriculture sector to GDP	23.50
Contribution of crop sector to GDP	13.44
Manpower in agriculture	62
Total food crop demand	23.029 million metric ton
Total food crop production	27.787 million metric ton
Net production	24.569 million metric ton

Source: BBS, 2006 and Handbook Agricultural Statistics, MOA

Despite steady progress towards industrialization, agriculture remained the most important sector in Bangladesh. About 24% of Gross Domestic Product (GDP) of the country had come from agriculture sector. Besides, it had indirect contribution to the overall growth of GDP. Many sectors included in broad service sector such as wholesale and retail trade, hotel and restaurants, transport and communication were strongly supported by the agriculture sector. This sector had also provided employment for around 50% of the total labor force and seems to have managed to feed around 140 million people of the country.

During the last decade, significant changes took place in agriculture sector which include, among others, new production structure, use of high yielding varieties supported by fertilizers, pesticides, mechanized cultivation, irrigation etc. All these changes had contributed much to the increased production of food grains. The development of agriculture sector is very much urgent for poverty reduction, food security and sustainable development of our country.

Agriculture production was not being increased in proportion to rapid population growth. This additional pressure of population cuts down per capita production of the country. According the last Agriculture Census of 2008, some basic key features of Bangladesh agriculture:

Table 1.3: Bangladesh Agriculture at a Glance, 2009

Total number of holding	2,86,95,763
Total farm holding	1,51,83,183
Total area	14.845 million hectares
Cropping intensity	173
Irrigated land	11981329 acres
Net cultivated area	19097544 acres
Agriculture labor household	8844402
Surface water	79%
Land man ratio	0.06 hectare

Source: Bangladesh Bureau of Statistics, 2009

1.1.2 Cropping Pattern of Bangladesh

There are six seasons in Bangla calendar year. These are *Grisma* (summer), *Barsa* (rainy), *Sarat* (autumn), *Hemanta* (late autumn), *Shhit* (winter) and *Basanta* (spring). Each season comprises two months. But based on cropping pattern, there are three seasons during a year in Bangladesh. These are *Rabi* season or *Rabi* crop, *Kharif-I* or *Pre-Kharif*, and *Kharif-II*. *Rabi* season is commonly known as winter season in which innumerable vegetables are grown. It also known as the planting season of *Boro* the main crops of the year. Harvesting of *Boro* begins in the last part of this season and end in the first of part of *kharif-I*. *Kharif-I* or *pre-kharif* is known as *Aus* season actually starts from the last week of March and ends in May. Cultivation of *Aus* rice in this season is not commonly seen in all areas of Bangladesh. Especially in Dinajpur district, in the area under study, its cultivation is hardly seen. Plantation of *Aman* paddy starts in the last part of this season using natural water. *Aman* rice is harvested in *kharif-II*. It is extended over June to November. But for the better understanding of labor use in the study area, I have divided the seasons into three categories. These are *Boro* or *IRRI* season, *Aman* Season and winter season.

For getting a clear picture of agriculture, an agricultural calendar of Bangladesh can describe the total scenery (Agriculture calendar is available in the appendix). It also can help in knowing the life cycle of different crops and their cultural management practices. Furthermore, it can highlight labor use of different seasons, land use pattern, procuring seeds, overall planning for maximizing crop production etc. in a tabular way. Sowing, planting, looking after, harvesting of all crops including rice, jute, wheat, sugarcane, tobacco, vegetables, mustard, potato, pulses, oil seeds etc. have been described in the agricultural calendar.

Among the agricultural products of Bangladesh, since rice is the major crop, it dominates the cropping patterns largely. Depending on the land type, soil characteristics, and water availability, rice cropping may be single, double, or triple. In general, double or triple rice cropping is practised in high land areas. In medium lowlands, mixed cropping of Aus and broadcast *Aman* is a common practice, while in deeply flooded lands, single cropping of broadcast *Aman* (deepwater rice) in *Kharif*, or Boro in Rabi, is the common practice (Banglapedia, 2003). It also dominates the whole agro-economy in consideration of land use. It occupies 80% of the gross cultivated area and constitutes 75% of the total produce from all field crops (Rashid, 1991).

There is a variety of rice grown in the country of which Aus, *Aman*, *Jali*, *shail*, *Jali Aman* etc. are commonly cultivated in all areas of Bangladesh. Since the spread of dwarf, High Yielding Varieties (HYV's) in the late 1960's there are seven main and three minor genotypes of rice in Bangladesh. They are— *Shail*, HYV *Aman*, *Jali Aman*, HYV *Aus*, Local *Aus*, Hill *Aus*, Local *Boro*, HYV *Boro*, *Rayada* and *Bhadoi* (Rashid, 1991). All these rice grow in different districts round the year.

Of the other crops, wheat and maize are also grown in plenty in Bangladesh. They are sown in October and November and harvested in January and February. Among the other crops, various kinds of pulses, spices and vegetables are worth mentionable. There is a number of pulses such as lentil (*Masur*), *Khesari*, *Moog*, Black Gram (Mash), Pigeon pea (*Arhar*), Gram (*Chhola*) etc. are commonly found. Ginger, Garlic, onion, chili etc. of the spices are seen in every district of Bangladesh. Among the vegetables, Potato (*Alu*), Parable (*Potol*), Bitter Gourd (*Korola*), Bean (Shim), Radish (*Mula*), Brinjal (*Begun*), Tomato, Cauliflower (Phul-Kopi), Cabbage (*Bandha-kopi*), Bottle Gourd (*Laau*), Pumpkin, Cucumber, Lady's finger etc. are grown everywhere in Bangladesh.

1.1.3 Women's Participation in Agriculture

Women have been playing an important role in agriculture from the time immemorial. According to Swaminathan, the famous agricultural scientist, some historians believe that it was woman who first domesticated crop plants and thereby initiated the art and science of farming. While men went out hunting in search of food, women started gathering seeds from the native flora and began cultivating those of interest from the point of view of food, feed, fodder, fiber and fuel (NCW, 2005). This is why, it is said that agriculture is the invention of women. It has been initiated by women and developed throughout the world with the hands of man. Since its inception, women's participation in agriculture has been taking place in different ways and forms around the world and Bangladesh in particular.

1.1.3.1 World Perspective

Agriculture continues to play an important role in most non-industrial economies, as a major contributor to the country's export earnings and as a source of employment and livelihood. Official statistics often underestimate the value of women's work and their overall contribution to national wealth. They continue to provide a large proportion of the labor that goes into agriculture. Food and Agricultural Organization's (FAO) estimates show that women represent a substantial share of the total agricultural labor force, as individual food producers or as agricultural workers, and that around two-thirds of the female labor force in developing economies is engaged in agricultural work. Women play a significant role in agriculture, the world over. About 70% of the agricultural workers, 80% of food producers, and 10% of those who process basic foodstuffs are women and they also undertake 60% to 90% of the rural marketing; thus making up more than two-third of the workforce in agricultural production (FAO, 1985). In West Africa, up to 80% of the labor force in all trade is female. Yet, the role of women in these activities, so

important economically, has remained obscure for long because women seldom played any major roles in political activities or decision making processes.

Despite the fact that women produce much of the food in the developing world, they also remain more malnourished than most men are. In many rural societies, women eat less food than men do, especially when the food is scarce, such as just before the harvest, or when the workload increases without a corresponding increase in the food intake, (Roodkowsky, 1979). FAO has also noted that while the overall proportion of the economically active population (EAP) working in agriculture declined during the 1990s, the percentage of economically active women working in agriculture at the global level remained nearly 50% through 2000, with an even higher percentage in developing countries (6%) and it is 79% in the Least Developing Countries (LDCs). The percentage of economically active women working in agriculture in LDCs is projected to remain above 70%. Women make up an average 43% of the agricultural labor force in developing countries, ranging from 20% in Latin America to almost 50% in East and Southeast Asia and sub-Saharan Africa. The share is higher in some countries and varies greatly within countries, where rural women are employed; they tend to be segregated into lower paid occupations and are more likely to be in less secure forms of employment, such as seasonal, part time or low wage jobs (FAO, 1985).

A study reveals that women contribution in agriculture is not only significant but also they participate alone or jointly in all phases of agricultural production mentioning a high allocation of times than the male. 42.6% of the women have agriculture as their primary occupation including homestead, field work and agriculture wage labor and another 15.4% have agriculture as their secondary occupation mentioning a total involvement of 58% of the respondents (Safilios *et al.*, 1989).

1.1.3.2 Bangladesh Perspective

In Bangladesh, women play a pivotal role in agricultural sector. Traditional gender division of labor exists in all spheres of society especially in family where women work within or near the houses and men work outside the houses. This division of labor applies in large part to all rural families irrespective of social class. The external transactions are made by man while women contribute subsequently to value added through home based activities. It is well known that most of the rural women are economically active but the difficulty as in Bangladesh census has been in devising accurate definitions of economic activity. Most home yard activities are commonly excluded in employment surveys and much of the processing works of crop especially rice are not counted to these surveys.

According to United Nations System of National Account (UNSNA) guidelines, women's labor is generally only counted in national accounts if it takes place in the paid workforce, be it in a factory, on a farm, or in an office. If a woman works, but is not paid, then her labor does not count for anything in terms of national measurements of wealth (Efroymson, 2007). Similarly in Bangladesh, crop processing by women is integrated with child care, kitchen activities, looking after of livestock etc. Therefore, we cannot ignore the women contribution in our subsistence agriculture. If we look at the women, we can see that they are generally engaged in huge domestic chores in their families. Besides, they work near about in every steps of agricultural production. Blan (1978) has mentioned that participation of women in work place can be thought in three different forms as:

- a) Producing goods and services at home for sale or exchange elsewhere;
- b) Producing goods or services for self consumption within the household; and
- c) Working for wages outside the household.

In the Population and Housing Census 2011, it is mentioned that women constitute half in the population composition of Bangladesh. They are more than half (6.97 crore) of population of the country (BPHC, 2011). According to Labor Force Survey 2010, 'the number of economically active population (above 15 years) is 5.41 crore, out of which, a labor force of 5.10 crore (male 3.79 crore and female 1.62 crore) is engaged in a number of professions. Though, the number of work force in agriculture has been decreased compared to that of the previous fiscal, agriculture remained the highest (47.30) source of employment (BER, 2013).

According to Monitoring of Employment Survey (MES) 2009, it is observed that 39.22% of labor force is engaged in self-employment while it was 41.98% in Fiscal Year (FY) 2005-06. It may be noted that during the two survey periods, the number of self-employed labor force decreased by 2.76%. The survey also conducted that 20.20% of labor force was daily laborers and 21.18% unpaid family workers, which was 18.14% and 21.73% respectively in FY 2005-06 (BER, 2013). These data prove that a big portion of the households of the country depend upon agriculture and they also depend on hired laborers for doing their agricultural activities. In 2011-12 agriculture sector counted for nearly 19.29% of the Gross domestic product (BER, 2013).

In the contribution of sub-sectors of agriculture to GDP, women's contribution cannot be ignored. Besides their contribution to homestead agriculture is immeasurable. They traditionally undertake home gardening. It is seen in a study that, from the self's entrepreneur homestead agriculture, women of marginal and small families have contributed to family income 15% to 30% with fulfilling 90% to 100% demand of family nutrition (Meherunnesa, 2008).

From managerial activities to selling of labor, women's activities are associated with number of roles. In a study it is seen that women typically work 16 hours a day; that most women have no leisure time; and that they bear most responsibility for household chores, including many tasks related to income generation. Most women, even if they have a

servant, do their own cooking, and women generally assume full responsibility for tutoring and helping children with school work. Rural women perform a wider variety of tasks compared to urban women. While both men and women recognized that women's household activities constitute important work, they do not grasp the extent of its economic value. Yet the value of unpaid household work performed by house wives is approximately US \$69.8 to \$91 billion per year, depending on the economic value assigned to the tasks women performed daily (Efroymson, 2007).

In our country, if we make a list of works of agriculture in a season for 33 decimals of land (one *Bigha*), we see that gender wise participation of women is much more than the males. There is a list of works indicating mostly performed by male and female:

Table 1.4: A list of generally countable works for 33 decimals (one *Bigha*) of land in a season in the agriculture of Bangladesh

Sl.	Types of work	Participation by gender		
		Both	Male	Female
1	Selecting and separating of seed			✓
2	Seed preservation			✓
3	Seed sprouting			✓
4	Preparing seed bed	✓		
5	Watering to seed bed	✓		
6	Uprooting sapling	✓		
7	watering to field		✓	
8	Ploughing		✓	
9	Sapling/ Planting	✓		
10	Watering and looking after	✓		
11	Weed cleaning	✓		
12	Manure and insecticide using		✓	
13	Reaping paddy	✓		
14	Threshing	✓		
15	Sorting and Winnowing			✓
16	Drying up rice			✓
17	Parboiling and sunning			✓
18	Drying straw	✓		
19	Husking			✓
20	Dusting off rice			✓
21	Preserving rice			✓
Total (in number)		09	03	09

Source: Prepared by researcher based on observation

Table 1.4 shows that using 33 decimals of land (one *Bigha*) respondents were doing various works. There are 21 mentionable works in agriculture of which 09 works are performed mostly by both male and female. Female performs 09 works alone but male performs 03 works only. If we consider the duration of the works, the following features has been come out:

Table 1.5: Duration of generally countable works for 33 decimals (one *Bigha*) of land in a season in the agriculture of Bangladesh

Sl.	Types of work	Duration of work by gender (day)		
		both	Male	Female
1	Selecting and separating			3
2	Seed preservation			3
3	Seed sprouting			2
4	Preparing seed bed	3		
5	Watering to seed bed	1		
6	Uprooting sapling	2		
7	watering to field		1	
8	Ploughing		3	
9	Sapling/ Planting	3		
10	Watering and looking after	20		
11	Weed cleaning	3		
12	Manure and insecticide using		6	
13	Reaping paddy	3		
14	Threshing	2		
15	Sorting and Winnowing			1
16	Drying up rice			3
17	Parboiling and sunning			3
18	Drying straw	2		
19	Husking			1
20	Dusting off rice			1
21	Preserving rice			1
Total (in days)		39	9	18

Source: Prepared by researcher based on observation

The above table 1.5 shows that using 33 decimals (one *Bigha*) of land total 21 types of works were being performed by both male and female. It also shows that the duration of works is higher for female than male if we consider gender wise contribution to agriculture. Female invest 18 days alone whereas male invest just half time of them (9 days only). The works which are usually performed by both female and male are needed 39 days. So female time giving profile has taken be $(39/2+18) = 37.5$ days. But male's

profile has stood $(39/2+09) = 28.5$ days only. Thus if it is properly counted, we will see that women contribution to agriculture is higher than the male. Though there may raise a controversy of not giving equal time by them to agriculture.

1.1.4 Women Laborers, Nature of Their Work and Wage

In the four sub-sectors of agriculture in the study area, women laborers generally take part in crop sector only. Women's participation in every sub-sector of agriculture is seen all over the country, but their participation as laborers in other three sub-sectors except crop is hardly seen. In crop sub-sector, role of women as laborer can be seen in many ways. From preserving seeds in the granary, their works start and they continue unto threshing paddy and selecting of seeds again for the next season or year for sowing. Thus it is seen that in every step of agricultural cultivation process, women laborers have to take part. Besides agriculture, they have to work for household too. In both of the spheres, Women's participation is increasing day by day.

Usually homestead is considered as the basic unit of agricultural activities in rural Bangladesh. It is also the place of producing vegetables, livestock and the sources of fruits and timber trees. In this place, participation of women laborers is remarkably seen throughout the country. Moreover, after plantation, they work for cleaning weed, putting water, using insecticide and fertilizer, cutting and threshing paddy, sorting rice, winnowing them for dusting off, hay making etc. Thus it is seen that, in every steps of agriculture, women laborers are taking part with utmost enthusiasm.

Natures of work of women laborers are a little bit different from the works of male laborers. It is simply because of having no enough working opportunities for all in the rural areas of Bangladesh. People of rural areas themselves do their works all the years

round. If any time of the year they are burdened with works, only then they seek laborers for doing those works. Accompanied with the laborers they altogether do the piled up works. But the exception is seen in the every peak seasons of every year. In the peak season, irrespective of social class and gender all sorts of people get busy in doing the harvesting. For doing their harvesting as early as possible, because of having a fear of natural calamities, every family except landless and beggars need a huge number of labor. For meeting up the demand of additional labor, women are sought. Women laborers are asked only when male laborers are not found available. So many of the cases they are bound to sell their labor in less important works.

Actually the agricultural women labor market in Bangladesh is highly segmented. 'The labor absorption and wage rate depends on the following: (1) nature of works, (2) availability of labor, (3) population density and migration (4) the profitability of work, (5) Demand -supply of labor (6) the quality of life of the others laborers in the adjacent market and location of the respected area. Some studies have reported the increasing casualisation of labor, increasing feminization of labor due to male migration, decline in the customary and dependency relationship, increasing integration of labor market due to increased mobility of labor because of development in the means of communication and road infrastructure' (Sharma and Kumar, 2003).

In Bangladesh perspective, some important factors can be mentioned regarding women laborer's wage. These are: (1) Nature of work is an important factor of wage determination for women laborers in area under study. It is seen that if women are involved in less important work like winnowing, parboiling, drying rice in the sun, drying straws, plucking green chilies, parable and Bitter guard, lady's finger etc. their wages are paid less than the ordinary works of agriculture. (2) Availability of labor is another factor

of wage determination for them. If male or female are found available than the required need, women are not appointed or appointed in less wage than the market rate. (3) Population density and migration is very much associates with demand-supply relationship of labor market. (4) Profitability of work is also a factor of wage. In short, it is said that nature of work and wage of the women laborers is somewhat different from the work and wage of other agriculture laborers in the study area.

1.4.5 Theoretical Basis of Wage

Theory is a very important tool to explain a situation consistently and logically. A theory provides a set of interrelated concepts that present a systematic view of explaining or predicting events or situations with explication relationships between the concepts that have been reified as measurable and testable (Sharma, 2005). A theoretical system in the present sense is a body of logically interdependent generalized concepts of empirical reference (Talcott Persons, 1954). It helps in discerning measurable program outcomes, identifying timings for the interventions, choosing the right mix of strategies, improving intervention efficacy and effectiveness, and improving program replication.

Regarding women laborers' participation in agriculture, some theories of wage can be considered for explaining the matter. Samuelson and Nordhaus (2001) in their book 'Economics' opined that 'In analyzing labor earnings, economists tend to look at the average real wage, which represents the purchasing power of an hour's work, or the money wages divided by the cost of living. The same powerful gains for workers are found in every industrial country. Across Western Europe, Japan, and the rapidly industrializing countries of East Asia, there has definitely been a steady, long term improvement in the average worker's ability to buy food, clothing, and housing, as well as in the health and longevity of the population'. Regarding the wage fixation for the laborers, some theories are described as follows:

1.4.5.1 Subsistence Theory of Wage

This theory was originated with the Physiocratic School of the French economists and was developed by Adam Smith and the later economists of the classical school. The German economist Lassalle called it the Iron Law of Wages or the Brazen Law of Wages. Karl Marx made it the basis of his theory of exploitation.

According to this theory, wages tend to settle at the level just sufficient to maintain the worker and his family at the minimum subsistence level. If wages rise above the subsistence level, the workers are encouraged to marry and to have large families. The large supply of labor brings wages down to the subsistence level. If wages fall below this level, marriages and births are discouraged and under-nourishment increases death rate. Ultimately, labor supply is decreased, until wages rise again to the subsistence level. It is supposed that the labor supply is infinitely elastic, that is, its supply would increase if the price (i.e. wage) offered rises.

1.4.5.2 Wages Fund Theory

This theory is associated with the name of J.S. Mill. According to Wages Fund Theory wages depend upon two quantities, viz.:

- (i) The wage fund or the circulating capital set aside for the purchase of labor, and
- (ii) The number of laborers seeking employment.

Since, the theory takes the wage fund as fixed, wages could rise only by a reduction in the number of workers. According to this theory, the efforts of trade unions to raise wages are futile. If they succeeded in raising wages in one trade, it can only be at the expense of another, since the wage fund is fixed and the trade unions have no control over population. According to this theory, therefore, trade unions cannot raise wages for the labor class as a whole.

1.4.5.3 Residual Claimant Theory of Wage

The Residual Claimant Theory has been advanced by an American economist Walker. According to Walker, wages are the residue left over, after the other facts of production have been paid. Walker says that rent and interest are governed by contracts but profit is determined by definite principles. There are no similar principles as regards wages. According to this theory, after rent, interest and profit have been paid, the remainder of the total output goes to the workers as wages.

This theory admits the possibility of increase in wages through greater efficiency of employees. In this sense, it is an optimistic theory whereas the subsistence theory and wages fund theory were pessimistic in nature.

1.4.5.4 Marginal Productivity Theory of Wages

This theory state that, under the condition of perfect competition, every worker of same skill and efficiency in a given category will receive a wage equal to the value of the marginal product of that type of labor. The marginal product of a labor in any industry is the amount by which the output would be increased if a unit of labor was increased, while the quantities of other factors of production remaining constant. Under perfect competition, the employer will go on employing workers until the value of the product of the last worker he employs is equal to the marginal or additional cost of employing the last worker. Further, under perfect competition, the marginal cost of labor is always equal to the wage rate, irrespective of the number of workers the employer may engage.

1.4.5.5 Modern Theory of Wages

According to this theory, the wages are determined by the interaction of demand and supply as in the case of ordinary commodity. Thus, this theory is also referred to demand

and supply theory. Paul Samuelson (1970) in his book 'Economics' mentioned four dimensions for the supply of labor: (1) population, (2) proportion of the population actually in the labor force, (3) average number of hours worked per week or year by workers, and (4) quality and quantity of effort and skill that workers provide. This theory has been discussed with the following features:

Demand for Labor: According to the modern theory of wages, the demand for labor reflects partly laborer's productivity and partly the market value of the product at different levels of production. Following are the factors that determine the demand for labor:

(a) Derived Demand: The demand for labor is a derived demand. It is derived from the demand for the commodities it helps to produce. Greater the consumer demand for the product, greater the producer demand for labor required to produce that commodity. It may be observed that it is expected demand and not existing demand for the product that determines demand for labor. Hence, the expected increase in the demand for a product will increase the demand for labor.

(b) Elasticity of Demand for Labor: The elasticity of demand for labor depends on the elasticity of demand for commodity. According to this theory, the demand for labor will generally be inelastic if their wages form only a small proportion of the total wages. The demand, on the other hand, will be elastic if the demand for product is also elastic or if cheaper substitutes are available.

(c) Prices & Quantities of Co-Operating Factors: The demand for labor also depends on the prices and the quantities of the co-operating factors. If the machines are costly, the demand for labor will be increased. The greater the demand for the co-operating factors the greater will be the demand for labor, and vice versa.

(d) Technical Progress: Another factor that influences the demand for labor is technical progress. In some cases labor and machineries are used in definite proportions.

After considering all relevant factors as discussed above, the employer is governed by one fundamental factor, viz., marginal productivity.

The change in wage rate determines the direction of change in the demand for labor but the degree of this change depends on the elasticity of demand for labor. In case of elastic demand, a small change in the wage rate will lead to a considerable change in demand for labor, and vice versa. Whether the demand for labor is elastic or not will depend on (i) the technical conditions of production, and (ii) elasticity of demand for the commodity which that labor produces. Generally the short term demand for labor is less elastic than the long-term demand. That is why the employers and trade unions adopt a stiff attitude in wage negotiations.

1.4.5.6 Applicability of these Theories to Women Laborer

Applicability of these theories for fixing up the wage of the laborers of informal sectors of Bangladesh is not beyond dispute. According to these theories, there are many pre-requisites for the determination of wage which are absent here in informal sectors of Bangladesh. Especially, for the wage determination of the women agricultural laborers, these theories are totally ineffective as the women laborers are not recognized as the occupational group of the labor market of Bangladesh and as the most of them are involved with domestic chores in pre and post harvesting operations. Besides, there are neither specific laws nor any labor unions for the welfare of the women agricultural laborers. Unemployment, under-employment and disguised employment have made this situation more unsuitable for the application of these theories.

1.2 Statement of the Problem

In rural Bangladesh, as woman constitutes half of the population, they put half of labor in agricultural activities. Especially in pre harvesting and post harvesting agricultural activities, women perform the entire work. While peasant men are responsible for all agricultural tasks performed in the field, such as ploughing, transplanting and harvesting, women are burdened with all household chores and with 'indoor' agricultural tasks, i.e. the pre-planting and post-harvesting operations. They undertake to handle the seeds, and do arduous and labor-intensive tasks like winnowing, parboiling and husking.

Apparently it is seemed that for poverty along with other related causes women got involved more in agriculture. The traditional gender division of labor is changing more and more women are entering into the labor market due to increasing landlessness, massive poverty, increasing prices of daily essentials etc. Urban employments opportunities of work force and international migration of men are also driving them into agricultural work' (Fahima, 2005).

Nowadays, women do work for money not only in family circle but participate in the whole production process with combating their male counterparts in the field also. They are engaged in a variety of works which are more in number. It is because of their wide access to every nook and corner in society. There are some agricultural works in the society which are only for women. Men are not expected to do those works. In the field of agriculture, their types of work are changed in respect to season. Especially in winter season, women laborers are to do many less important tasks in the vegetable land. Plucking vegetable, sorting them, cleaning for sale, drying and preserving etc. are time consuming and caring. These types of work are also treated as less important and male laborers are not encouraged to do them.

Usually women laborers' work starts more early and continues a longer time. Their wages and other wages related benefit are also a little bit different in nature. Sometimes they work only for money and for some cases; it is only for food or necessary things. Thus women laborers do innumerable work in agriculture and contribute a lot to the labor market of Bangladesh.

Generally women in Bangladesh have lower status as compared to man. They do not get enough support in proving their capabilities. This is also true for women laborers. The religious misconception and faulty social system do not permit them to go outside home for working freely. With facing a lot of difficulties, women laborers are continuing working in agriculture. No doubt, the contribution of women laborers to agriculture is encouraging and is not necessarily less than that of the male laborers. But their contribution and recognition are not acknowledged by society and the state.

Women laborers are earning members of family. As earning members how they enjoy their freedom is a workable issue. Now the situation with regard to their participation has undergone a very remarkable change. This is a remarkable change from the past and it indicates that given employment opportunities and mobilization, the women laborers has taken come out of the barriers created by social and religious values and has taken play a proper role in the development process of the country.

As the poorer and vulnerable section of society, women laborers are generally neglected and thereby they are excluded from decision making in the family and in community development activities regarding such matter as family expenditure and investment, schooling of children etc. Now time has come to identify the obstacles to their work and eradicate the obstacles from the society so that women laborers can easily take part in agriculture sector and put a significant contribution to the development of Bangladesh.

1.3 Research Questions of the Study

In the light of the reviewed literatures (Review of literature available in the chapter 2), some questions have been raised. These are:

- 1) Whether there are seasonal variations in the participation of women laborers in agriculture?
- 2) Why rural women are being engaged in agriculture and whether there are any factors affecting their participation in it?
- 3) What types of problems are faced by the women laborers' in respect to their participation in agriculture?
- 4) Why do women laborers get equal wage in agriculture in comparing with males?
- 5) What is the nature of empowerment for women laborers in Bangladesh?

1.4 Objectives of the Study

The general objective of the study is to observe the participation of women laborers in agriculture of Bangladesh especially in the district of Dinajpur. Some specific objectives of this study are:

- 1) To investigate the seasonal variations of women laborers in respect to their participation in agriculture;
- 2) To identify the determinants of making them laborers in agriculture;
- 3) To explore the constraints of their participation in agriculture; and
- 4) To find out the state of empowerment of the women laborers in the study area.

1.5 Logical Framework of the Study

Seasonal Variations of Women Laborers in Agriculture	Season	Types of work		Durations/Wages /Facilities	Total
	Boro/Amanseason	Preparing seed bed		Durations* Wages+Facilities	
		Uprooting paddy shoots			
		Transplanting paddv –shoots			
		Weed cleaning			
		Fertilizer/insecticide using			
		Reaping paddy			
		Threshing			
		Rice boiling and drying			
		Husking			
		Dusting off rice			
		Hay making			
		winter	Potato related activities		
	Parable/bitter gourd / green chilies related activities				
	Onion / garlic / ginger related activities				
	Corn related activities				
	Sweet potato related activities				
	Pulse related activities				
	wheat related activities				
	Others vegetable related activities				
	Other ncome generating work	Domestic work		Durations * Wages + Facilities	
		Embroidering in quilt			
		Byre cleaning			
Empowerment of the Women Laborers in Bangladesh	Verifiable indicators		Variables		
	Mobility		a) visiting market for shopping, b) visiting market for selling, c) visiting healthcare, d) going to a movie, e) visiting outside the village, f) visiting cooperative society or NGOs, g) moving within the village independently, h) visiting friends and relatives, i) visiting bank/union parishad.		
	Decision making		a) enrolment of children to school, b) going to doctors/hospital, c) involvement with any cooperative/NGOs, d) visiting to relatives, e) purchase of household necessities, f) purchase/ sell of land, g) adoption of family planning, h) spending her own money, i) spending her husband’s money, j) marriage of their sons and daughters, k)when to have children, l) number of children to have, m) offering presentation, n) borrowing/lending money, o) house repairing.		
	Political and legal awareness		Name of chairman of her union parishad, b) name of ward member of her area, c) name of the prime minister, d) name of the parliament member of her area, e) casting of vote independently for elections, f) significance of registering marriage, g) permission required to second marriage, h) law of inheritance, i) bargaining about wage fixation, j) protesting against unfair/fair prices, k) protesting against violence in family, l) protesting against violence in society.		

1.6 Rationale of the Study

Agricultural workers are one of the largest occupational groups in the labor market of Bangladesh. Of the laborers, women agricultural worker is a significant part that does a variety of agricultural activities in rural areas. Though their participation in agriculture is increasing day by day, the recognition and proper evaluation of their participation is yet to be done. This study should be undertaken for the following reasons:

Firstly, women are the growing labor force in the agriculture sector of Bangladesh. The growth rate of women in the labor market of Bangladesh is higher than that of male. According to LFS of 2004, the participation of women in both rural and urban areas has been increasing more than male. In rural community in particular this rate is high which indicate growth rate 2.9 for male and 6.2 for female (BBS, 2004). For a rapidly growing occupational group, it requires a study.

Secondly, most of the women's work in the rural area is devoted to agriculture. They are involved in every stage of food production. They also contribute in preparing food consumed locally and tend to work for longer hours than men. In spite of active participation in agriculture, they have not equal access to the essential resources and services, such as land, credit and training. Their contribution could be much greater if they get recognition and proper evaluation of their work in it.

Thirdly, 'feminization of agriculture' is being taken place rapidly in the rural areas of Bangladesh. Though Women's participation in agriculture has been seen at dawn of human civilization, their participation at present is quite different in nature. A study should be conducted to find out the factors of their increasing participation in agriculture.

Fourthly, there is seen a different scenery in every informal sector of Bangladesh. Agriculture is an informal sector of labor consumption. How it maintains and manages laborers, their employment, wage etc. in this respective field is an important issue. A study can unearth all the existing scenarios in agriculture.

Fifthly, women in rural area are very vulnerable and disempowered section of society. Women laborers are supposed to be more vulnerable as they are from the poorest class. But they are not the other poorest class as they are earning members of family. As earning members, how they feel and enjoy their freedom is an interesting matter. To find out the nature of empowerment of the women laborers, this study can be taken under consideration.

Sixthly, researcher has studied a number of literatures to find out the nature of participation of women laborers in agriculture, but come across no study directly related to this. This is why researcher conceptualizes that such type of study should be carried out.

Finally, Women laborers put a big contribution to the country's agriculture but recognition and evaluation of their work is not seen in the country's profile. Even though, they are not still recognized as a professional group in the labor market of Bangladesh. Researcher hopes that this study has delved into the real picture of women laborers in a particular district and put forward some suggestions to the policy makers for the well being of the respondents of the area.

1.7 Operational Definitions of the Key Terms

1.7.1 Laborers/Labor

Regarding laborers or labor force, there are two sets of definitions. One is the usual or conventional definition and other is extended definition. According to the usual or conventional definition, the labor force or economically active population is defined as the persons aged 10 years and above, who are either 'employed' or 'unemployed' during the reference period of time and any person of the same age putting in a minimum of one hour in family farms or enterprises for pay or profit during the reference period (BBS, 1996). Under the extended definition a large number of persons particularly womenfolk in agro-based rural household in SAARC countries who mostly perform various non market production activities (as defined by U.N. system of National Accounts, 1993) are included in the economically active population.

Arens & Beurden (1977) term agriculture laborers as small peasant, poorest peasant, landless peasant and semi-proletarian peasant in their study 'Jhagrapur' who are depend heavily on selling their labor but they suffer from un-and underemployment. Some of them get a chance to take land in sharecropping. Many are exploited by moneylenders. Some of them receive additional income from pretty trade. Their situation is characterized by a high degree of insecurity. They form the bulk of the peasantry, and are the most exploited ones. Based on these definitions, laborers in this study have been the women who are employed or unemployed in agricultural activities in rural areas and get or expected to get wage or benefit or any other exchange for their labor.

1.7.2 Women Laborers

Waged agricultural workers are the women and men who labor in the crop fields, orchards, glasshouses, livestock units, and primary processing facilities to produce the world's food and fibers. They are employed on small- and medium-sized farms as well as large industrialized farms and plantations. They are waged workers because they do not own or rent the land on which they work nor the tools and equipment they use and so are a group distinct from farmers (Hurst, 2007).

According to National Commission on Labor of India 'An Agricultural laborer is one who is basically unskilled and unorganized and has little for his livelihood, other than personal labor' (Srivastava, 1993). Women Laborers are those people who are engaged in raising crops, planting trees on payment of wages in rural areas of Bangladesh. And those who are engaged in agriculture and other agricultural activities like dairy farming, horticulture, raising of livestock, bee keeping, poultry etc. in exchange of money and /or benefit.

1.7.3 Agriculture of Bangladesh

Bangladesh agriculture consists of four sub-sectors namely crop, livestock, fishery and forestry. This study has taken all these four sectors under consideration in which rural women laborers are involved. In crop sub-sector, women participate in pre-harvesting, harvesting and post-harvesting activities. Besides in homesteads gardening they put a lot of labor. Similarly women's time are spent in planting trees, rearing cattle and fisheries. All these works have been treated as Bangladesh agriculture in my research.

1.7.4 Empowerment

Rao and Kelleher (1995) define women's empowerment as the capacity of women to be economically self-sufficient and self-reliant with control over decisions affecting their life options and freedom from violence. The term 'empowerment' in this study has been used creating capabilities of women for having mobility for work, increasing political and legal awareness's and enhancing decision making power of the women laborers. Actually this term is used for the poor are organized and made aware of the real causes of their impoverishment, a leadership is developed among themselves, their material resources are mobilized, income and employment are increased, and capacities are developed to cope with natural disasters.

1.8 Limitations of the Study

Generally social science research is associated with a number of limitations. This study is not an exception to that. In carrying out of the study, researcher faced a number of difficulties which are as follows:

- a) This study has been carried out generally on women agricultural laborers of Bangladesh and in particular of Dinajpur district. It has not considered all women laborers of Bangladesh in its population. If it could consider the whole Bangladesh as its area of study, result could be more accurate and accepted to the policy makers.
- b) Researcher found a lot of difficulties in selecting an appropriate and optimum sample size for the study. As there is no list or accurate statistics of women agricultural laborers of Bangladesh, researcher had to select a big sample for

finding out the actual scenarios of women laborers participation. Usually a big sample needs more attention, money and time. If there is a list of women laborers, a small sample would be representative which could save time labor and money and more labor could be given on the other areas of the study.

- c) Researcher had to collect data in a specific time period of a year. If researcher could collect data at the end of every season i. e. three times in a year, data from a fresh memory would be collected. But for the time limitation, researcher had collected data once of year which is a limitation of this study.
- d) Respondents had to answer questions based on their memories as they had no written documents of their appointment as well as selling of their labor. For answering from the memories, wrong information might come out to the study.
- e) Nature of work and wage of women laborers in some cases, quite different from the work and wage of male laborers. Their works are time consuming in nature and sometimes they are appointed for a limited time. But in the study, their limited time has been counted as a day which could influence the result of the study.
- f) Interview schedule has been made with a number of questions. Answering to a large number of questions in an interview was a time consuming affair which grew lack of cooperation in collection of data too.
- g) A large number of the respondents are illiterate and that's why they could not understand all the language of the data collectors. Repetition of questions consumed more times and it was a bar to smooth data collection of the study.
- h) Researcher also found a big difficulty in selecting professionals and experts who would facilitate researcher in the study area.

With having all the difficulties faced in carrying out of the study, researcher believes that he has accomplished the entire research work carefully and enthusiastically. He has tried his level best to minimize all the hurdles and difficulties and accommodate all the addressable issues to complete this research work.

CHAPTER II REVIEW OF LITERATURES

Introduction

As far as I have gone through, there has not been any research conducted specifically on women laborers' participation in the agriculture of Bangladesh. I have studied a number of books, articles, reports, theses etc. to know the participation of women laborers in agriculture. But A few specific literatures on women laborers were found. Some closely related literature from home and abroad have been reviewed in this purpose. These relevant literatures have helped me a lot to get a picture of women laborers participation in agriculture. I have presented these literatures in this chapter under the following sub-headings:

2.1 Women's Participation in Agriculture,

2.2 Women Laborers in Agriculture,

2.3 Women and Empowerment, and

2.4 Women laborers and labor laws.

2.1 Women's Participation in Agriculture

Jaim, W. M. H. and Hossain, M. (2011) in their household data analysis report '*Women's Participation in Agriculture in Bangladesh 1988-2008: Changes and Determinants*' have mentioned that 66% of women participated in agricultural activities in 2008 that was 58% in 2000. The allocation of time has also increased from 1.11 to 1.28 hours per day although this was less than 1988 level. But the participation was limited to mostly livestock and poultry farming which was a marginal economic activity with allocation of only 0.91 hour of labor per day. The participation in crop farming was low. Only 3.85% of the female workers participated in crop farming in 2008, compared to 53%

for men. But crop farming is a relatively full time activity for them with allocation of 2.92 hours per day in 2008 which had reduced from 4.30 hours per day in 1988. Only about % of the women participated in the agricultural labor market in 2000 and 2008. Women's participation in agricultural labor market remained insignificant at 1.07% of agricultural workers compared to 23 for male workers in 2008.

Gap: It is a household data study in nature. It shows only changing scenarios and determinants of changes of women in agriculture. It has not considered the participation of women laborers in agriculture.

In a ESA Working Paper (No. 11-02 March 2011) of the Food and Agriculture Organization of the United Nations Prepared by the **SOFA Team 2 and Cheryl Doss** entitled '*The role of women in agriculture*' it is mentioned that women had invested more time in agriculture in African and Asian countries. They constituted half and more than half in some cases of the labor force considering age and social classes and their participation in rural labor markets showed much heterogeneity at the regional level, but women were over represented in unpaid, seasonal and part-time work, and the available evidence suggested that women were often paid less than men, for the same work. It has been shown that women's roles were diverse and that they were varied across regions and countries. These roles cannot be understood properly, and they had suggested that no interventions for the development of women's laborers would be fruitful without understanding their differential access to land, capital, assets, human capital, and other productive resources.

Gap: in this working paper of FAO, women's participation in agricultural work has been nicely depicted and variations of their work are also described in details. Furthermore it

shows wage discrimination of man and women in the different regions of the world. However this study does not highlight women laborers participation and the factors of their participation in the study.

Oladejo, J. A., S. O. Olawuyi, & Anjorin, T. D. (2011) in their article '*Analysis of Women's participation in Agricultural Production in Egbedore Local Government Area of Osun State, Nigeria*' have shown that household size, marital status and local taboos had significant impact on the women's participation in agricultural production; Most of the respondents were illiterate with non-formal educational status which directly informed their participation in agricultural production. The study concludes that there is high rate of involvement of women in agricultural production in the study area; hence the role of some socio-economic variables as well as assets such as social capital, landed-property, cash as well as savings is central in determining the participation level or perception on agricultural production.

Gap: Factors affecting women's participation in agriculture and their access to assets are studied but no focus on women laborers are given here.

Akter, S. & Farrington, J. (2011) in their article '*What determines poverty transition? An investigation of women livestock farmers in Bangladesh*' revealed that livestock-based activities had put a positive contribution on reducing poverty in the study area. Among the respondents, after joining the livestock programs, downward mobility regarding their status in respective socioeconomic position in the society was nil. Diversification of jobs through international migration, regular jobs in the public and private sectors and other non-farm occupations were different options for coping with poverty. Access to education, land, assets, and credit were associated with household welfare, suggesting

that these resources were significant determinants of poverty. With them, poor people had found opportunities in agriculture and non-agricultural routes out of poverty. It was clear from the study that poverty-mitigation efforts like the Bangladesh Poultry Model could reduce poverty, but the positive impact on welfare was much less than impact-evaluation studies that use qualitative measurements of income, empowerment, etc had been estimated. The impact on welfare could have been much higher if some of the support had been more flexible, allowing a complementary or different livelihood to promote agribusiness: agriculture and business were important livelihoods for the majority of the farmers but were much less remunerative.

Gap: Women's participation in livestock program and their access to education, land, credit has been shown in this study. It does not deal with the other sub-sector of agriculture like crop, fishery, forestry as well as women laborers involvement in livestock programs.

Hillenbrand, E. (2010) in her essay entitled '*Transforming gender in homestead food production*' explained that women involved in smallholder agriculture in Bangladesh had been facing a number of challenges. Gendered norms about women and men's asset control ('men control big things, women control small things'), and an assumption that women in agriculture are concerned with subsistence only, had reinforced biases in policies and institutions. This had worsened women's disadvantages in accessing markets, credit, technology and services, and had perpetuated the lack of recognition surrounding women's role in farming. In Bangladesh, women food producers were remained largely excluded from land ownership, technology training, tools, and extension advice. In spite of the fact that women have a critical, and growing, role in agriculture in Bangladesh, in the rural development context there was an entrenched inability to recognize women who produce food as 'farmers' in their own right. Women traditionally contributed significant

unpaid and unrecognized labor to post-harvest processing of rice, the main crop produced in Bangladesh. A growing proportion of the workforce in agriculture and fisheries in Bangladesh was female and the majority of women were employed in these sectors. In 2006, about 75% of the female labor force in Bangladesh was occupied in agriculture and fisheries. As men migrated to higher-paid jobs and non-agriculture occupations, women from extremely poor households, and women who were left as de facto heads of households, had transgressed gender norms regarding the roles of women and men in agriculture, and cultural restrictions on women's mobility, to farm their family land, or work as daily agricultural laborers. These women were now involved in traditionally 'male' activities, including transplanting, irrigating, spraying, and other paddy-production activities. In addition, with increasing access to micro-finance and Non-government Organization (NGO) programs, Bangladeshi women were increasingly involved in small- or subsistence-level livestock, poultry, and horticultural production at the homestead level.

Gap: Researcher in her research presented an elaborated analysis of women's participation in the agriculture highlighting the obstacles to their smooth participation in it. Nevertheless no factors and impediments of women laborers' wages in agriculture has been explained in this study.

Alim, M. A. (2009) in his article '*Changes in villagers' knowledge, perceptions, and attitudes concern gender roles and relations in Bangladesh*' described that traditional attitudes towards gender play a significant contribution in determining role in the rural Bangladesh. There had been seen that because of violation of norms, quarrels and family upheaval had come out. Few respondents held this attitude, with most believing that husband and wife must have equal responsibility in the family. Besides, women might be entirely responsible for their families, so their opinions in decisions on household matters

should have been equally heard. This would have enhanced the relationship between husband and wife and brought economic improvement to the family. Joint ownership of household assets had reduced violence against women and would have provided security for them. It was supposed that factors such as traditional social norms, values, and customs, the lack of all kinds of opportunity for women, and lack of proper training might have impeded such changes.

Gap: This study shows that villager's attitudes, perception and knowledge play a crucial factor in determining roles of women in Bangladesh. It moreover tells that joint participation in work of husband and wife can reduce violence against women. Instead in context of the present study, it does not discuss any of issues of women laborers.

Chowdhury, F. (2007) in her unpublished PhD thesis '*Contribution of Women in Homestead Agricultural production in Rajshahi District in Bangladesh*' showed that contribution of women in homestead agricultural production had an influential impact on family relation and women empowerment. She also argued that for giving women rights and status, their contribution to homestead agriculture and familial activities should be counted to GDP of the country.

Gap: Fahmida chowdhury in her research has studied contribution of women in homestead agriculture in rural Bangladesh. She has not done any task on women laborers and their contribution to development.

Oakley, E. & Momsen, J. H. (2007) in their writings '*Women and seed management: A study of two villages in Bangladesh*' discussed that Bangladeshi women's responsibility for post-harvest processing was important to their connection with seed management. Both areas of responsibility took place following the harvest and require similar skills.

Men had greater authority over field activities and homegarden production was the exclusive domain of women. Seed management was seen as an extension of women's domestic duties: women were responsible for all seed processing, storage and exchange for field as well as home garden crops. The vast majority of seeds sown were saved on-farm by women, revealing important cultural, economic and environmental implications for agrobiodiversity conservation and local differences. Women in both studied villages had performed a wide array of activities related to farming as well as household production and management. They had prepared and cooked all of the meals. They also had tendency of home gardens, parboil rice, dry rice straw and looked after livestock (which includes milking, feeding, washing, pasturing, drying manure and storing fodder). They had gathered wild foods and animal fodder growing along the field edges, watched over fields, managed hired men, transported inputs and equipment to and from fields, made crafts such as quilts, and were generally in control of the household sphere, washed the dishes, cleaned the house and the courtyard, washed and dried clothes, looked after children and had engaged in post-harvest processing such as jute fibre cleaning and drying. In the study it was found that women were involved in field activities like planting and weeding to varying extents despite the fact that these were mostly performed by men. A few women made it quite clear that they had helped their husbands with all field tasks. A significant finding was that women often decide, alone or with their husbands, on which crops to plant and on whether local or improved variety seeds were to be used in field crops. In both villages, several women assumed full responsibility for these tasks because their husbands worked off-farm.

Gap: Women knowledge and participation in seed management has been found out of the study. It describes no issues of women laborers participation.

Elizabeth, S. (2006) in her article '*Participatory assessment of the impact of Women in Agriculture Programme of Borno State, Nigeria*' mentioned that women play a vital role in agriculture if they had got government assistance properly. Women, in most of the cases, put more time and concentration than men and thus they become more successful than their male counterparts.

Gap: It is a study carried out in the context of Nigeria. It shows women's success in agriculture. On the other hand it does not present anything related to women laborer.

Karim, K. M. R. (2006) in his paper '*Gendered Social Institutions and the Management of Underground Irrigation Water Resource in a Bangladeshi Village*' has explained that Gender norms constrained women from joining field-based agricultural/irrigation activities, although a few poor women were able to transgress such traditional gender norms by working on the fields. Poor women were also being mobilized for irrigation canal cleaning and maintenance operations as informal laborers. Researcher also observed that, people's attitudes and perceptions of gender roles and status in Bangladesh were broadly shaped by purdah ideology. As purdah did not allow women to move freely, it was perceived that men's primary responsibility was to support their families financially whereas women's main responsibility was to care for their families through their reproductive roles. Traditionally, in agriculture in rural Bangladesh, men carried out field-based stages of production, while the activities located in or near the homestead were the preserve of women, along with various domestic chores. In the case of rice production, the primary food crop, all tasks from sowing to threshing was traditionally the responsibility of men. Threshing appears to mark a transition point where both women and men can participate. However, all post-threshing stages necessary to turn paddy into rice ready for consumption or sale were supposed to be performed by women. Transport of products to the marketplace, on the other hand, is undertaken by men. Thus there were seen a wide role segregations *Amang* the rural people of Bangladesh.

Gap: Women's participation in the management of Underground Irrigation Water Resource has been presented in this study. It reveals the nature of participation in the ownership of STW (Shallow Tube Well) and DTW (Deep Tube Well) in the study area. It does not discuss anything about women laborers in agriculture of this study.

Hossain, M. & Rahman, R. I. (2003) in their book '*Bangladesher krishi O Gramin Unnayan*' commented that modern irrigation had created a wide scope of employment in the rural areas of Bangladesh. There were 13% labors needed more in the rural areas where modern irrigation is in operation. Laborers in the study area where irrigation was not in operation had employed their additional labor in family farms due to lack of wage based employment. Family labor and wage based labor had put a remarkable positive change on income and employment in the wage earners families. Due to the introducing of modern irrigation system, opportunities of employment of labor were quite more in the study area. Labor migration in the irrigated area was also seen from the other areas.

Gap: This is a very good study carried out on the agricultural laborers of Rangpur-Dinajpur district. It showed only modern irrigation impact on the wage and employment scenarios of Bangladesh. But it discussed no aspect of women laborers employment and their contribution to the labor market of Bangladesh.

Shafique uz Zaman (2002) in his survey report entitled '*Women's Role and Status in Bangladesh Agriculture*' showed that Women after joining agricultural work had taken a double burden, which included earning money by working in the field and at home, and maintaining household works. The accomplishment of both of these work needed huge time leaving for them no leisure or recreation. Findings of this study show that on average, women spent about 1703.6 hours per year for crop agriculture in the field,

1064.4 hours for homestead crop cultivation, 1855.3 hours for livestock production, 1418.0 hours for poultry, 404.8 for pisciculture and 7.4 hours for fisheries. In other words, the women spend annually 6451.2 hours in non-household works. If the household works are considered including cooking, taking care of children, then the female members in the rural areas had hardly any time other than sleeping at night. The distribution of time showed that in the field level crop agriculture, the female laborers had spend maximum time in crop drying and crop crushing which indicated intensive involvement of women in the post harvesting period. In the household crop cultivation, the female member invested their maximum time in vegetable collection and cleaning. The livestock and poultry production had marked a wide variation in the distribution of times *Amang* the study zone.

Gap: This study explores that women in the rural area are burdened with various kind of agricultural work. They participate in agriculture in and around the home and in field also. Beside they participate in the regular work of family maintenance. On the other hand, present study does not deal with women's participation. It discusses women laborers participation in agriculture.

Mujeri, M. K. & Hussain, I. (2001) in a country workshop paper entitled '*Poverty Alleviation through Improved Irrigation Practices: Bangladesh Perspectives*' commented that irrigation interventions had a major and direct effect on agricultural performance and poverty reduction. For poverty reduction, Bangladesh had needed to achieve high growth over protracted periods to allow tangible improvements in agriculture and in the living standards of the population. It needed to be recognized, however, that reducing poverty was not a question of increasing growth and agricultural production alone. It was necessary to address the underlying institutional, structural, and socio-cultural factors that determine access of the poor to assets and voices and regulate competing claims to

limited resources. In order to ensure that irrigation interventions could generate pro-poor outcomes, these should have been linked with production characteristics of agriculture and available natural resources.

Gap: This study is quite different from the present study. Because it analyses the impact of improved irrigation Practices on poverty alleviation of Bangladesh. It does not tell anything about the agricultural women laborers of the country.

Rahman, S. & Routray, J. K. (1998) in their article '*Technological Change and Women's Participation in Crop Production in Bangladesh*' cited that women were involved only in post-harvest processing of crops that was underestimated their contribution to agricultural production. Women's share of total labor was 10%-18% in food grain production and 6-48% in non-cereal crop production. Increased demand for labor owing to technological change was almost entirely being met by hiring male labor. The few women who were hired were paid significantly lower wages than men, revealing unequal opportunities and a lack of bargaining power for women in the hired labor market. An analysis of the behavior determining the adoption of modern technology indicates slack of women's participation in technology adoption decisions. An examination of the determinants of labor demand indicated that an increased labor demand was met with more female family labor, thereby increasing the women's workload. Agricultural diversification also had a high potential to promote women's employment as hired labor. A decentralized crop diversification policy coupled with a policy of equal minimum wage for men and women could promote women's gainful employment. Also, gender-sensitive educational programs through collaborations between government and NGOs could work towards a balanced development in the long run.

Gap: In this article, there is seen women's participation in agriculture especially in post harvesting period. Women's labor gets a low rate in wages comparing to their male counterpart because of having lack in bargaining power opportunities in rural areas. Because of technological Change, labor shortage is being met, in most of the cases, by female family labors and underpaid female laborers. This study also did no work on women laborers and on their contribution on labor market in rural Bangladesh.

Zaman, H. (1995) in her articles '*Patterns of Activity and use of time in Rural Bangladesh: Class, Gender and Seasonal Variations*' mentioned that women laborers had been working in rich and middle peasant households for livelihood. They had observed purdah in limited sense (they cover their head with a sari). She also added that women from small and landless households were involved in field agriculture and wage labor though they knew it as low status work in rural Bangladesh. The patriarchal bias in the agricultural labor market had preferred men over women for field agriculture. Women were hired only when the men labor supply was exhausted.

Gap: Habiba Zaman has tried to search out the patterns of activity and use of time of the women in agriculture based on class, gender and seasonal variations. In her village study, she has shown a little about women laborers and their participation in agriculture. She has not done anything about seasonal variations of women laborers, their working reasons, constraints and state of their empowerment in her study.

Virdi (1993) mentioned in his report '*Reaching Rural Women: Successful Approaches in the Crop Diversification Program*' that women in Bangladesh had almost always been associated with agriculture. They were involved in food gathering, food preparation, post-harvest activities homestead gardening and more recently in field agriculture. There were also a number of works like these which show women's participation in agriculture in different forms.

Gap: Rural women's participation in crop diversification has been studied but women laborers in agriculture have not been taken under study.

Hoon, V. (1991) in his country paper '*The Impact of High Yielding Varieties and Irrigation on Rural Women in Asia*', had described that most female labor were being used in rice farming system in rural areas. They contributed most of their labor in transplanting, weeding and harvesting. They contributed in rice production more than 50 in India, Nepal, Indonesia and roughly 33 in South East Asian Countries.

Gap: This study has not done anything on women laborers. It shows only women's participation in different farming activities in rural areas.

Deere, C. D. (1982) in her Case Study entitled '*The Division of Labor by Sex in Agriculture*' explained that women's participation in agricultural work had a wide variation in respect to their position in the social class. Women's participation in agricultural work from the lower middle class family was much higher than other social class. She also contended that the low female agricultural participation rates were due to faulty conceptual categories for measuring women's agricultural participation. Their participation was much better than the data had showed. She also had shown that women contributed 21 of the total number of agricultural labor days employed on peasant agricultural units.

Khan, S. (1983) in her research '*Economic Activities of Women in Bangladesh*' mentioned the causes responsible for non recognition of women work as economic activities. She also said that though women play a pivotal role in agriculture, their contribution remained immeasurable for their extensive working in unorganized sector. She also said that for the greater interest of the nation their contribution should be counted in GDP.

Gap: Economic activities of women have been discussed and causes of non recognition of their work as economic activities have been found out in this research. But those women who work for wages or livelihood have not been considered here.

Majumder (1983) in their report '*Women's participation in Agriculture and Non-agriculture Activities in Bangladesh*' described that rural women in Aus and Aman season spent average more than nineteen hours per day in agricultural and non-agricultural work in Bangladesh. Though they have active and intensive participation in agriculture, they herself can not take decision alone for family decision.

Gap: Women's participation in agriculture and non agricultural work and their level of empowerment have been studied here in this research. But the women who work in homestead agriculture and in the field are not focused in this study.

2.2 Women Laborers in Agriculture

Nisha, N. (2008) in her thesis entitled '*Women labor in Agriculture: An Economic Analysis*' described that women laborers were involved only in crop production activities. There was no preference for age, caste or marital status in any of the crop production activities. The laborers worked for 7-8 hours per day. The women laborers were mostly involved in transplanting, weeding, harvesting and post harvest activities which accounted for 92.67 per cent of the total employment days in agriculture. The laborers received wages in cash for all the operations except harvesting and post harvest operations. Wage rate varied from Rs.60 to Rs.80 per day. They worked for 7-8 hours a day. But there is no specific timing during harvesting period.

Gap: This study has done a lot on women's laborers in India though it has not shown seasonal variations of labor participation, their obstacles to work and nature of their empowerment.

2.3 Women and Empowerment

Hossain, M. & Jaim, W. M. H. (2011) in their paper presented at the IFAD (International Fund for Agricultural Development) Conference on New Directions for Smallholder Agriculture in Rome, Italy entitled '*Empowering Women to Become Farmer Entrepreneur: Case study of a NGO Supported Program in Bangladesh*' described that the North-West Crop Diversification Project (NCDP) had put remarkable changes on farmers especially on women's empowerment of the study area. In regarding women's empowerment, mobility outside the boundary of the home and interaction with outside people had improved self confidence among women. The NCDP credit program for female small farmers under BRAC and RDRS had also an important impact on their mobility outside home. The mobility of female farmers under the NGOs had increased due to the very nature of its credit program. Women had gone to the NGO office to deposit savings and to repay loan installments. It is showed in the study that about 87 of the female farmers frequently had gone outside home for this purpose while the percentage of those who occasionally moved outside home for this purpose was 13. The nature of the NGO credit program and the system of holding monthly meetings influenced women to increase their mobility outside their home to a greater extent. However, all members did not attend monthly meetings regularly because timing of these monthly meetings was never suitable for everyone. The study showed that 70 of the female farmers had to move occasionally to attend meetings/workshop arranged by the respective NGOs. About 17 female farmers also reported that they had to frequently move outside home to attend such meetings/workshop while only 13 of them reported that they never go outside home for this purpose. However, such meetings/workshops provide some sort of relaxation for women. They had got a temporary relief from the routine domestic work and most of the members had tried to attend these meetings. Social interactions with other women also increased through attending such meetings or workshops.

Gap: It was an evaluative research in which the impact of North-West Crop Diversification Project on farmers has been analyzed. But the present study is quite different from this study because of having wide gap regarding study population. The present study considers only women laborers instead of agricultural farmers.

Rao, S. (2011) in her papers '*Work and Empowerment: Women and Agriculture in South India*' mentioned that Despite men owning land and listing themselves as cultivators more often than women, women's work was crucial to agricultural production due to the 'sex-sequential' nature of agricultural tasks. The important operations of sowing, weeding, transplanting and harvesting were performed by women. Apart from women workers being required to perform the above tasks in the agricultural cycle, women in a farmer household were responsible for another key task – the recruiting, supervision and payment of female agricultural laborers. She also added that most of her interviews with women had taken place early in the morning before women left for work, and during the peak agricultural season these interviews were constantly punctuated by visits from other women seeking to recruit the group of 10 or so female laborers that most small farms required to carry out sowing or transplanting work for the day. Given the simultaneous peaking of demand, this was not always an easy task, and the researcher witnessed long drawn out arguments between the women about promises to come to work made and broken. For women in cultivator households, significant time and energy thus went into the recruitment of other women workers. The best way to secure labor seemed to be to agree to work on a woman's field to ensure her reciprocity when it had come to one's own labor needs. Better-off, upper caste women did not perform labor in the fields of others even though their supervisory role was extremely important.

Gap: Researcher in her research had shown that women's participation in agriculture was a key factor in the economy of South Indian. She mentioned that despite having no or a little access to land, credit and training, women were playing a crucial role in the whole production process. Though there are some sex-sequential tasks in agricultural, their contribution cannot be denied. This study is also a little bit different from the study under taken as it does not focus on women laborers.

Manik L. B., Ahmed, A. & Hossain, M. (2009) in their article '*The Role of Gender in Economic Activities with Special Reference to Women's Participation and Empowerment in Rural Bangladesh*' mentioned that as one of the most low-income countries, households in rural Bangladesh were engaged in a number of activities to eke out a living. Generally speaking, poorer the households, the larger were the number of sources of employment, and vice versa. This was because in a formal labor market regime, with insecurity of income sources and fluctuation in rural employment (either seasonal or due to natural calamities), households tended to hedge against risks by adopting more than one means of income generation. They had argued that women who were marginally or moderately involved in rural economic activities seem to be most empowered. Thus, there appears to the socio-economic conditions be an inverse 'U' shaped relation of women's empowerment (from very weak to normal situation), with the extent of women's participation and decision-making in rural economic activities. The higher the education levels, the more empowered were the women members of the households.

Gap: Researchers in their household data study for two separate periods has mentioned that women's participation in economic activities in rural Bangladesh has a strong positive relationship with empowerment. But their study was confined to only in women's participation; they have not done anything on women laborers' participation in agriculture.

Hoque, M. & Itohara, Y. (2009) in their article '*Women Empowerment through Participation in Micro-Credit Program: A Case Study from Bangladesh*' mentioned that micro credit program had played a significant role in empowering women of the study area. The result of the study explored that family land holdings, media exposure, institutional participation, micro-credit use by own self and monitoring by the concerned micro-credit NGO are the most vital factors for women empowerment. The result evidently showed that women having participation in any formal institutions (micro-credit NGOs or others) were more empowered, compared to those who does not have any institutional participation. It was found logical as it demonstrated that through giving access to institutions rural women were supposed to be empowered. When a woman uses the money (taken as loan from micro-credit NGO) by herself in any productive purpose then she could earn money and contribute to some extent on household income. Due to this contribution she could establish her control over the family decision making process and other family affairs and thus ultimately improved her position in the family.

Gap: It was an evaluative research in which impact of micro credit on women empowerment had been shown. It analyzed that women having involved in micro credit program have more control on all aspects that are treated as indicators of women empowerment. But this study does not discuss anything about the empowerment of women laborers in agriculture.

Arefin, M. S. (2007) in his book '*Empowerment and Rural Poor People: Contribution of BRAC Programs*' described that BRAC programs have strong positive impact on women empowerment. For searching out of the different dimensions of empowerment approach, this study was conducted and showed that rural poor women of the study area had been empowered by participating informal education program and skill development program along with others consciousness creating activities of BRAC.

Gap: This study had carried out on BRAC programs to search out its impact on empowerment but it dealt no aspect of agricultural women laborers of Bangladesh.

Mahtab, N. (2007) in her Book '*Women in Bangladesh: From Inequality to Empowerment*' described that women in Bangladesh had always worked. They do contribute to their household and to the country's economy but they were discouraged or prevented from participating in public life, including most forms of paid employment. Women's participation in the labor market had been increasing from the mid 1980s. This paid influx of women in labor markets had become a key factor in growing independence of women, economically, socially and legally.

Gap: In this book it is told that there is a flow of women mobility that is leading women to break the shackles of dependency and thus it is encouraging them to enter into wage earning activities though it does not highlight the empowerment of women laborers.

Salahuddin, K. & Shamim, I. (1996) in their book '*Rural Women in Poverty: NGO Interventions for Alleviation*' pointed out the rural distressed women's situation in Bangladesh. In their book they showed that for NGO intervention women had got a remarkable progress in income and empowerment in study area. In terms of decision making, beneficiaries of the NGOs also had participated more in number than their pre-involvement of the NGO programs.

Gap: Authoresses in their book demonstrated NGO interventions and women empowerment of Bangladesh. But it focuses no aspect of women laborers empowerment in agriculture.

Mizan, A. N. (1994) in her book '*In Quest of Empowerment: The Grameen Bank Impact on Women's Power and Status*' discussed that Grameen Bank participation had a positive and significant effect on women's decision-making process. Grameen Bank programs had

significant success in affecting women's status relative to men in Bangladesh. These programs were equivalent to self-employment and were regarded as small business entrepreneurship that had up-lifted self worth and dignity of women along with their empowerment in Bangladesh.

Gap: This book is also on evaluation of Grameen Bank programs and their impact women empowerment. Women laborers empowerment was not the focus of their study.

Subbamma, M. (1985) in her book '*Women Tradition & Culture*' mentioned that employment of men and women can create a prosperous society in the world. If a just and equal society comes into existence, unemployment will disappear certainly. She also argued that nothing but male chauvinistic attitude towards women a bar to the women empowerment in the world. She further urged women not to marry such guys who maintain such mentality. For strengthening women empowerment, authoress emphasized on the freedom of women choices whether they got employed or not. Traditional culture of society subjugates women from where women should be broken free and they themselves should raise their voices against all social evils and traditions.

Gap: Writer in her book discussed a lot of things regarding women employment, tradition, culture, various kind of atrocities to women, their problems, their status and roles, various kind of movements and laws etc. but there are not any specific discussion or data of the women laborers of the world and Bangladesh in particular.

2.4 Women Laborers and Labor Laws

Researcher had studied a number of laws related to labor issues of the country. But no specific law was found regarding the participation of women laborers in agriculture of Bangladesh. There are existing 50 labor laws in the country of which 15 were enacted in

British period, 23 were in Pakistan period and the rest 12 laws have been made by the government of Bangladesh. But all of these laws are concerned with the labor in the different industries and institutions of the country. These laws are basically dealt with appointment, minimum wage; payment of wage, compensation, working environment etc. of the laborers and accident, industrial feuds, security etc. of the workers appointed in transport sectors, tea gardens, newspapers, mines, hotels and restaurants, Export Processing Zones and State owned industries of the country. But yet no law regarding the welfare of the agriculture laborers or agricultural women laborers of the country has been enacted by the government of Bangladesh. Some related laws had been reviewed regarding this which is as follows:

The Bangladesh Labor Act, 2006: After a long review of the existing laws of the country, the House of the Nation of Bangladesh enacted this law in 2006 which was passed in 25-09-2006 and was gazetted in 11-10-2006. It was recognized as the 42 laws of 2006.

In the article 3 of the act it is said that this act shall be applicable to whole Bangladesh. In the article 1 of this act, no. *dha* of section (4), it is said that this act shall not be enforced in that agricultural farms where less than 10 laborers work. And in no. *mardunno* for domestic workers and in no. *ta* in such institutions that are conducted by the owner for production with the help of the family members in exchange of no wage. By these two articles, it is clear that all agricultural laborers irrespective of gender will be covered under it. But no indications of the enforcement of this act for agricultural laborers has been discussed nowhere in this act.

In the given definitions in the act, by ‘production’ is meant only for all sort of industrial production. But no agricultural production has been included in it. Likewise all the clauses added here are not perfectly or partially dealt with the agriculture laborers of the country.

The Bangladesh Laborer Welfare Foundation Act, 2006: This act has been passed by the House of the Nation and the president of the People's Republic of Bangladesh has signed it on 6 Of July in 2006. This is the act which is passed for the welfare of laborers of the formal and informal sectors of Bangladesh. In the definitions of the act it is mentioned that informal sector is meant for the sectors in which employment of the laborers and conditions of employment are not regulated by the existing laws of the country and where there is a little scope for the laborers of being organized for their welfare. In the article 2 of the act, no 'ta' laborer means any skilled, unskilled, semiskilled person appointed directly or indirectly in formal or informal sectors by agent or owner in exchange of money or wage in any institutions or sectors. This act is also included all sort of laborers with their husband, wife, children etc. in the welfare umbrella of the laborers. But no foundation was then found established for the welfare of the labor people.

Some Sub-continental Laws:

Labor and labor laws got a great advancement after the establishment of ILO (International Labor Organization). ILO has had a number of laws and conventions with its member countries for the wellbeing of the people around the world. The then British India became a member of this organization. In 1919, after being fixed the working hour in industries for the workers, British India amended the Indian Factories Act, 1922. The next of its amendment, the Workmen Compensation Act, 1923 were passed. Similarly The Trade Unions Act, 1926; The Workmen's Protection Act, 1934; The Payment of Wage Act, 1936; The Employment of Children Act, 1938; The Employers Liability Act, 1938; The Industrial Disputes Act, 1947 were passed for the welfare of the laborers of the people. But no act regarding the welfare of the women laborers or agricultural workers has been enacted till now. In this perspective, a new act should be enacted for the up lifting the life standard of the agricultural laborers of the country.

CHAPTER III DATA AND METHODS

Methodology of the Study

The purpose of this chapter is to discuss the methodologies used in this study in relation to the study area, sampling procedure, nature and sources of data, analytical techniques and procedures. Usually a set of tools and techniques are followed in order to satisfy the aims and objectives of the study. The tools and techniques usually which applied to a particular research is called methodology. The logic of adopting certain methodological approach depends on the nature and purpose of a study. Considering time, space and cost, I have used various tools and techniques in this study. These tools and techniques have been presented in this chapter under the following major sub-heads:

- 3.1 Type of the Study,
- 3.2 Description of the study area,
- 3.3 Sampling procedure,
- 3.4 Nature and sources of data, and
- 3.5 Analytical techniques employed in the study.

3.1 Type of the Study

This is an exploratory social survey. To explore the nature of participation of the women laborers in agriculture, a social survey has been conducted. A mixed approach (both qualitative and quantitative) has been followed to pursue the research work.

3.2 Description of the Study Area

Bangladesh is divided into seven administrative divisions, namely Dhaka, Chittagong, Rajshahi, Khulna, Barisal, Sylhet and Rangpur. Of the seven divisions, Dinajpur is a district in the division of Rangpur, which is situated in the north-western region of Bangladesh. It

was established in 1786. Its previous name was Ghoraghat district. It consists of six municipalities, 57 wards, 200 mahallas, 13 upazilas, 101 union parishads and 2142 villages. The Upazilas are Birampur, Birganj, Biral, Bochaganj, Chirirbandar, Philbary, Ghoraghat, Hakimpur, Kaharole, Khansama, Dinajpur Sadar, Nawabganj and Parbatipur.

3.2.1 Location

The district of Dinajpur lies between 25°13 to 25°54 north latitude and between 88°23 to 89°18 east longitudes (BBS, 1988). It, with an area of 3437.98 sq km, is bounded by Thakurganj and Panchagor districts on the north, Gaibanda and Joypurhat districts on the south, Nilphamary and Rangpur districts on the east, the Indian state of West Bengal on the south west.

3.1 Map of the Study Area



Source: Banglapedia, 2003.

3.2.2 Topography

The general topographical appearance of the district is flat, slopping gently southwards, as is shown by the trends of the rivers. In the south and a portion of the west of the district, there is the curious formation of soil known as the Barind, geologically classed as old alluvium. The elevations are nowhere worthy of the name of hills, the height ridge not exceeding 100 feet above mean sea level. The ravines vary from shallow stretches of low land, suitable for growing rice to deeper depressions; bearing a resemblance to old river beds and sometimes containing water, these latter are locally called *Kharis*. The ridges are commonly covered with scrub jungles and stunted trees (Rahman, 1997).

3.2.3 Demography

According to the Bangladesh Population and Housing Census (BPHC) 2011, its total population was 2617942 of which male and female proportion is 51:49. They lived in 7, 07, 906 households and average size of the households was 5.19 which was less than the national average, i.e. the national figure was 5.44. Of the inhabitants Muslim are 76.65, Hindu 20.58, Christian 0.80, Buddhist 0.11 and others 1.86. The ethnic nationals are Santal and Oraon. According to Agriculture Census of 2008, 35.06 of the total households of this district are engaged in agriculture and 87.09 of the total area is under net irrigation. Net cropped area of this district is 89.80. Of the total population 484255 male and 95926 are engaged in agriculture (BBS, 2009).

3.2.4 Climate

The district of Dinajpur lies north of the Tropic of Cancer, and its climate approximates more to that of Bihar (India) than to that of the eastern districts of Bangladesh. The maximum average temperature of the district ranges between 42°C and 36°C during summer and minimum average temperature ranges between 12°C to 7°C in the winter season. The average rainfall in the district is nearly 72 inches in a year (BBS, 2009).

3.2.5 Land and Soil

From the geological point of view, almost whole district is covered by alluvial deposit of recent formation. In the southern part of the district, the soil consists of clayey silt, ash-colored in appearance, locally called *khair*. In the northern part of the district and on the bank of the rivers in the south, the soil is a mixture of sand and clay, local name poli. Barind, an interesting geological formation in the district, is common with other areas of Bangladesh. This belongs to old alluvium, and may be briefly described as composed of a bed of stiff reddish brown clay, yellowish on the surface (Rahman, 1997).

3.2.6 Occupation and Main Agricultural Crops

The principal occupation of the inhabitants of the district is cultivation. Nearly 95% of the population lives in rural areas and they depend upon agriculture directly or indirectly. The economy of the district is mainly agricultural and the principal crops grown in the district are Paddy, wheat, sugarcane, jute, potato, vegetables, onion, garlic and oil seed. Among the other sub-sector of agriculture, fisheries, dairies, poultries are seen which are in number Poultry 369, dairy 250, fishery 74, nursery 8, and hatchery 15 (Banglapedia, 2003).

3.3 Sampling Procedure

Aiming at the objectives of the study a multi-stage sampling method has been followed to select the area of the study. The hierarchy has been followed like *Upazila* → Union → Village → Family → -respondents.

3.3.1 Selection of the Study District

Agriculture is the principal occupation of the people of rural Bangladesh. In almost all districts of Bangladesh, agricultural cultivation is being practiced. But in the northern part, especially in Dinajpur district, agriculture is the mainstay of the people. Because

Dinajpur is known as the granary of Bangladesh and a huge number of women laborers actively participate in agricultural work there. This is why, this district has been chosen purposively for the study.

3.3.2 Selection of the Study *Upazilas*

In the first stage, four *upazilas* have been taken randomly out of thirteen *upazilas* of Dinajpur district. These *Upazilas* are *Ghoraghat*, *Nawabganj*, *Khansama* and *Dinajpur Sadar*.

3.3.3 Selection of Unions

In the second stage, from the selected *upazilas*, four unions (each union from the each *Upazila*) have been selected randomly for the study. Name of the unions are *Bulakipur union* from *Ghoraghat*, *Daudpur* from *Nababganj*, *Ververy* from *Khansama* and *Fazilpur* from *Dinajpur Sadar*.

3.3.4 Selection of Villages

In the third stage, twelve villages have been taken randomly (every three villages from each union) out of the total villages of the unions. Name of the selected villages are *Kulanandapur*, *Bulakipur* and *Salekahdah* from the *Bulakipur* union of *Ghoraghat upazila*; *Heyatpur*, *Maldoh* and *Akhira* from the *Daudpur* union of *Nababganj upazila*; *Chakrampur*, *Baladhangi* and *Hosempur* from *Ververy* union of *Khansama* and *Jhanzira*, *Madhobpur* and *Guchchogram* from *Fazilpur union* of *Dinajpur Sadar*.

3.3.5 Selection of Families and Women Laborers

According to size of population of women laborers in each of the villages, respondents have been taken proportionately. Based on simple random sampling procedure, they have been chosen into sample. Every woman laborer has been chosen from each of the families. If they are more than one in number in each family, they are denied to take in the sample. Data collector continued interviewing unto the required number of respondents is fulfilled.

3.3.6 Sample Size

Women laborers in agriculture are one of the biggest portions of the labor force of Bangladesh. But their recognition as laborers is not seen in the census report of the country. Their number is also still unknown to the development thinkers of the country. So for obtaining a representative sample size from this unknown population, a statistical formula given by Cochran (1963) has been used.

$$n = \frac{Z^2 pq}{e^2}$$

where, n= sample size

Z= confidence level at (1- α),

P=estimated population proportion (0.5, this maximizes the sample size),

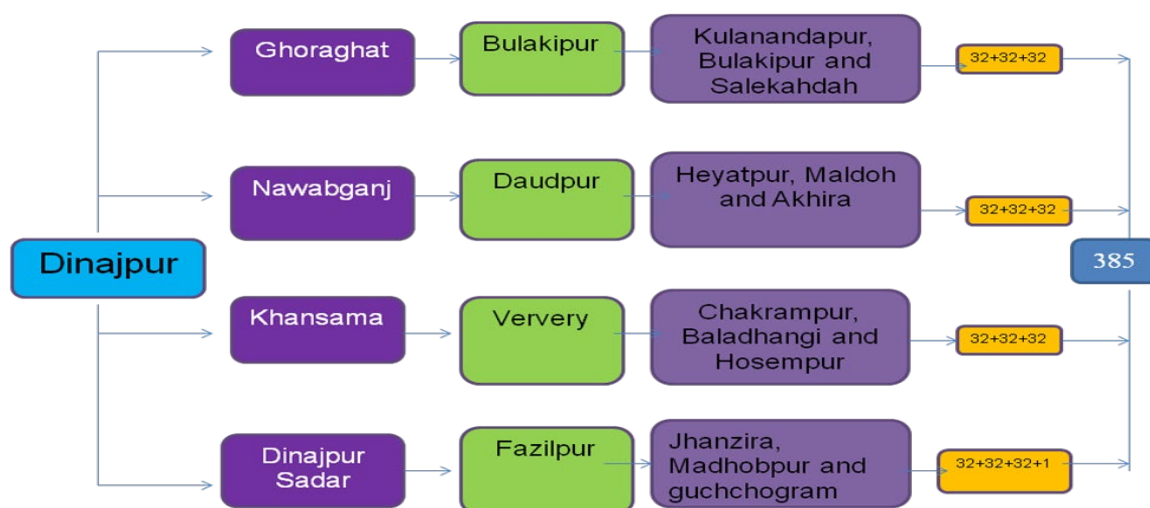
q= (1-p),

e= error limit α ,

$$\text{Therefore, } n = \frac{(1.96)^2 (0.5)(0.5)}{(0.05)^2} = 384 + 1 = 385.$$

According to this formula, size of sample of this study has been determined as total 385.

3.3.7 Sampling Process at a Glance



3.4 Nature and Sources of Data

In order to collect relevant information, women laborers had been interviewed. Some information had also been collected from secondary sources. Before taking interview, the whole academic purpose of this study was clearly explained to the sample respondents. To overcome the errors and to ensure collection of academic data, all possible efforts were made. Observation method was also used to make data reliable and authentic.

3.4.1 Data Collection Tools and Techniques

Interview schedule was the main tool for collection of data. It was designed in accordance with the objectives of the study. For make it suitable for the study, pre-test of the interview schedule was made. After necessary corrections, modifications and adjustments, it was finalized. Researcher provided data collectors with necessary things like pen, pencil, eraser etc. so that data collectors can concentrate themselves fully in data collection. Every data collectors had cell phones with them which they had used for recording, taking photos and maintaining communication. Researcher also requested data collectors for keeping note if there see any additional information or any inconsistency in collecting field data.

3.4.2 Training of the Data Collectors

As the respondents of this study were women, women data collectors were appointed to collect reliable and authentic information. Female students of Master of Social Science (MSS) of social work of Dinajpur district were appointed for this purpose. Before sending them for collection of data, several training session were made to understand the objectives and the purpose of the study and the interview schedule accordingly. Necessary things regarding collection of data were provided to them for making it easier in the field.

3.4.3 Period of Data Collection

June 01, 2013 to August 31, 2013 was the period of collection of data. In order to collect reliable authentic data, researcher actively participated in data collection during this period. Researcher also guided and solved different problems faced by data collectors at the time of data collection.

3.4.4 Data Processing

The easiest procedure of analyzing the data is to use computer program. So I have selected a suitable computer program for data entry and analysis. For the data processing and analysis following stages were followed:

Editing: After collecting of data, we carefully checked each filled up schedule. The data were edited rigorously to minimize the non-sampling error of the study.

Coding: The recorded data were coded in cod's sheets according to an exhaustive code plan. Researcher's best effort was made to minimize possible bias due to coding of open question.

Computerization: Edited and coded data had been processed in the personal computer. At present, nobody thinks to analyze the data without a suitable computer program. No other alternative without computer program to analyze the quickly, easily and correctly. So I had to select a suitable computer program for data entry and analysis. I selected SPSS for windows version 16.00 software, the most convenient program for data analysis for social science. Besides, MS-word and MS-Excel are used. To analyze the data I coded the entire qualitative variables.

3.4.5 Reliability and Validity of Data

Validity and reliability of data actually depend on some aspects of research. These are properly construction of data collection tools and techniques, proper way of data collection, proper selection of statistical formulas and analysis. Researcher in this case, considered all these factors in his research. Regarding collection of data, researcher constructed interview schedule properly and systematically and to find out its usefulness, it was pretested. For collection of data properly, researcher appointed skilled and trained data collectors and conducted several sessions on it and allocated a reasonable period of time for this purpose. For selection of statistical formulas, researcher consulted with supervisors and academicians having consideration on the nature of data. Researcher strongly believes that all sorts of data collected in this purpose are unbiased, reliable and empirical.

3.5 Analytical Techniques Used in the Study

Matching an appropriate methodology for graduating and analyzing a set of data is difficult task for a researcher. For this reason, researcher, in most of the times, used alternative method or formula to graduate and analyses the collected data.

3.5.1 Formula for Estimating Growth Rates of Women in the Labor Force: In the chapter four, for portraying a pen-picture of participation of women in the labor market of Bangladesh and for showing their growth rates, the following geometric formula has been used:

$$p_t = p_b(1 + ry)$$

$$\therefore r = \frac{1}{y} \left(\frac{p_t}{p_b} - 1 \right)$$

where,

p_t = Value of the late year;

p_b = Value of the base year;

y = Number of years between late year and base year;

r = Growth rate.

Then, a projection using this method could be computed as:

$$P_t = P_l (1 + rz)$$

where,

P_t = Value of the target year;

P_l = Value of the launch year;

z = Number of years between target year and launch year;

r = Growth rate

Instead of using this geometric formula, exponential growth rate formula can also be used.

The exponential formula is-

$$p_t = p_0 e^{rt}$$

where,

P_t = Value of the late year;

p_0 = Value of the base year;

r = Exponential growth parameter.

But we have used the above mentioned geometric formula.

In chapter five, the following formulas have been used for analyzing and presenting the result of the study. When observations, discrete or continuous are available on single characteristics of a large number of individuals, it becomes necessary to condense the

data as far as possible without any information of interest. If the identity of individuals ,about whom particular information is taken ,is not relevant ,nor the order in which the observations raise ,them the first real step of condensation is to divide the observed range of variables into a suitable number of class intervals and to record the number of observations in each class. Such a table, showing the distribution of the frequencies in the different classes, is called a frequency table and the manner in which the class frequencies are distributed over the class interval is called the grouped frequency distribution, simply distribution of the variable .I have come across some situation in which each item of a series may have two or more variables. The distribution, in which I consider two variables simultaneously for each item of the series, is known as bivariate distribution or bivariate frequency distribution.

3.5.2 Univariate Distribution

The structure of the univariate frequency distribution table is as follows:

Univariate frequency table

Class interval	Frequency
I_1-u_1	f_1
I_1-u_1	f_2
\vdots	\vdots
I_1-u_1	f_n

where I_i is the lower limit of the i -th class interval, u_i is the upper limit of the i -th class interval; f_i is the frequency of the corresponding class interval.

3.5.3 Bivariate Distribution:

When the dimension of the frequency distribution is two i.e. when observations are available corresponding to two characteristics and the observations are distributed according to these two characteristics is known as bivariate frequency distribution, simply

bivariate distribution. Let us suppose that we have observation x_i and y_i $i = 1, 2 \dots n$ on X and Y are variables respectively, and then the structure of the bivariate distribution be as follows:

Bivariate frequency distribution Table

$X \backslash Y$	y_1	Y_2	y_n
x_1	O_{11}	O_{12}	O_{1n}
x_2	O_{21}	O_{22}	O_{2n}
.
.
.
x_m	O_{m1}	O_{m2}	O_{mn}

Here, f_{ij} indicates the frequency of the ij -th cell of the table, i.e. frequency corresponding to i -th level of X and j -th level of Y variable.

3.5.4 Contingency Analysis

The contingency analysis is investigated the degree of association between different phenomena that could be useful in the analysis. I have constructed some simple cross table first and then examined their association. For contingency analysis, it is assumed that the hypothesis of independence or homogeneity is taken as the null hypothesis. The expected frequency under the null hypothesis is

$$E_{ij} = \frac{O_i \times O_j}{N}$$

where,

E_{ij} = The expected number of respondents in the (i, j) -th cell,

O_i = number of respondent at the i -th row of respective contingency table,

O_j = number of respondent at the j -th column of respective contingency table,

N = total number of respondent.

All contingency tables are prepared on the basis of classification of variables or attribute. For each contingency table computing chi-square makes examination of association between the component and the various segments of the components. To test the association between two variables $r \times c$ contingency table is used. They can be represented as below:

Contingency table

$X \backslash Y$	$Y_1 Y_2 \dots Y_c$	
X_1	$0_{11} 0_{12} \dots 0_{1c}$	
X_2	$0_{21} 0_{22} \dots 0_{2c}$	
\vdots	\vdots	
X_r	\vdots	
\vdots	$0_{r1} 0_{r2} \dots 0_{rc}$	
Grand total		N

Here X_1, X_2, \dots, X_r are the r -category of the attribute X and Y_1, Y_2, \dots, Y_c are the c -category of the attribute Y . 0_{ij} is the observed frequency of i -th category of X and j -th category of Y . N is the grand total.

The formula is given by:

$$\chi^2 = \sum_i \sum_j \frac{(O_{ij} - E_{ij})^2}{E_{ij}} \approx \chi^2_{(r-1)(c-1)}.$$

This follows chi-square distribution with $(r-1) \times (c-1)$ degrees of freedom

where, O_{ij} = the observed number of respondent in (i, j) -th cell,

E_{ij} = the expected number of respondent in (i, j) -th cell,

r = number of rows,

c = number of columns.

To test the homogeneity between two attributes the following hypothesis is used:

Null hypothesis (H_0): There is no association between X and Y

Alternative hypothesis (H_1): H_0 is not true

It is known that the null hypothesis might be accepted at the 5% level of significance, if the 2-sided asymptotic significance level is less than. 0.05, otherwise the null hypothesis will be rejected. For this particular problem, I observe that the null hypothesis might be accepted at the 5% level of significance when the Person's chi-square test will be used.

3.5.5 Regression Analysis:

Attempts are made to look at the average relationship of variables which are associated with total wage of the respondents.

The regression model is:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \dots + \beta_n X_n + U \text{ -----(1)}$$

Here, total wage of one season has been considered as independent variable.

where,

X_n = Independent variables (wages of preparing seed bed, uprooting paddy shoots, give water, transplanting paddy-shoots, weed cleaning, reaping paddy, threshing, sorting, rice boiling and drying, dusting off rice, hay making consecutively for IRRI and *Aman* seasons)

Y = Dependent variable (total wage of one season); β_0 = Intercept term.

β_i = the co-efficient of X_i ; $i = 1, 2, \dots, n$; U = Error term.

3.5.6 Women Empowerment Indices

In order to construct indices for women laborers in agriculture, attempts are made in two stages:

First stage: Empowerment index of women laborers for single indicator of different issues has been constructed. And then empowerment index of women laborers for an indicator has been calculated by using the following formula:

Empowerment Index $EI_{ij} = \frac{(X_1 + X_2 + \dots + X_n)}{M} \times 100$

$$= \frac{\sum_{j=1}^n X_j}{M} \times 100$$

where,

EI_{ij} = Empowerment index of i -th women laborer for j th indicator,

X_j = Value of individual issues of j -th indicator,

M = Maximum possible score or outcome,

n = Number of individual issues of an indicator.

Second stage: The composite empowerment index of a woman laborer.

The composite empowerment index consisting of different indicators with equal weight can be expressed as follows:

$$EI_i = \frac{EI_{i1} + EI_{i2} + \dots + EI_{iN}}{N}$$

$$= \frac{\sum_{j=1}^N EI_{ij}}{N}$$

where,

EI_i = Composite empowerment index of i th women

N = Number of indicators considered in the composite index

CHAPTER IV

SITUATION OF WOMEN AND WOMEN LABORERS IN THE LABOR MARKET OF BANGLADESH

Introduction

The purpose of this chapter is to portray a pen-picture of participation of women in the labor market of Bangladesh. This chapter seeks to provide an understanding on the issues and options related to the characteristics of labor with an especial consideration of women including their trend and pattern at national as well as regional level. Accordingly, a comparative discussion on labor force characteristics, employment situation, unemployment condition, participation of women in major economic activities, working hours of laborers and their wage conditions etc. have been included in this chapter. Moreover, it explores the changing pattern of labor market highlighting the position of women, their participation and current status in the labor market of Bangladesh.

Bangladesh is currently facing a challenge of job creation for the new entrants into the labor force and a great many who are currently underemployed. Moreover, a large number of women are being involved in the non-monetized sectors and in subsistence activities over the country. However, with the passes of time and because of the breakdown of the supportive kinship umbrella and felt emerging demands in some sectors, women's participation in economic activity has been increasing over the years. Due to generate their income along with their family earnings, women are more likely to come out from their traditional works. Sectoral growth of employment and supply push factors are encouraging the participation of women from home-based to market-oriented activities.

In Bangladesh, the policy response to the employment of women has been largely related with anti-poverty program, social protection initiatives, small livelihoods programs, and micro-credit with less concentration to the manner in which this links to the macro policy

framework. Issues of wage discrimination, links to the markets for rural groups of women and their scaling up have been in the public discourse, but have largely been ignored by the policies. In fact, the employment of women has been viewed from welfare or poverty reduction perspective rather than a core growth issue.

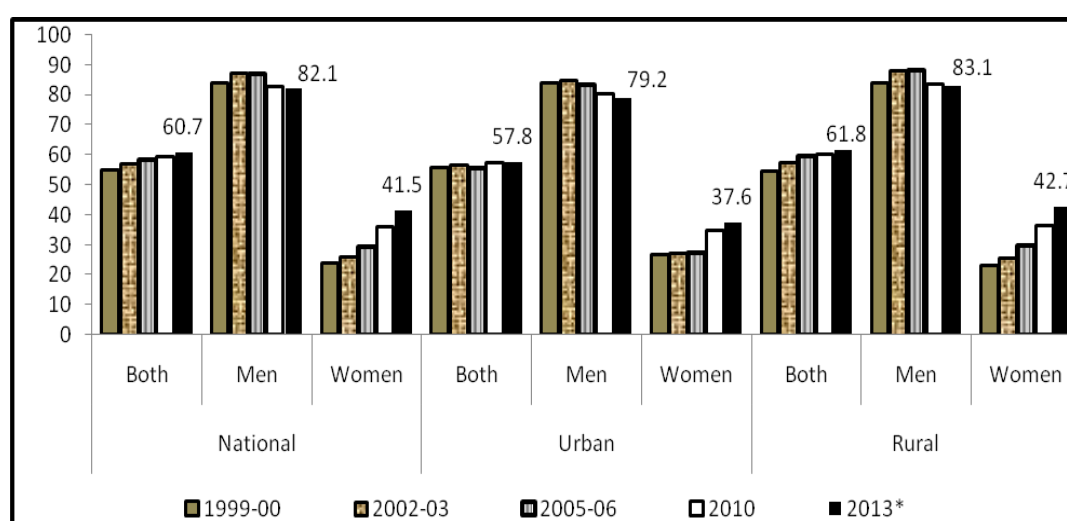
4.1 Trends of Labor Force

Labor force participation rate has experienced a positive increase for women from 1999-2000 to 2010 whereas this trend is negative for men in the same time period. Overall, the trend of participation of labor force in the job market is positively increasing. The same scenario is experiencing at the regional level of Bangladesh. At national level, the annual increase rate for women was found 5.06% compared to -0.18% for men during the period of 1999-2000 to 2010 (Figure 4.1). For both sex, the participation rate has increased from 54.90% in 1999-2000 to 59.30% in 2010 with an annual rate of increase 0.80%. If the current trend persists, the progress of labor force participation rate might reach at 60.70% for both sexes after the end of 2013. Whereas, the progress of labor force participation rate might reach at 41.50% for women and 82.10% for men at the same time. Progress of women education and advance of technology along with continuous support from mass media helps the women to increase their participation in labor market of Bangladesh.

At regional level, the labor force participation rate is more in rural area than their urban counterparts for both of men and women. In case of rural area, the participation has increased from 54.60% in 1999-2000 to 60.0% in 2010 with an increase rate of 0.99% per annum (figure 4.1). Whereas, the labor force participation rate has increased with an annual rate of 0.27% from 55.80% in 1999-2000 to 57.30% in 2010 in urban area. In case of women labor force, the participation rate has increased in rural area from 23.1 in 1999-2000 to 36.40% in 2010 with an annual rate of 5.76%. Whereas, the women labor force

participation rate in urban area has increased from 26.50% in 1999-2000 to 34.50% in 2010 with 3.02% per annum. If the current trend persists, the progress of women labor force participation rate might reach at 37.60% in urban area and 42.70% in rural area after the end of 2013. On the other hand, men labor force participation rate might reach at 79.20% in urban area and 83.10% in rural area at the same time. Awareness of women along with the demand of families pushes the rural women into labor market to earn more.

Figure 4.1: Labor Force Participation Rate



*estimated

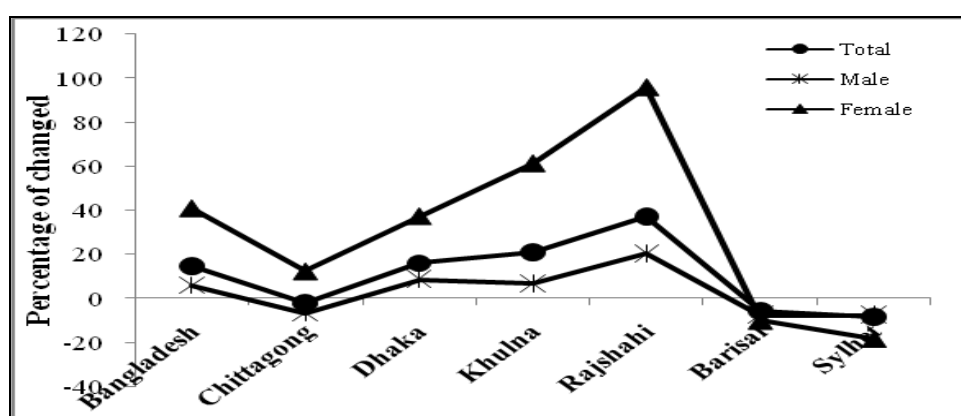
Source: Researcher's calculation based on Bangladesh Bureau of Statistics (BBS) 2002, 2004, 2008 and 2011

4.2 Labor Force by Administrative Divisions

Participation of women in labor force varies according to the administrative divisions in Bangladesh, since all the divisions are not unique according to the socio-economic conditions. Women's participation in labor force is increasing and their involvement is higher than their men counterparts in all the divisions in Bangladesh except Barisal and Sylhet from 2006 to 2010. Moreover, among the six administrative divisions, Dhaka, Khulna and Rajshahi showed increasing trend of labor force, whereas Chittagong, Barisal and Sylhet showed decreasing trend comparing between 2006 and 2010. The marked

change has been found in Rajshahi division which was increased by 37.17% following Khulna by 21.05% and Dhaka by 16.03%. On the other hand, the involvement of labor force has been decreased in Sylhet division by 8.33%, Barisal by 5.70% and Chittagong by 2.06%. The rate of participation for both men and women was highest at Dhaka among the other five divisions for both the year 2006 and 2010. The rates of participation of men and women in labor market at Dhaka were 31.90% and 32.40% respectively in 2010 which were 31.20% and 32.70% in 2006. The lowest rate of participation however, has been observed at Sylhet division. The rates of participation of women were only 5.50% and 8.4% for the total labor force in 2010 and 2006 respectively, whereas for men, those were 6.0% and 7.0% for the corresponding years.

Figure 4.2: Labor Force by Administrative Division (Compared to 2006)



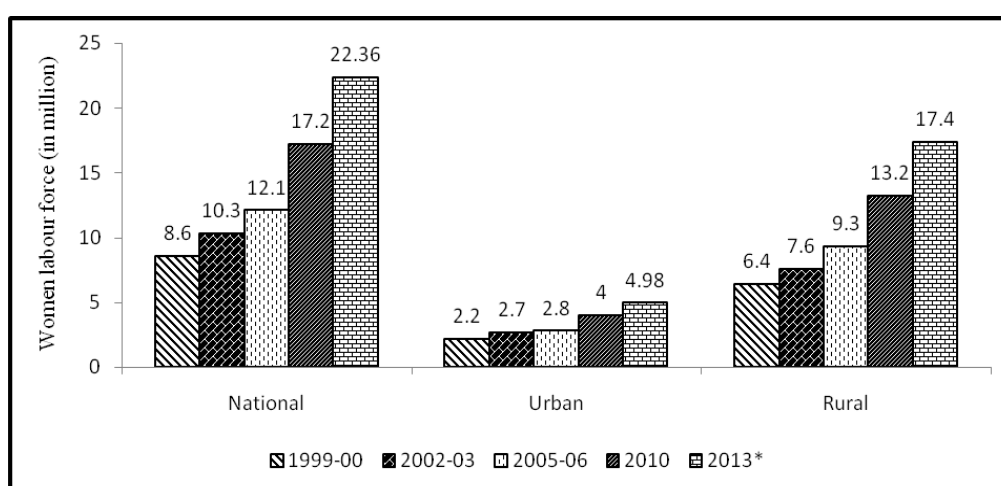
Source: Basak, 2013 based on Bangladesh Bureau of Statistics (BBS) 2002, 2004, 2008 and 2011

4.3 Women in Labor Force

The participation of women in labor force, however, is increasing with accelerated rate over the years. Moreover, along with the overall socio-economic advancement the women labor force at rural area has shown a remarkable progress. At the national level, the number of women labor force has increased from 8.6 million in 1999-2000 to 17.2 million in 2010 with an annual rate of 10% (Figure 4.3). If the current trend persists, the participation of women in labor force might reach at 22.36 million in Bangladesh after the end of 2013.

In case of urban women, the number of labor force has increased from 2.2 million in 1999-2000 to 4.0 million in 2010 with an annual rate of 8.18%. Whereas, the number of women labor force has increased from 6.4 million in 1999-2000 to 13.2 million in 2010 with an increase rate of 10.63% per year in rural area. If the current trend persists, the participation of women in labor force might reach at 4.98 million in urban area and 17.4 million in rural area after the end of 2013.

Figure 4.3: Women in Labor Force



*estimated

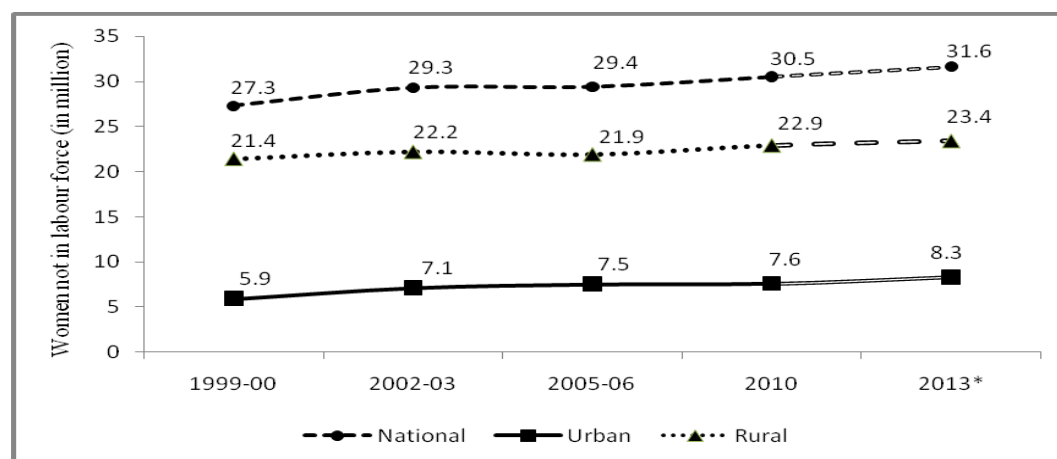
Source: Author's calculation based on Bangladesh Bureau of Statistics (BBS) 2002, 2004, 2008 and 2011

4.4 Women not in Labor Force

In spite of accelerated increment of women in labor force, there are a large number of women who are not in labor force. At national level, the number of women not in labor force increased from 27.3 million in 1999-2000 to 29.3 million in 2002-2003 with a rate of 2.44% per year and this rate had been slowing down for the next couple of years (Figure 4.4). This rate of increase was 0.11% and 0.94% from 2002-2003 to 2005-2006 and 2005-2006 to 2010 respectively. Similar results are found as well in the rural and urban areas. Following the trend (1.17% rate of increase between 1999-2000 and 2010) status, it is estimated that the number of women not in labor force might reach at 31.6% after the end of 2013.

In case of regional status, there is a remarkable difference among rural and urban women. Rate of progress of rural women in economic activity is more however less in number as compared with urban women.

Figure 4.4: Women not in Labor Force



*estimated

Source: Author's calculation based on Bangladesh Bureau of Statistics (BBS) 2002, 2004, 2008 and 2011

4.5 Trends of Youth Labor Force

Women youth labor force has experienced a higher increase rate than their men counterparts. At national level, the annual increase rate for women was found 9.0% compared to 2.60% for men during the period of 1999-2000 to 2010 (Table 4.1). At regional level, growth rate of women youth labor was also higher in Bangladesh. Continuous support from different national and international organizations for women, development helps the women to change their mentality of participating in economic activities. Moreover, economic insolvency in family, higher price rising in market and to fulfill the demand of their family has pushed them into labor market. The progress of women youth labor might reach at 9.9 million after the end of 2013, if the youth women continue the present rate of increase (annual rate 9.0 between 1999-00 and 2010). In case of male youth, they might be 14.1 million by 2013 with annual increase rate of 2.60% (from 1999-00 to 2010).

Table 4.1: Youth Labor Force

Youth Labor Force (Million)	1999-00	2002-03	2005-06	2010	2013*
National					
Male	10.40	13.50	13.20	13.10	14.10
Female	4.10	5.50	4.60	7.80	9.90
Urban					
Male	2.30	3.10	3.0	3.10	3.40
Female	1.10	1.30	1.20	2.0	2.50
Rural					
Male	8.10	10.40	10.20	10.0	10.70
Female	3.0	4.20	3.40	5.80	7.40

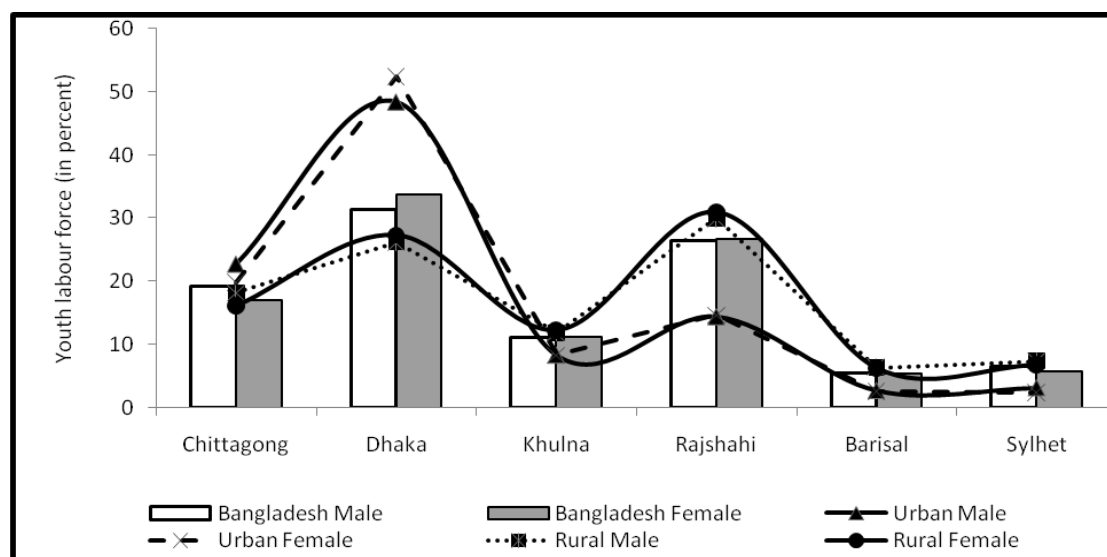
*estimated

Source: Researcher's calculation based on Bangladesh Bureau of Statistics (BBS) 2002, 2004, 2008 and 2011

4.6 Youth Labor Force by Division (in 2010)

The highest percentage of youth labor force existed in Dhaka division (32.25%) followed by Rajshahi division (26.51%) and Chittagong division (18.44%) which are shown in the Table 4.3. The distribution of male and female in youth labor force also followed the same pattern. Besides, in the urban area, the highest percentage of labor force was in Dhaka division (49.95%) followed by Chittagong division (21.60%) and Rajshahi division (14.52%). On the other hand, the highest labor force was in Rajshahi division (14.52%) for rural area followed by Dhaka division (26.61%) and Chittagong division (17.44%) which is shown in the figure 4.3.

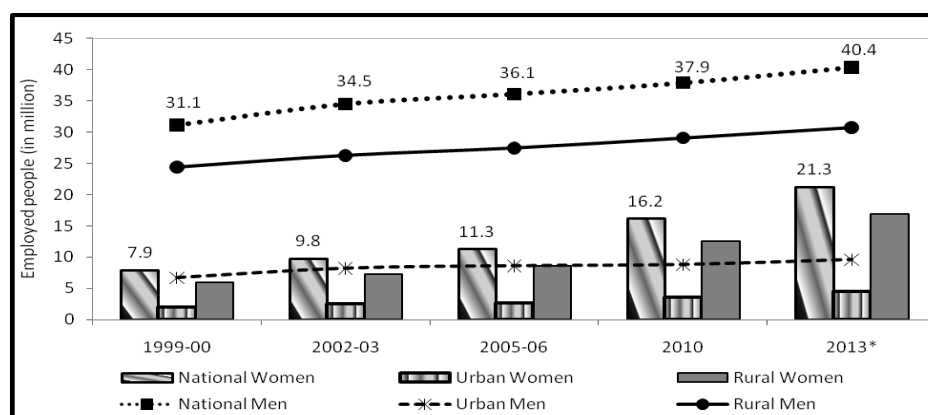
Moreover, 51.50% of employed youth among the total youth labor force belonged to agriculture, forestry and fisheries followed by production and transport laborer (28.90%) and sales worker (9.70%) in 2010. According to the status of employment, the highest portion was unpaid worker (39.60%) followed by regular paid employee (17.0%) and self employed in non-agriculture (13.40%).

Figure 4.5: Youth Labor Force by Division in 2010

Source: Bangladesh Bureau of Statistics (BBS) 2011

4.7 Trends of Employed Population

Employment status of female has successively increased with the increase of their participation in the workforce. The number of employed female is lower than their male counterparts; however the rate of their increment is much higher. The number of employed female increased from 5.0 million in 1995-96 to 16.2 million in 2010 with an annual rate of 14.90% while, this rate of increase was annually 1.80% for their male counterparts from 29.8 million in 1995-96 to 37.9 million in 2010 (Figure 4.4). Educational stipend and other programs taken by the GoB to improve the condition of female education, have not only increased their rate of enrolment but also created opportunities before them to enter into the employment sector (Rahman, 2005). If the trend of the period from 1995-96 to 2010 continues, the employed female in Bangladesh might increase to 28.3 million in the year 2015 whereas male employee might be 41.3 million in the same period.

Figure 4.6: Employment Scenario of Bangladesh

*estimated

Source: Researcher's calculation based on Bangladesh Bureau of Statistics (BBS) 2002, 2004, 2008 and 2011

4.8 Trends of Unemployed Population

The number of unemployment among people is increasing in Bangladesh over the years.

The number of unemployed men has increased from 1.1 million in 1999-00 to 1.6 million in 2010 with an annual rate of 4.54% against 4.29 of their women counterparts from 0.7 million in 1999-00 to 1.0 million in 2010. Women are still far behind in this man driven society because of social superstitions, conservatism and narrowness. If the current trend continues (between 1995-96 and 2010), the country's unemployed men might increase to 1.82 million and unemployed women might be 1.13 million in the year 2013.

At urban level, women are facing four times higher unemployment problem than men. On the other hand, women in rural region have faced three times less unemployment problem than their men counterparts during 1999-00 to 2010. In urban area, the number of unemployed men has increased from 0.4 million in 1999-00 to 4.5 million in 2010 with an annual rate of 2.50% against 10.0% of their women counterparts from 0.2 million in 1999-00 to 0.4 million in 2010. Whereas, the number of unemployed men in rural area has increased from 0.7 million in 1999-00 to 1.1 million in 2010 with an annual rate of 5.70% against 2.0% of their women counterparts from 0.5 million in 1999-00 to 0.6 million in 2010.

Table 4.2: Unemployment Scenario of Bangladesh

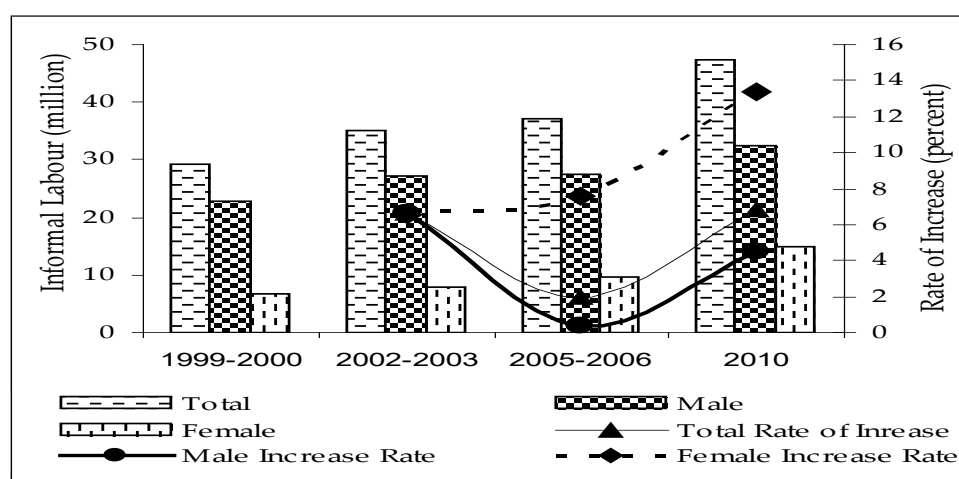
Year	National		Urban		Rural	
	Women	Men	Women	Men	Women	Men
1999-2000	0.70	1.10	0.20	0.40	0.50	0.70
2002-2003	0.50	1.50	0.20	0.40	0.30	1.10
2005-2006	0.90	1.20	0.20	0.30	0.70	0.90
2010	1.0	1.60	0.40	0.50	0.60	1.10
2013*	1.13	1.82	0.52	0.54	0.64	1.29

*Estimated

Source: Researcher's calculation based on Bangladesh Bureau of Statistics (BBS) 2002, 2004, 2008 and 2011

4.9 Trend of Employed Population in Informal Sector

The annual rate of increase of women employee in informal sector per is three times higher against their men counterparts. The number of women labor in informal sector was increased from 6.6 million in 1999-2000 to 14.9 million in 2010 with a rate of 12.58% per annum whereas the number of men participation was annually 4.27 from 22.7 million in 1999-2000 to 32.4 million in 2010. Lack of employment divers the labor into informal sector. Moreover, economic insolvency pushes them in this non-organized sector. In this sector women participation is faster than their men counterparts because of their less educated, less skilled and calm behavior.

Figure 4.7: Labor in Informal Sector of Bangladesh**Source:** Ali (2013) based on Bangladesh Bureau of Statistics (2002, 2004, 2008 and 2011)

4.10 Women's Participation in Main Economic Activity

In terms of the nature of jobs and opportunities, women have been experiencing some major changes in the labor market of Bangladesh over the years. Based on the sex variety, the main economic activity of population also varies. Men can avail a job easily as compared with women. The situation is changing with the increase of time, along with the main occupational status of women. Table 4.3 shows that participation of women in their household work has decreased (1.88%) in 2010 as compared with 2001. However, there is an enormous increase in the percentage of women in agricultural sector (27.24%) followed by transport and communication sector (12.0%), industrial sector (10.67%) and business sector (6.0%) during the same period. That means, sectoral growth and supply push factors increased the participation of women from home-based to market-oriented activities

Table 4.3: Main Economic Activity of Women

Year	HH Work	Agriculture	Industry	Transport and Communication	Business
2001	63.86	4.09	0.60	0.05	0.35
2005	52.86	13.69	1.17	0.04	0.29
2010	51.86	15.23	1.24	0.11	0.56
2013*	48.94	27.67	1.64	0.15	0.66
Rate of Growth	-1.88	27.24	10.67	12.00	6.00

*estimated

Source: Researcher's calculation based on Bangladesh Bureau of Statistics, 2011a

4.11 Unpaid Family Helper in Labor Market

Bangladesh has experienced an increased number of unpaid family helpers between 1999-00 and 2010. During this period, the rate of growth of unpaid family helper was much higher compared to the rate of growth of total labor force. Annual rate of growth for unpaid worker at national level was 23.73% during 1999-00 to 2010 (Table 4.4), whereas the growth of total labor force during the same period was only 0.80% (Figure 4.1). This increasing rate is about one and half times higher in urban area than rural area between 1999-00 and 2010. Accelerated growth of urbanization and fast migration in urban area from rural region causes the increase of unpaid family helper in Bangladesh.

Table 4.4: Unpaid Women Family Helper of Bangladesh (Thousands)

Year	National	Urban	Rural
1999-00	2703	298	2405
2002-03	4728	985	3743
2005-06	6780	593	6187
2010	9116	1769	7347
Rate of growth*	23.73	49.36	20.55

*Growth rate during 1999-2000 and 2010 in

Source: Researcher's calculation based on Bangladesh Bureau of Statistics (BBS) 2002, 2004, 2008 and 2011

4.12 Trend of Women Day Labor

Women day laborers are decreasing in Bangladesh over the years. It is also an evident that day labor from rural area is decreasing however it is increasing in urban area. The number of women day labor was decreased from 1431 thousand in 1999-2000 to 849 thousand in 2010 with an annual rate of 4.10% at national level (Table 4.5). In rural area, the number of women day labor was decreased from 1233 thousand in 1999-2000 to 647 thousand in 2010 with an annual rate of 4.80%. On the other hand, the number of labor was increased in urban from 198 thousand in 1999-2000 to 202 thousand in 2010 with an annual rate of 0.20% (Table 4.5).

Table 4.5: Women Day Labor of Bangladesh (Thousands)

Year	National	Urban	Rural
1999-00	1431	198	1233
2002-03	947	253	694
2005-06	729	180	548
2010	849	202	647
2013*	745.4	203.2	554.8
Rate of growth**	-4.1	0.2	-4.8

*Estimated

**Growth rate during 1999-2000 and 2010 in

Source: Researcher's calculation based on Bangladesh Bureau of Statistics (BBS) 2002, 2004, 2008 and 2011

4.13 Day Laborers by Weekly Income

Wage disparity varies according to sexual status among the day laborer in Bangladesh. Women's wage condition is very painful as compared with men. Not only women, wage condition among men also show the lowest category in Bangladesh. Moreover, wage condition among agricultural labor is lower than the non-agricultural labor. Most of the day labor of agricultural sector (56.70%) earns Tk. ≤1000 in a week whereas in non-agricultural sector 40.50% labor's weekly earning is Tk. ≤1000 (Table 4.6). In case of women labor, only 7.40% earn money from agricultural economy where as 10.20% of them earn from non-agricultural sector. However, women labor works same time as compared with men labor especially in case of agricultural work (Table 4.7).

Table 4.6: Day Labor by Weekly Income in 2010

Weekly Earning (Tk.)	National			Rural			Urban		
	Both	Men	Women	Both	Men	Women	Both	Men	Women
	Day labor (Agri*)								
≤ 500	13.90	85.90	16.40	14.10	85.50	16.90	10.90	91.80	8.90
501-1000	42.80	95.40	4.82	42.90	95.40	4.84	40.90	95.70	4.50
1001-1500	25.90	96.90	3.17	25.80	97.10	2.99	26.90	95.0	5.20
1501-2000	15.0	89.20	12.10	14.70	89.40	11.82	19.10	86.0	16.0
2001+	2.47	77.60	28.80	2.49	77.40	29.13	2.22	70.0	43.0
Total	100.0	93.10	7.40	100.0	93.10	7.37	100.0	92.9	7.7
	Day labor (Non-Agri*)								
≤ 500	6.65	78.60	27.30	6.64	79.80	25.31	6.67	76.50	31.0
501-1000	33.50	92.40	8.21	35.30	92.0	8.69	30.40	93.20	7.30
1001-1500	34.40	97.80	2.21	35.30	98.10	1.98	32.90	97.40	2.60
1501-2000	20.10	81.0	23.50	18.50	80.10	24.89	22.80	82.30	22.0
2001+	5.39	85.80	16.50	4.29	84.70	18.02	7.29	86.20	16.0
Total	100.0	90.70	10.20	100.0	90.80	10.12	100.0	90.50	10.0

* Agriculture

Source: Researcher's calculation based on Bangladesh Bureau of Statistics (BBS) 2011

4.14 Employee's working Hours

In spite of socio-religious barriers, women of Bangladesh invest their time in daily activities as like as men invest their time. In case of agricultural day labor, both men and women work the same time period. If we consider a single day, only unpaid family worker and self employed non-agricultural men more work (less than hour) than their women counterparts. Both rural and urban women (15+ years) engage themselves in their respective work as well as men do.

Table 4.7: Average Weekly Hours Worked by Employee (15+ Years)

Status in employment	National		Urban		Rural	
	Men	Women	Men	Women	Men	Women
Self employed (Agri)	51.0	49.0	49.0	48.0	51.0	49.0
Self employed (Non-Agri)	53.0	47.0	55.0	49.0	52.0	47.0
Unpaid family worker	29.0	23.0	33.0	24.0	28.0	23.0
Day laborers (Agri)	54.0	54.0	54.0	54.0	54.0	54.0
Day laborers (Non-Agri)	54.0	51.0	56.0	50.0	53.0	52.0

* Agriculture

Source: Bangladesh Bureau of Statistics (BBS) 2011

4.15 Conclusion

As the large number of women laborers in Bangladesh is engaged in agriculture or agriculture based occupations, policies are needed to address the related issues that would boost the productivity of women in the agricultural sector. Additionally, since the access of women in wage work is so poor, policies are required as well based on a better understanding of the manner in which large public employment programs can benefit the women, finding the barriers to greater participation. Moreover, involvement of employee in informal sector is increasing. Considering this fact, arrangement of training and technical education of them should provide in an emergency basis. To engage the people

especially women in more productive and remunerative sectors, their access to information should be easy and cheap. In addition, Bangladesh should give the highest priority to a higher employment intensive economic growth by adopting a number of strategies like expansion of large scale manufacturing industries, rapid growth of small and medium enterprises, widening micro credit based and targeted employment generation programs, especially for the poor in both the rural and urban areas as well as continuation and further strengthening of social safety net programs to provide employment during lean seasons and at the time of natural disasters; providing credit, training for self-employment and last but not least, ensuring proper work environment through the legal rights.

CHAPTER V

RESULTS AND DISCUSSIONS

Introduction

This chapter has been designed to present the findings of the study. Based on the analysis of the data, it has been divided into four sections namely background characteristics, socio-economic and demographic differentials in income, impact of wage on the total income and women laborers empowerment index. In the beginning of this chapter, some information of the socio-economic conditions and labor market of Bangladesh have been presented.

5.1 Background Characteristics

5.1.1 Prelude

Bangladesh is one of the developing countries of the world. It is also one of the densely populated countries of the world with 1015 living people per square kilometer. Its total population is 149.77 million and annual growth rate of population is 1.37. Near about 85% people live in rural areas and male-female ratio of the population is 100.3. Around 35.20% of its rural people are living below the poverty line and near about 21.% of the rural people live in hard core poverty (BER, 2013). Most of the poor are from the rural landless households and they earn livelihood primarily by selling labor. They do not have land, working capital and even basic literacy. Their primary means of living is earning an income through sale of physical labor. But inadequate employment opportunities in the rural areas do not enable them to earn minimum income for subsistence living.

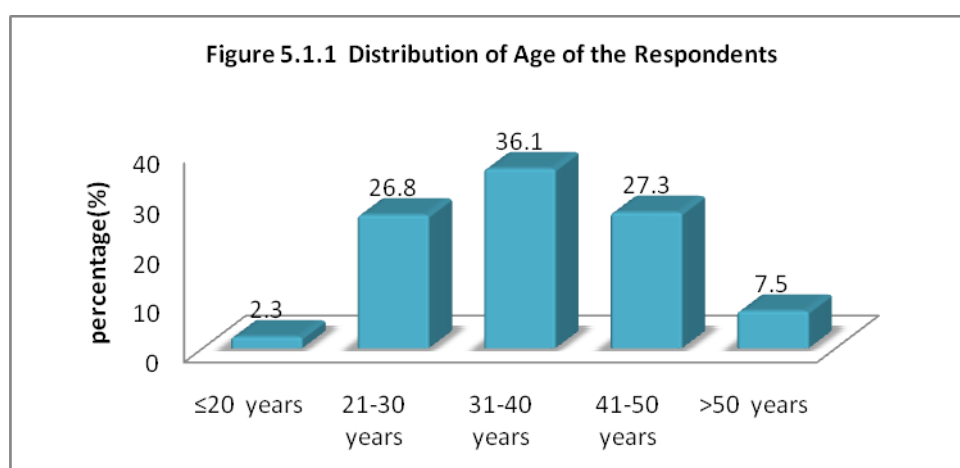
If we look at the labor market of Bangladesh, we see that the growth rate of youth labor force during 1999-2000 to 2010 has stood at 3.72% while the growth rate of total labor force was 3.37% per year. Youth labor force for urban area has increased from 3.4 million

in 1999-2000 to 5.1 million in 2010, which was counted by 50%, whereas rural labor force has increased 42.3% (11.1 million to 15.8 million) for the same period (BBS, 2011). There is a remarkable change taken place in the labor market of Bangladesh from past three decades that is addition of women. The dominant position of informal sector in share of absorption of labor in Bangladesh, to a large extent, is caused by compulsions for survival. The ever increasing pressures to sustain, in the context of growing need have pushed people to engage in income generating activities. The option for people to make choices and to claim rights to decent employment has remained elusive in the context of survival and hence has been subjected to injustices and dispossession (Titumir, 2013). In this context of employment, the state women are miserable and they are subject to injustices and dispossession especially in the rural areas of Bangladesh. To support the minimum needs of live, women of the rural area are being involved in the means of earnings. The number of employed women has increased from 7.9 million in 1999-2000 to 9.8 million in 2002-2003 with an annual rate of 8.02% per annum whereas this rate of increase was 5.1 per cent between 2002-2003 and 2005-2006. Additionally, this rate was 11.3% between the year 2005-2006 and 2010 at the national level (Titumir, 2013). In these circumstances, background characteristics of this study are as follows.

5.1.2 Personal Characteristics of the Respondents

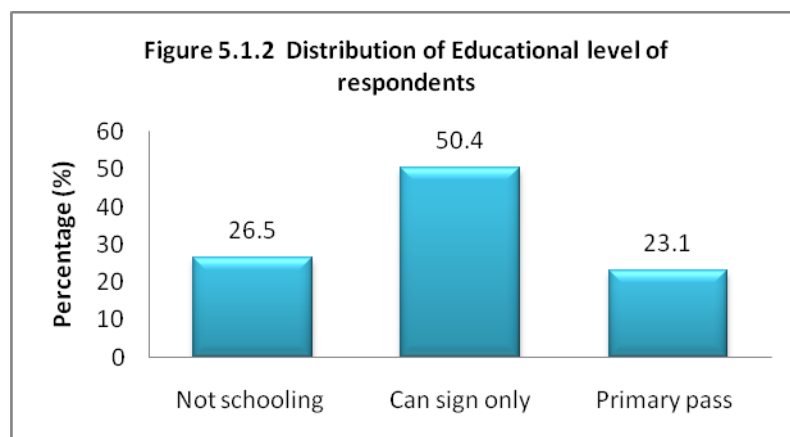
The age of an individual in censuses is commonly defined in terms of the age of the person at his last birth day. The table of this study showed that age of the labor women ranged from 16 to 80 years. Based on the age levels, they were grouped into five categories such as ≤ 20 years, 21-30 years, 31-40 years, 41-50 years and ≥ 50 years. Women Laborers of different age level (16-80 years) were participated in different seasonal agricultural activities of selected items. Within different age group, majority

(36.10%) of women laborers were of age group 31-40 years who had participated in agricultural activities. Because generally women of this age group are physically able to perform that properly. Women's participation in agriculture increases with the increase of age and their participating tendency is on the declining when they are reaching at the age group of 31-40 years. It is said from this information that agricultural work is labor intensive this is why women age group of 31-40 years had participated more in agriculture.



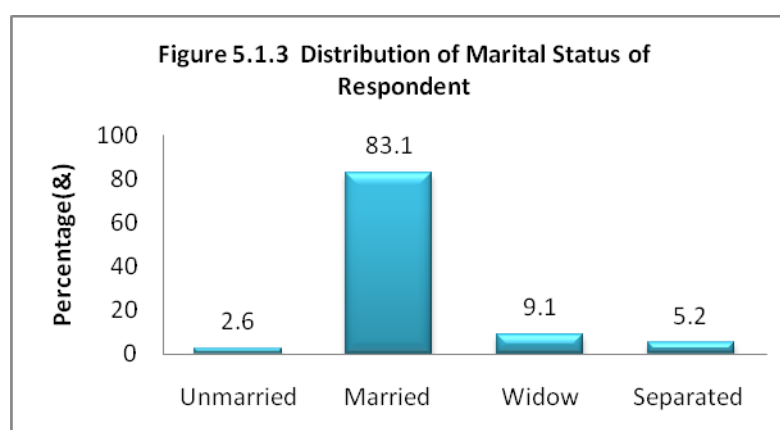
Based on educational qualification, the respondents were classified into three groups i.e., no schooling, can sign only and primary level education. In our study, it was observed that a countable part of total respondents 26.50% was illiterate that means they have never gone to school, 50.40% respondents could sign only their names and 23.10% respondents had primary school education only among the total respondents. Of the respondents, who had literacy in the study area were supposed to be employed in good jobs. But for the lack of employment in the study area they had been compelled to adopt agricultural work as their means of income. Generally it is told that education helps men to broaden their outlook and expand mental perspective along with helping them to develop favorable attitude and awareness. An educated person is likely to be more

responsive to the modern facts and ideas. Halim (1982) conducted a study on contribution of schooling in agricultural production and found that farmers having up to secondary level education contributed positively to farm production. But there were seen no differences of wage regarding education of the respondents.



The health effects of women's labor often go overlooked in the face of hard realities. For giving continuous labor, they are very much vulnerable to health risks such as TB, various kind of hectic fevers and other infectious diseases. When they fall victim to these diseases, their health status is further diminished by the harsh realities of malnutrition, injury, and fatigue due to long hours of demanding physical labor. Intense physical labor may be detrimental to health as it disturbs women's energy balance. For example, the low-calorie diet and high workload for women in developing countries is often associated with ovarian suppression and poor reproductive functioning. If intense physical exertion continues during pregnancy, it may be predictive of adverse reproductive outcomes. Of our study group during agricultural activities majority of the women (93.50%) were physically fit. About 6.50% of them were sick. All the respondents of study group contributed in agricultural activities though the extent of contribution of sick persons was likely to be varied.

Marital status is an important factor for women laborers in the area under study. From our study group it was seen that 2.60% labor women was unmarried where as 63.10% was married. Women laborers as widowed and separated by any cause were 9.10% and 5.20% respectively. Among the respondents, a large number of women laborers were married that means they might be laborers for getting some extra income for their families. If we look at the socio-economic profile of the respondents we can generally say that respondents got involved in agriculture for their poverty and along with its related causes. In other words it can be assumed that they had sold their labor in agriculture finding no other alternative source of income for managing their bread.



Based on the religious identity of the respondents, 61.80% was Muslim and 38.20% respondent was non Muslim in the study area. This information is very much maladjusted to our census report of population composition based on religion. There may have many causes of it. Two causes can be mentioned regarding this. One is non Muslim women are more vulnerable and they are engaged in agricultural activities finding no sources of income, and another is population proportion of non Muslim in the study area are more in number than the other areas of Bangladesh.

Table 5.1.1 Distribution of Personal Characteristics of Agricultural Women Laborers in the Study Area

Characteristics	Level	Labor women in agriculture	
		Frequency	Percentage(%)
Current age of respondent	≤20 years	9	2.30
	21-30 years	103	26.80
	31-40 years	139	36.10
	41-50 years	105	27.30
	≥50 years	29	7.50
Educational status of respondent	No schooling	102	26.50
	Can sign only	194	50.40
	Primary pass	89	23.10
Physical condition	Physically fit	360	93.50
	Physically sick	25	6.50
Marital status of respondent	Unmarried	10	2.60
	Married	320	83.10
	Widow	35	9.10
	Separated	20	5.20
Religious status	Muslim	238	61.80
	Others	147	38.20

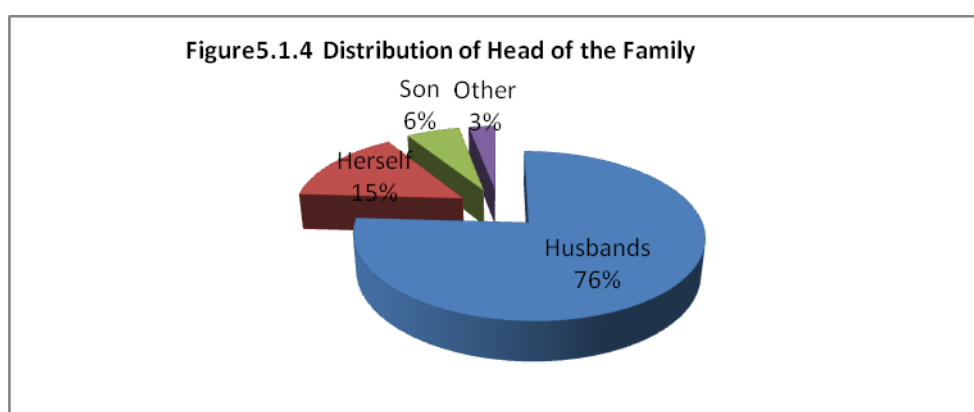
5.1.3 Familial Characteristics of the Respondents

Agricultural women laborers of this study belong to two types of family. These were nuclear family and joint family. Majority (76.90%) of the women belong to nuclear family, while only 23.10% belong to joint family. As a matter of fact at 76.90% of women belong to nuclear family which indicated that nuclear family is more vulnerable financially. For getting additional income, women from nuclear family are compelled to be engaged in agricultural activities. Women's participation from joint family is comparatively low because of having economic security. Women from joint family have a familial tie which secured them from uncertainties and this is why they are less in number in agricultural activities of Bangladesh.

Number of more children is supposed to be a factor of participation in agricultural activities for the women. In other words, it is said that the more the number of children

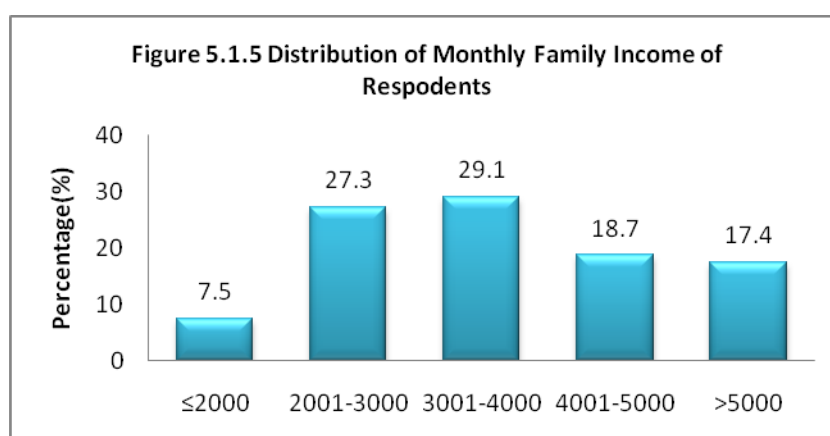
the more the participation of women in agriculture. In the study area, 41.60% of the respondents had the number of adult children in between two and 24.40% of the respondents had more than two and 34 women had no adult children and the average number of adult children was 1.54. Number of dependent children was in between two to 57.70% and above two to 18.90% and 34 women had no dependent children and the average number of dependent children was 1.54. For maintaining a big family it needs additional income. In our study population there were at least two dependent member in 44.20% family and above two dependent member in 42.60% family where as there were no dependent member in 13.20% family only. More dependent member of a family needs more money. For managing more money women are to be participated in arduous job like agricultural work.

Bangladesh society is male dominated in nature. It is expected in this society that only male members will go outside home and they are responsible for livelihood. Women are not expected to go outside home for earnings. In this society almost all of the families are male headed. Female headed family is formed only when on one of eligible male are found. Among the study population 75.90% family were husband headed, 15.10% were respondent own headed (female headed), 6.0% were son headed and rest 3.0% were headed by other relatives. It indicates that most of the family was headed by male persons in whom women are not supposed to go outside home for work or earnings. But women were seen in agricultural work because of having hard realities in leading life.



Generally women laborers in the study area have a very low economic profile. They had a little resource except personal labor. Even though, it is seen in collecting data that some women have no dwelling house of their own. They live in an emaciated and shriveled thatched room with a number of children. In this study, 70.90% respondents had their own dwelling house and 29.10% had no own dwelling house. On an average of the population 40.80% respondents had only 10 or below 10 decimal of land and 14.30% had 11-20 decimal land, 9.40% had >20 decimal land property and 35.60% respondent were landless.

Monthly family income of respondent women varied from Tk. 500 to 12,000 having an average of Tk. 4,183 per season. Based on monthly income of family, women were classified into five categories very low income (up to Tk.2,000), low income (Tk. 2,001-3,000), medium income (Tk.3,001-4,000), medium high income(Tk.4,001-5,000) and high income (Tk. above 5,000) and the corresponding respondents were 19.0%, 27.50%, 32.50%, 13.20% and 7.80% respectively.



Women laborers in the study area were very distressed economically which had been reflected on their money borrowing tendency from their neighbors. It was found from the data that among the respondents of the study, 29.60% respondent had to borrow Tk. 1001 to 5000 and 13.50% respondent had to borrow Tk.5001 to Tk.10,000 in previous year. On

an average of their borrowing money they had to take Tk.3159. It can be said from the information that respondents' family was very needy economically though both of wife and husband had earned money through selling their labor.

Table 5.1.2 Familial Characteristics of Agricultural Women Labor in the Study Area

Characteristics	Level	Labor women in agriculture	
		Frequency	Percentage(%)
Type of family	Nuclear	296	76.90
	Joint	89	23.10
Number of adult children	≤2	160	41.60
	>2	94	24.40
	No adult children	131	34.00
Number of dependent children	≤2	222	57.70
	>2	73	18.90
	No dependent children	90	23.40
Number of dependent member	≤2	170	44.20
	>2	164	42.60
	No dependent member	51	13.20
Family head	Husband	292	75.90
	Herself	58	15.10
	Son	23	6.00
	others	12	3.00
Own dwelling house	Yes	273	70.90
	No	112	29.10
Amount of land(decimile)	≤10	157	40.80
	11-20	55	14.30
	>20	36	9.40
	No land	137	35.60
Monthly income(TK.)	≤2000(Very Low)	29	7.50
	2001-3000(Low)	105	27.30
	3001-4000(Medium)	112	29.10
	4001-5000(Medium.H)	72	18.70
	>5000(High)	67	17.40
Monthly expenditure(TK.)	≤2000	73	19.00
	2001-3000	106	27.50
	3001-4000	125	32.50
	4001-5000	51	13.20
	>5000	30	7.80
Loan of previous year(TK.)	≤1000	5	1.30
	1001-5000	114	29.60
	5001-10000	52	13.50
	>10000	17	4.40
	No	197	51.20
Savings of previous year(TK.)	≤1000	48	12.50
	1001-5000	93	24.20
	5001-10000	36	9.40
	>10000	77	20.00
	No	131	34.00

On the other hand, it was seen in their saving tendency that 34.0% respondent could not save a single penny from the previous year. Among the respondents, only 24.20% had saved Tk. 1001 to 5000, 9.40% had Tk.5001to10000 and 20.0% respondent had saved Tk. above 10000 in the study area.

5.1.4 Connection with NGOs

Women laborers were supposed to have a good connection with NGOs of the country. Since Non Government Organizations (NGOs) are playing an important role in the development process of this country. Moreover the target group of the NGOs is women this is why respondents' involvement with NGOs were supposed to be very high. Among the study population, 56.90% agriculture women laborers were related to different NGO's and 43.10% were not. Of the 56.90% respondents, only 21.30% respondent had taken part in different training activities where a big number of participants (78.70%) had no training. Among the trainees, 40.24% had taken training on Goat/cow rearing and 34.14% in farming and 17.08% in vegetables cultivation. If we look at the training period, we see that all the training session was confined to 10 days. The duration of the most of training (58.54%) had been conducted for below 5 days and rest (41.46%) was for above 5 days. It was in questions that how much skill had been developed by these short training programs or activities. Besides the respondents who had taken part in different training programs or activities, none of them had taken part in any agricultural working skill development programs or activities of the study area. In other words, no agricultural working skill development programs or activities had been taken by the NGOs with which they were related to.

Table 5.1.3 Agricultural Women Labor based on their connection with NGOs in the Study Area

Characteristics	Level	Women laborers in agriculture	
		Frequency	Percentage(%)
Relation with NGO's	Yes	219	56.90
	No	166	43.10
Participation of training	Yes	82	21.30
	No	303	78.70
Name of the training	Development of dwelling place	1	1.22
	Farming	28	34.14
	Goat/cow rearing	33	40.24
	Nursery	2	2.44
	Poultry	4	4.88
	Vegetable cultivation	14	17.08
	Total	82	100.0
Training period(day)	≤5 days	48	58.54
	>5 days	34	41.46
	Total	82	100.0

5.1.5 Determinants of Participation in Work

Generally male chauvinistic society does not encourage women to work out side of the house but in the study area it was seen that a large number of women are engaged in agricultural work. It was only for several causes for which the women were compelled to be engaged in agricultural working. In a study it was seen that only women from small and landless households were involved in field agriculture and wage labor. Field agriculture and wage labor are related to izzat (honor) of the household. As a result, those who work in field agriculture and earn a wage to live are viewed as low-status women in the village (Zaman, 1995). Among the study population about 90.60% respondent had shown the poverty as a cause of their working. Actually rural area is severely poverty stricken. In the Bangladesh Economic survey 2013, it is seen that more than 40.0% people of the country live under poverty line of which 25.0% live under hard core poverty (BES, 2012).

Table 5.1.4 Agricultural Women Laborers According to the Factors of Participation in the Study Area

Determinants of working in agriculture	Frequency	Percentage (%)
Poverty	349	90.60
Children education	222	57.70
Paying debt	183	47.50
Greater number of children	145	37.70
Work for pleasure/can't sit idle	118	30.60
Seeing others working	111	28.30
Husband pressure	90	23.40
NGO's encouragement	85	22.10
Husband careless	72	18.70
Husband illness	62	16.10
Husband departure to others	49	12.70
Husband death	42	10.90
Greater number of siblings	34	8.80
Father's death	18	4.70
Being divorce	9	2.30
Father's carelessness	6	1.60
Husband going abroad	4	1.00
Familial development	4	1.00
Mother's death	3	0.80
Step-mother pressure	1	0.30
N.B: For all causes total number of respondent is 385		

Poverty in Bangladesh is still remaining pervasive, and that is particularly conspicuous in rural areas. The burden of poverty still falls disproportionately on women. So it can be generally taken that poverty is the main factor for women's participation in agricultural work.

Among the other factors of their involvement in agricultural work, children's education was the second highest in number which was 57.70%. This factor is an encouraging one because of having consciousness regarding education of the respondents though a large number of them were illiterate. Another dominant factors of their participation were for paying debt, for greater number of children, for can't sit idle, for working of other persons, husband pressure, for NGO's encouragement, for careless of husband, illness of husband had been shown as the other causes of being agricultural laborer of 47.50%, 37.70%, 30.60%, 28.30%, 23.40%, 22.10%, 18.70%, 16.10% respectively. It is assumed that all of these factors are directly or indirectly related to poverty. Among these factors poverty, children education and paying debt have significant effect on to be an agricultural labor of women in the study area.

5.1.6 Participation in Work in Different Seasons

On the basis of production and labor use, three working seasons commonly found in the study area. These are Boro/IRRI season, Amon season and winter season. According to the crop calendar of Bangladesh IRRI/Boro season starts from January and continues up to May. Likewise *Aman* season starts from July and goes to December of the year. Winter season is not a season like Boro or *Aman* season in nature. It is a season for growing vegetables. Actually various types of vegetables are grown in plenty in Bangladesh round the year. But winter season is called the season of vegetables as because of growing a large variety of vegetables in it. This is also much longer than the other seasons that starts usually in September of the calendar and continues up to February. But all the vegetables which are grown round the year were presented here with the works of winter season.

5.1.6.1 Types of Work in Boro and *Aman* Season

Among the total 385 respondents, 378 and 377 respondents participated in IRRI season and *Aman* seasonal works. Of the participants 12.43% and 12.47% participated in preparing seed bed in IRRI and *Aman* season respectively. For uprooting seeds, 28.3% and 40.58% respondents worked in both of the seasons. For seed plantation 56.08% respondents had participated in IRRI season which was 61.27% in *Aman* season respectively. In both of the seasons for weed cleaning, the rates of participation were 66.93% and 64.72%. Near about same rate of participation had been seen in reaping of paddy which were 65.87% and 68.97% respectively. All of these works are treated as field agricultural works that are performed by both of women and men.

Table 5.1.5 Agriculture Women Laborers According to Their Participation in Works in Boro and *Aman* Seasons

Types of work	Number and percentage of workers in IRRI/ <i>Boro</i> season	Number and percentage of workers in <i>Aman</i> season
Preparing seed bed	47(12.43)	47(12.47)
Uprooting seeds	107(28.31)	153(40.58)
Taking water	13(3.44)	10(2.65)
Seed plantation	212(56.08)	231(61.27)
Weed cleaning	253(66.93)	244(64.72)
Reaping paddy	249(65.87)	260(68.97)
Threasing paddy	233(61.64)	239(63.40)
Sorting rice	91(24.07)	85(22.55)
Boiling rice	213(56.34)	198(52.52)
Dusting off rice	191(50.51)	173(45.89)
Hay making	179(47.35)	114(30.24)
Total	378(100.0)	377(100.0)

In homestead agricultural works threasing, sorting, parboiling, winnowing etc are worth mentioning. In the study area, it was seen that 61.64% and 63.40% respondents had worked of paddy threasing (dhan pitano/marai) in Boro and *Aman* seasons. For sorting of rice (dhan jachai) the rates of participation were 24.07% and 22.55% in both of the seasons. For parboiling of rice (dhan siddho), 56.34% and 52.52% respondents worked in both of Boro and *Aman* seasons. For winnowing rice, participation of women laborers was 50.5% and 45.89% and for drying of straw, 47.35% respondents participated in Boro/IRRI season which was 30.24% in *Aman* season respectively. Variation of their works in IRRI and *Aman* season was almost same. Among the works in both IRRI and *Aman* season, comparatively high percentage was seen in seed plantation, weed cleaning, reaping paddy, threasing paddy, boiling rice and dusting rice. Habiba Zaman (1985) in her study mentions that many village women work in the fields with men as agricultural wage laborers. Women not only participate in rice crop production and processing; they are also involved in the production and processing of other major crops such as sugarcane, jute, wheat, and other winter crops.

5.1.6.2 Types of Work in Winter Season

Nature of works in the winter season is totally different from the works of IRRI/Boro and *Aman* season. This is why participation in works in winter season was shown in a separate table. In winter season, various types of vegetables are grown in plenty in the study area. Works in the vegetable field in winter season are very simple but times consuming in nature for which such type of laborers are needed who can give more time with a small amount of wage. Women laborers are seemed to be very fit for these types of work. *Aman* the works of winter season, all sorts of oilseeds, spices, vegetables, sweet potato, corn etc. were considered.

Table 5.1.6 Agricultural Women Laborers according to their Participation in Works in Winter Season

Types of work	Number and percentage of workers in Winter season
Master related tasks	92(24.40)
Potato relater tasks	304(80.64)
Parable/bitter gourd related tasks	180(47.75)
Green chilies related tasks	147(38.99)
Sweet potato related tasks	31(8.22)
Ginger/garlic/onion	110(29.18)
Corn related tasks	189(50.13)
Total	378(100.0)

Among the total 385 respondents, 378 respondents had participated in the works of winter season of which 24.40% workers participated in Mustard related works. Oil seeds like Mustard in the study area grow in plenty in winter season. Women laborers are appointed in plucking mustard from the field and after taking the mustard at home, they are taken to thresh and separate the oil seed from the straws. Thus it is seen that respondents are needed in three steps of mustard related work. Like mustard, a huge amount of potato grows also in the study area for which laborers are needed in different steps. Actually respondents' participation as laborers is seen in planting potato, plucking period and in sorting and maintenance time. It was seen in the study area that about 80.64%

respondents had taken part in these three steps of potato related works. Similarly a high participation (47.75%) was seen in parable/bitter gourd related works. Laborers' participation is seen usually in plucking parable/bitter gourd from the field. Likewise a remarkable participation (38.99%) was seen in Green chilies related works. But women laborers' participation in sweet potato related works was not high (8.22%).

Like potato related works, women laborers' participation in ginger/garlic/onion related works are seen in various steps. At the time of planting, plucking and sorting of these spices they are asked to get in. Among the respondents, 29.18% had participated in ginger/garlic/onion related works. Corn is a little bit new cereal in the study area. Cultivation of corn is time, cost and labor intensive. A huge amount of labor is needed in it. Women laborers are employed in corn cultivation in plucking, threshing, sorting and in maintaining straws. It was found in the study area that 50.13% had participated in Corn related works. Among the participation of women laborers in the study area, potato related works, parable/bitter gourd related work and corn related work were found very high in percentage.

5.1.7 Base of Work, Working Hour and Employment in and out of Season

There were seen mainly two bases of employment of women laborers in the study area. One is daily wage basis through which wage is paid daily for a full day and another is contract basis in which wage is paid after having finished the respective work. In daily wage basis, a full day is the basis of wage and whereas in contract basis the work is the basis of wage, day is not considered in this respect. Usually it is seen in the study area that (based on the researcher observation) agricultural male laborers participate in work on the basis of contract. Agricultural laborers have a changing tendency of being employed in work on contract basis. It is simply because of having some advantages in it.

One of the advantages is that laborers get much wage through this sort of work as they can put much/intensive labor. Secondly they enjoy the freedom of working merrily which is absent in daily wage basis employment. Thirdly they have an opportunity to make a group of likeminded workers for contract basis. But for the women laborers in the study area, this scene is quite different in peak and dull season. Among the total respondents, 79.70% worker worked daily wage basis and 19.50% worked both of daily and contract bases, whereas participation in contract basis was almost nil (0.80%) in peak season. Similarly in dull season, this rate of involvement had increased to 96.60% whereas contract basis had cut down to 2.90% from 19.50% as there was no pressure of work. It was because if having no opportunity or ability of working of the respondents.

Duration of working hour in days on both of the bases was varied. About half of the respondents (49.30%) worked not more than 08 hours per day on daily wage basis whereas it was only 10.40% on contract basis. It indicates that women had to invest more time in contract basis work. On the other hand a large number of respondents (68.10%) had given no answer as they had not been participated in work on contract basis.

Table 5.1.7 Distribution of Agricultural Women Laborers on the Basis of Work, Working Hour and Employment in and out of Season in the Study Area

Characteristics	Level	Frequency	Percentage (%)
Base of work in season	Daily wage basis	307	79.70
	Contract basis	3	0.80
	Both	75	19.50
Base of work in dull season	Daily wage basis	372	96.60
	Contract basis	11	2.90
	Both	2	0.50
Working hour on daily wage basis	≤8 hours	190	49.30
	>8 hours	184	47.80
	No answer	11	2.90
Working hour on contact basis	≤8 hours	40	10.40
	>8 hours	83	21.50
	No answer	262	68.10
Get work every day in dull season	Yes	16	4.20
	No	369	95.80
Total days in a month who did not get work	<10 days	184	49.90
	10-20 days	173	46.90
	>20 days	12	3.10

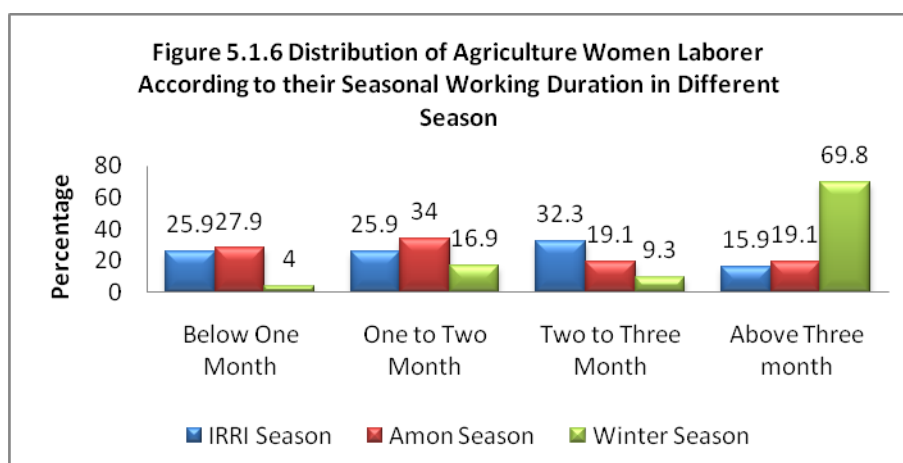
In dull or slack season, women do not get work in every day. They are to depend on the savings of peak season. Among the study population, 95.80% agriculture women labor did not get work every day in dull season for which they were to remain slack. If we look at the slacking period of the respondents, we see that about half of the respondents (46.90%) did not get work for 10-20 days in month.

5.1.8 Duration of Work in Different Seasons

If we look at the duration of work based on the three seasons, we see that a significant number of respondents had got work less than 30 days in every season which is 25.90% in Boro/IRRI, 27.90% in *Aman* and 4.0% in winter season. Likewise near about same number of respondents had got 60 days work in each seasons. These figures were 25.90% in Boro season, 34.0% in *Aman* season and 16.90% for winter season respectively. But a remarkable change had been seen in the last duration group of the table. In this group, 15.90% and 19.10% respondents had got more than 90 days work in Boro and *Aman* season which was 69.80% in winter season. Data showed that there was a wide scope of getting more work in winter season. In other word, winter season is longer than the other season this is why respondents had got more work in this season.

Table 5.1.8 Distribution of Agriculture Women Laborers According to their Duration of Seasonal Working in the Study Area

Range of seasonal working duration(days)	Percentage of women labor participation in different season with different duration		
	IRRI/Boro	<i>Aman</i>	Winter
<30 (less than one month)	98(25.90)	105(27.90)	163(42.30)
30-60 (one to two months)	98(25.90)	128(34.0)	156(40.50)
61-90(two to three months)	122(32.30)	72(19.10)	12(3.10)
>90 (above three months)	60(15.90)	72(19.10)	0(0.0)
Total	378(100.0)	377(100.0)	331(100.0)



5.1.9 Wage Distribution of Different Seasons

Wage of the respondent women laborers classified into four classes namely very low income group (less than Tk. 5,000), low income group (Tk.5, 000-10,000), medium income group (Tk.10, 001-15000), high income group (more than Tk. 15,000). The distribution of the women laborers based on their wage scores have been presented in Table 5.1.9

Table 5.1.9 Distribution of Agriculture Women Laborers According to Wage of Seasonal Working in the Study Area

Ranges of Seasonal Wage	Percentage of Women Labor Participation in Different Season with Different Wage		
	IRRI/Boro	Aman	Winter
Very low income (<5000)	169 (44.70)	173 (45.90)	270(81.60)
Low income(5000-10000)	90 (23.80)	79 (21.0)	61(18.40)
Medium income (10001-15000)	100 (26.50)	121 (32.0)	0(0.0)
High income (15000+)	19 (5.00)	4 (1.10)	0(0.0)
Total	378(100.0)	377(100.0)	331(100.0)

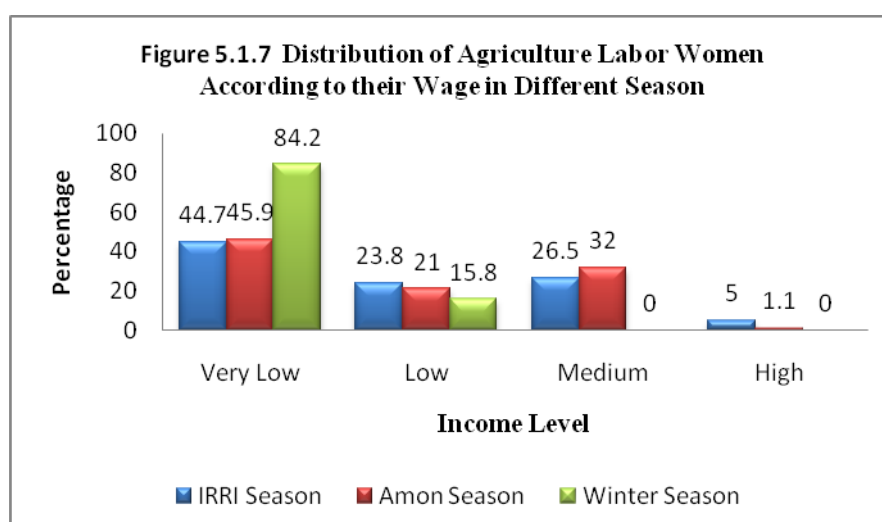


Table 5.1.9 shows that a large number of the women laborers had very low income in the study area. This indicated that women laborers' contribution to their families was not satisfactory though they were giving their labor with combating their male counterparts. It was also seen in the table that among the very low income group, there were a wide variation in seasons. In Boro and *Aman* season, this variation was nearly zero but in winter season, it was about double in number (84.0%). It was because of the nature of work in winter season. In winter season they had to do many time killing but simple works with having a small amount of wage. The number of women laborers in very low income group was near about 81.60% in the winter but in other two seasons these rates of participation were 44.70% and 45.90% respectively. In low income group, the rate of their participation was on the wane (18.40% from 84.0%) in winter season which were 23.80% and 21.0% in IRRI and *Aman* seasons. It revealed that with the increase of wages, participation of women laborers were on the wane. Furthermore it was interestingly to note that participation of women laborers in medium and high income group in the area under study was nil in winter season though it was 26.0% and 32.0% in medium wage group and 5.0% and 1.0% in high income group respectively. So it can be said that women laborers in winter season were bound to sell their labor in cheaper rate as they had no alternative source of income.

5.1.10 Variation of Wage in Different Seasons

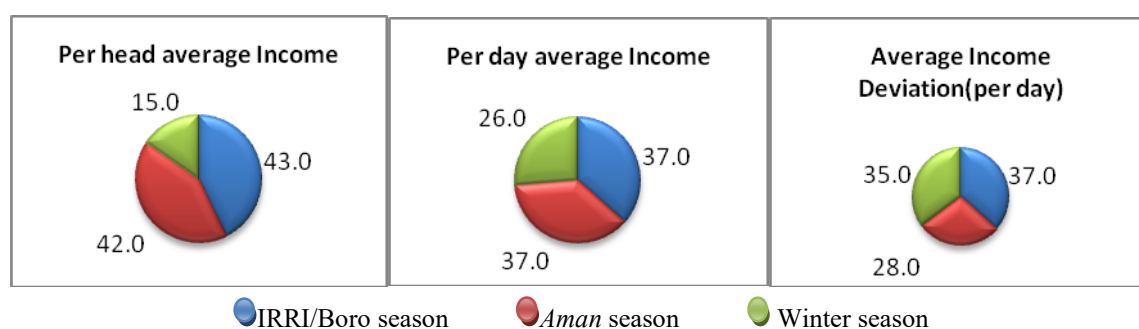
Nature of works was not same in different seasons in the study area. Especially the nature of works in winter season was quite different from the works of other two seasons. Similarly amount of wage was also varied greatly in respective of seasons. It was seen in the study area that per head average income in Boro and *Aman* season were Tk. 7215 and Tk. 7065 respectively which was only Tk. 2574 only in winter season and similarly per

day average income in Boro and *Aman* season were Tk. 134.06 and Tk. 136.78 respectively which was only Tk. 96.41 in winter season. Per head average income in every season had varied greatly in terms of seasons. But in case of average income deviation, the difference had been seen in *Aman* season. Income deviation in Boro and winter seasons was almost same (Tk. 57.65 and Tk. 55.14) and in *Aman* season it was Tk. 44.58 which indicates that there was less wage difference in *Aman* season.

Table 5.1.10 Income Deviation of the Agriculture Women Laborers in the Study Area

	IRRI/Boro season	<i>Aman</i> season	Winter season
Per head average Income	7215.26	7065.44	2574.13
Per day average Income	134.06	136.78	96.41
Average Income Deviation(per day)	57.65	44.58	55.14

Figure 5.1.8 Distribution of Income Deviation of the Agriculture Women Laborers in the Study Area



5.1.11 Mode of Wage Payment

Payment of wage is an important issue of labor employment in the study area. There were seen four modes of wage payment. Of the study population it observed that 59.0% labor women got their wage every day after work, 31.70% women got it every Bazar day, 7.0% women got it every week and 2.30% women got their wage after working season. Among the modes, wage payment after daily work was the highest in percentage that indicates vulnerability of living. In an answer to the question of whether they face any difficulty in

getting their wage, 32.70% respondents had faced different kind of problem in getting their wage in the study area. Among the problems, more than half of the respondents (55.56%) had told that they had to ask time and again for getting the due wages. Of the respondents, 25.40% had told that they had not got the wage at a time from the employers. Of the respondents it was seen that 4.76% had to receive goods instead of money. It can be said from this information that respondents were bound to receive goods as because of having poor price of goods in the study area. On the other hand, getting money instead of goods was nearly zero (0.79%). It might be an indication that price of produced goods always remains low in season in the study area. About 12.70% of the respondents had faced all sorts of problems in getting their wages from the employers.

Table 5.1.11 Distribution of Agriculture Labor Women According to Mode of Wage Payment in the Study Area

Characteristics	Level	Frequency	Percentage(%)
How Wage is paid	Every-day after work	227	59.00
	Every bazaar day	122	31.70
	Every week	27	7.00
	After season	9	2.30
Problem of getting wages	Yes	126	32.70
	No	259	67.30
Type of problems in getting wage	Ask time and again	70	55.56
	Do not pay all the due	32	25.40
	Pay less than due	1	0.79
	Pay goods instead of money	6	4.76
	Pay money instead of goods	1	0.79
	All	16	12.70
	Total	126	100.0

5.1.12 Discrimination in Work

There were discriminations in regarding to their wage, given time and facilities in comparing with their male counter parts in the study area. Among the total respondents 99.5% said that they had got less wage than the male laborers. Of the respondents, 54.57% had got taka 26 to 50 and 35.50% had got taka 51 to 75 less than their male counter parts. Among the total respondents 46.20% said that they had to give more time

in work. Among them 65.17% respondents had to give less than an hour more in work and 19.10% had to give 1-2 hours, 7.30% had to give four hour and 8.42% had to give more than six hour in their work in the study area. In case of facility, there was not seen remarkable discrimination. Among the total respondents, only 7.80% workers said that there was also discrimination in giving facility by the employers in the study area.

Table 5.1.12 Distribution of Agriculture Labor Women According to Discrimination between Male and Female in the Study Area

Type of discrimination	Level	Frequency	Percentage(%)
Wage discrimination	Yes	383	99.50
	No	2	0.50
Range of discrimination(TK.)	1-25 taka	5	1.30
	26-50 taka	209	54.57
	51-75 taka	136	35.50
	>75 taka	33	8.62
Time discrimination	Yes	178	46.20
	No	207	53.80
Range of discrimination(Hour)	≤ 1 hour	116	65.17
	1-2 hours	34	19.10
	3-4 hours	13	7.30
	5-6 hours	15	8.42
Discrimination in facility	Yes	30	7.80
	No	355	92.20

Regarding discrimination of the women laborers in agriculture Habiba *Zaman* (1995) in her study ‘Patterns of Activity and Use of Time in Rural Bangladesh: Class, Gender, and Seasonal Variations’ showed that there were several interesting points. First, women from all peasant classes allocate more time to postharvest tasks. In most cases, these women work as unpaid family laborers. Their labor, however, was essential for economic survival of the household. Second, women from middle- and small-peasant households appear to be active in agricultural operations in all three seasons.

5.1.13 Victim of Harassment or Abuse

It is seen in the rural area of Bangladesh that poor women fall victim to various type of harassment or abuse. Women laborers, as a disempowered and vulnerable section of

society may easily fall in harassment or abuse. They are also more likely to be victimized as they are to work in every nook and corner of society with their male counter parts and sometimes with employers and owners. It was seen in the area under study that a reasonable number of respondents (16.88%) had been victimized by their fellow workers.

Table 5.1.13 Distribution of Agriculture Women Laborers According to the Abuses they had Fallen in the Study Area

Harassment/abuse	Level	Frequency	Percentage (%)
Fall in harassment	Yes	65	16.88
	No	320	83.12
	Total	385	100.0
Type of harassment	Rape	01	1.54
	Touch on body	12	18.46
	Vulgar gesturing	19	29.23
	flinging filthy words	33	50.77
	Total	65	100.0
Harassment by whom	Owner/Employer	15	23.08
	Fellow male	46	70.77
	others	04	6.15
	Total	65	100.0

Of the type of harassment, throwing vulgar words, vulgar gesturing, touching on the body were worth mentionable. Of the respondents, more than half of them (50.77%) had been abused mentally by the filthy and vulgar words and 29.23% had been fallen victim to vulgar gesturing. Among the others, 18.46% had been oppressed physically and one of the respondents had also been raped in the study area. Data showed that most of them (70.77%) had been victimized by their fellow male laborers and 23.08% had been victimized by their employers or owners.

5.1.14 Attitude of Male Laborers towards Respondents

Attitude of male workers towards women workers is an important indicator of their smooth participation in agriculture. In an answer to the question of what attitude the male laborers show in work place, near about all of the respondents (96.60%) said that the male labor had counted them as supplementary labor and only 3.40% respondent opined that

male labor saw them as their fellow laborers. Male chauvinistic outlook had been seen in the feeling of Male laborers in the study area. According to opinion of the respondents, 55.30% male laborers think that Women cannot work as much as a man can and 35.80% male treats women laborers as weak for working.

Table 5.1.14 Agriculture Labor Women According to Attitudes of Male Laborers towards the Respondents in the Study Area

Characteristics	Level	Frequency	Percentage (%)
Male laborers' attitude towards respondents	As supplementary laborers	372	96.60
	As fellow laborers	13	3.40
Male laborers feeling about their female colleague	Women are weak	138	35.80
	Women do not know working	27	7.00
	Women cannot work as a man	213	55.30
	Women should stay in house	7	1.80

5.1.15 Participation in Familial Work in Season

Women laborers are earning members of family along with husbands. So both of them were supposed to do the all domestic chores jointly or amicably. But their participation in domestic chores varied greatly in the study area. It was seen that 68.30% respondent had spent up to five hour in a day on domestic chores whereas it was only 40.50% for male laborers and 31.70% women labor spend more than five hour in a day on domestic chores whereas it was only 3.40% for male laborers. It was worth mentioning that 56.10% husband did not spend any time on domestic chores. Despite earning wage for family about 80.80% women laborer had to do domestic chores regularly.

Table 5.1.15 Distribution of Agriculture Labor Women According to Participation in Familial Work in Season in the Study Area

Characteristics	Level	Frequency	Percentage (%)
Time spend on domestic chores (hours)	≤5 hours	263	68.30
	>5 hours	122	31.70
Spent time by husband on domestic chores (hours)	≤5 hours	156	40.50
	>5 hours	13	3.40
	0 hours	216	56.10
In working season do domestic chores regularly	Yes	311	80.80
	No	74	19.20

5.1.16 Obstacles Faced in Work by the Respondents

In the context of Bangladesh obstacles to work is a common feature especially for women laborers in agriculture. It is seen that women laborers have faced a number of obstacles to their work in the study area. In our study population about 98.40% women laborers faced at least one type of obstacle to their work. A few respondents (1.60%) opined that they faced no obstacles to their working in agriculture. It means that work place is not so good for women laborers.

Table 5.1.16 Distribution of Agriculture Women Laborers Whether They Face any Obstacle to Work in the Study Area

Obstacle faced to work	Frequency	Percentage (%)
Yes	379	98.40
No	6	1.60
Total	385	100

In an answer to the question of what kind of obstacles do they face in work, it observed that 92.20% women laborer faced lack of toilet facility 44.90% feel uncomfortable with male and 41.80% feel uncomfortable in sun and rain which was the most important environmental obstacle to work for labor women. Physical limitation is one of the most important obstacles for women labor. Our study population shows that no ability to do all work is one of the obstacles for 68.80% women laborer; no training about all work for 50.40%, man does not call for all work for 71.90% and not like all work for 63.40% women laborer. Among the obstacle of social value lack of prestige, Breast feeding to child was the most important obstacles to work which were 32.50% and 23.40% respectively. Far distance of work field, uncomfortable road, no praying facilities is also an important obstacle for labor women in work.

Table 5.1.17 Distribution of Different Type of Obstacles Faced by the Respondents of Agricultural Women Labor in the Study Area

Type of obstacles	Obstacles	Frequency	Percentage (%)
Environmental obstacle	Lack of toilet facility	355	92.20
	Feel uncomfortable with male	173	44.90
	Feel uncomfortable in sun	161	41.80
Physical limitation	No ability to all work	265	68.80
	Don't know all work	194	50.40
	Man does not call for all work	277	71.90
	Not like all work	244	63.40
	Man look it bad	78	20.30
Obstacle of social value	Neighbor feel uncomfortable	19	4.90
	No participation in social function	23	6.00
	No prestige	125	32.50
	Young children	79	20.50
	Brest feeding problem	90	23.40
Communication obstacle	Far distance of field	152	39.50
	River crossing	89	23.10
	Uncomfortable road	140	36.90
	Not support to work in field	35	9.10
Religious obstacle	Maintain no purdah	115	29.90
	No praying facility	130	33.80

N.B: Total number of respondent for each obstacle is 379

5.1.17 Domestic Work, Selling Advanced labor, Starvation and Solvency of the Respondents' Family

Serving as a domestic worker is one of the means of earnings for women laborers in the study area. They participate in domestic working usually in slack season. It was seen in the study that 15.30% women laborer of the study served as domestic worker whereas 84.70% did not participate in it. In slack season, as the respondents did not get work regularly, they had to lead a miserable life. Sometimes for getting their daily bread they were bound to sell their labor in advance. It was seen that 21.80% women laborer sold their labor in advance because of supporting daily life. Among the total respondents, 39.0% workers said that they have to go without food for some days in the year. This indicates that respondents in the study area had been working with such a subsistence wage that in slack season, because of having no work, they were to go without food for some days in a year.

Table 5.1.18 Wages Distribution of Agricultural Women Laborers in the Study Area

Characteristics	Level	Frequency	Percentage (%)
Domestic worker	Yes	59	15.30
	No	326	84.70
Sell advanced labor	Yes	84	21.80
	No	301	78.20
Starvation in the year	Yes	150	39.00
	No	235	61.00
How Family goes on	Always in debt	109	28.30
	Occasionally in debt	51	13.20
	No surplus, no debt	105	27.30
	Surplus	120	31.20

In an answer to the question how family goes on, they opined that only 31.20% had surplus or savings from their earnings. On the other hand 28.30% had to depend always on debt from their neighbors for maintaining their families, and only 13.20% were in debt occasionally in the year. Among the total respondent, 27.30% had no surplus, no debt which indicates that they lived from hand to mouth.

5.1.18 Some Basic Awareness of the Respondents

Some basic awareness related questions regarding their participation had been asked to the respondents. Women laborers are to do work in various fields and spheres. For maintaining a sound life, they should be aware of their cleanliness. Washing their hands before taking meal is a crucial thing for keeping good health. It was seen in the study area that 27.80% worker did not wash their hand cleanly before taking their meals and 72.50% respondents did not use mask/spectacle/gloves/umbrella/straw at the time of working. For using no protections in work, respondents have high vulnerability to any kind of problem or illness. They might fall in illness like fever, dysentery; dehydration etc. but it was seen in the study area that 22.60% respondent had no knowledge of making oral saline. Among the study population a remarkable percentage 30.10% respondents did not use any method of family planning which was an indicator of their awareness. Having no knowledge of family planning is a big cause of population explosion in the study area.

Table 5.1.19 Nature of Basic Awareness of the Respondents

Characteristics	Level	Frequency	Percentage(%)
Hands wash before taking every meals	Yes	278	72.20
	No	107	27.80
Use of mask/spectacle /gloves /umbrella /leaf hat during work	Yes	106	27.50
	No	279	72.50
Knowledge of making saline	Yes	298	77.40
	No	87	22.60
Taking family planning methods	Yes	269	69.90
	No	116	30.10
Sending children to school	Yes	230	59.70
	No	155	40.30
Have any Radio/TV/Fans	Yes	24	6.20
	No	361	93.80

Regarding awareness of education, 40.30% respondents opined that they did not send their children to school. Only 6.20% respondents in the study area had Radio/TV of their own and 93.80% family had no Radio, TV or fan for their recreation.

Section 5.2

5.2.1 Contingency Analysis

In this section, a contingency analysis has been represented which is designed to test association between different phenomena of the respondents. To justify the association among the factors, at first, some simple cross tables have been constructed and then their association has been examined.

Table 5.2.1 and Table 5.2.2 contain the results of contingency analysis. The first column of these tables represents socio-economic and demographic characteristics of agricultural women laborers. Column 3 with 4 sub-columns represents row by row percentage distribution and column 4 give the value of chi-square statistic, corresponding degrees of freedom (d.f) and the coefficient of contingency to test the degree of association of the attributes. Finally column 5 presents the results of statistical test by means of chi-square statistic. The test is carried out at 5.0% level of significance.

5.2.2 Association of Wage with Socio-economic Variables

Age, educational qualification, physical condition, marital status, religion, family head, training taken, engaged in work, go to next village for work, work on basis, selling of advance labor, amount of land etc. of respondents were significantly associated with the wage variation at 5% level of significance.

Age and Wage: Age is an important variable which is statistically significantly associated with amount of wage. It is seen from the table that wage of the respondents has been increased with the increase of age and has been continued unto the age level of 31-40 years. But the level of wage had been decreased from the age level 41-50 years. A large number of respondents (50.50%) of age group 21-30 years had earned more than 20,000 taka in a year because they are very young and fit for different kind of agricultural work. But it was a little bit low (32.40%) for the age group of 31-40 years and these decreasing trends (29.50%) had been seen for the age group of 41-50 years. Similarly, participation of the respondents had been increased with the increase of age in low wage group (<10000). It was 34.0% for the age group of 21-30 years and increased to 48.30% for the age group of >50 years.

Education and Wage: Education of the respondents had been seen a statistically significantly association with wage in the study area. The participation of the respondents who had no literacy in the low income was 28.40% and in the high income group was 51.0% respectively. On the other hand, participation of the respondents, who had primary schooling were 32.60% in low income group and 40.40% in high income group in the study area. So it can be said that respondents who can sign only their names were generally engaged more in agricultural work. Because workers with no education were bound to sell their labor more days over the year as they had a little scope to earn their livelihood other than their selling labor.

Physical Fitness and Wage: Among the total respondents, a large number of them were physically fit and near about cent 1% of them had earned more than 20,000tk. in a year but about half (48.0%) of the unfit workers had earned less than 10,000tk. It indicated that physical fitness had a direct association with wage.

Marital Status and Wage: About 90.0% of the unmarried workers had earned low wage (less than 10,000tk.), whereas the position of married laborers in this group was only 30.60%. Among the married workers, 42.20% workers had earned more than tk. 20,000 whereas the participation of unmarried widowed and separated in the high wage group were 10.0%, 11.0% and 15.0% respectively. On the other hand, of the widowed and separated workers, 60.0% workers had earned less than 10,000tk. It meant that single persons (unmarried, widow, separated etc.) earned less than the married workers. In other words, it can be said that married laborers had been forced to be engaged more works for supporting their families.

Religious Identity and Wage: Based on the religious identity, it was seen that among the respondents, Muslim 47.10% workers had earned less than 10,000tk. and non Muslim 59.90% workers had earned more than 20,000tk. It was because of having some dominant religious values that discouraged Muslim laborers in participation of all sorts of agricultural activities which were high waged works. Or it might be that Muslim women laborers did not get proper religious environment for which they could not earn more in the study area.

Family Head and Wage: The contingency table shows that family head had also an association with wage of the families. It was seen that of the laborers from son headed family, 56.50% had earned less than 10,000tk. and 50.0% of the families headed by

respondent herself was also earned less than 10,000tk. 39.40% of the families headed by husband and 75.0% of the families headed by others had earned more than 20,000tk. respectively in a year. Generally it is said that respondents whose family head is either her husband or other persons were bound to sell their labor over the year or respondents from these families had been encouraged to sell their labor for wage.

Training and Wage: Training is supposed to have a good association with wage. There was seen an association of training with wage of the respondents in the study area. Of the trained workers, 43.90% had high income. On the other hand, participation in the high income group of the respondents who had no training was 35.30% only. So it can be said that training had a good association with wage.

Mode of Engagement and Wage: There was a good association between mode of engagement and wage. Only 13.60% of the respondents who got work by their owns accord had earned more than 20,000tk., whereas the participation in this high wage group of other respondents who were engaged in work either by employer's accord or sought from the bazaar was 51.80% and 72.70% respectively. It can be commented that skilled and efficient respondents never seek work; rather employers seek them for their efficiency.

Mobility for Work and Wage: Among the respondents who had to go another village for work only 14.40% of the respondents had got high wage and 47.30% respondents had got low level wage. Among the respondents who worked in her own village 62.0% respondents had earned more than 20,000tk. in a year.

Basis of Work and Wage: Among the respondents who worked in daily wage basis about 45.30% workers had high level wage and 27.40% had low level wage and among the respondents who worked in both daily wage basis and contact basis 73.30% respondents had low level wage that's mean in daily wage basis agricultural women labor could earn more.

Table 5.2.1 Association of Wage with the Socio-economic and Demographic Characteristics of Agricultural Women Laborers in the Study Area

Variables	Level	Total Seasonal Wage (in thousand taka)				p values d.f
		Low Wage <10000	Mid Wage 10000-20000	High Wage >20000	Total	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Age of respondents	≤20	1(11.10)	3(33.30)	5(55.60)	9(100.0)	p=.010 d.f=8
	21-30	35(34.0)	16(15.50)	52(50.50)	103(100.0)	
	31-40	49(35.30)	45(32.40)	45(32.40)	139(100.0)	
	41-50	41(39.0)	33(31.40)	31(29.50)	105(100.0)	
	>50	14(48.30)	5(17.20)	10(34.50)	29(100.0)	
Educational qualification	No literacy	29(28.40)	21 (20.60)	52(51.0)	102(100.0)	p=.004 d.f=4
	Can sign only	82(42.30)	57(29.40)	55(28.40)	194(100.0)	
	Primary pass	29(32.60)	24(27.0)	36(40.40)	89(100.0)	
Physical condition	Physically fit	128(35.60)	92(25.60)	140(38.90)	360(100.0)	p=.025 d.f=2
	Physically sick	12(48.0)	10(40.0)	3(12.0)	25(100.0)	
Marital status	Unmarried	9(90.0)	0(0.0)	1(10.0)	10(100.0)	p=.000 d.f=10
	Married	98(30.60)	87(27.20)	135(42.20)	320(100.0)	
	Widow	21(60.0)	10(28.60)	4(11.40)	35(100.0)	
	Separated	12(60.0)	5(25.0)	3(15.0)	20(100.0)	
Religion	Islam	112(47.10)	71(29.80)	55(23.10)	238(100.0)	p=.000 d.f=2
	Others	28(19.0)	31(21.10)	88(59.90)	147(100.0)	
Family head	Husband	95(32.50)	82(28.10)	115(39.40)	292(100.0)	p=.008 d.f=10
	Respondents herself	29(50.0)	14(24.10)	15(25.90)	58(100.0)	
	Son	13(56.50)	6(26.10)	4(17.40)	23(100.0)	
	Others	3(25.0)	0(0.0)	9(75.0)	12(100.0)	
Training taken	Yes	34(41.50)	12(14.60)	36(43.90)	82(100.0)	p=.023 d.f=2
	No	106(35.0)	90(29.70)	107(35.30)	303(100.0)	
Mode of engagement in work	I seek work	73(47.40)	60(39.0)	21(13.60)	154(100.0)	p=.000 d.f=4
	seek from home	64(29.10)	42(19.10)	114(51.80)	220(100.0)	
	seek from bazaar	3(27.30)	0(0.0)	8(72.70)	11(100.0)	
Go to next village for work	Yes	95(47.30)	77(38.30)	29(14.40)	201(100.0)	p=.010 d.f=2
	No	45(24.50)	25(13.60)	114(62.0)	184(100.0)	
On what basis, do you work in season	Daily wage basis	84(27.40)	84(27.40)	139(45.30)	307(100.0)	p=.000 d.f=4
	Contract basis	1(33.30)	0(0.0)	2(66.70)	3(100.0)	
	Both	55(73.30)	18(24.0)	2(2.70)	75(100.0)	
Do you bound to sell advance labor	Yes	63(75.0)	20(23.80)	1(1.20)	84(100.0)	p=.000 d.f=2
	No	77(25.60)	82(27.20)	142(47.20)	301(100.0)	
Amount of land (decimals)	No	66(48.20)	30(21.90)	41(29.90)	137(100.0)	p=.003 d.f=6
	≤10	50(31.80)	44(28.0)	63(40.10)	157(100.0)	
	11-20	19(34.50)	18(32.70)	18(32.70)	55(100.0)	
	≥20	5(13.90)	10(27.80)	21(58.30)	36(100.0)	

* d.f.= degree of freedom

Note: The numbers shown in the parentheses represent percentages

Selling Advance Labor and Wage: Among the respondents who were bound to sell their labor, 75.0% workers had earned less than 10,000 taka over the year and who were not bound to sell their labor in advance, 47.2% workers had earned more than 20,000 taka over the year. Data indicated that poorest laborers had to sell their labor in advance in a low rate in the study area or for selling advance labor, earnings of the three-fourth laborers was confined to low wage group.

Amount of Land and Wage: Association of wage with amount of land was significant in the study area. Of the respondents who have no land, 48.20% of them had earned less than 10 thousand in a year whereas 58.3% of the respondents having more than 20 decimals of land had more than 20 thousand taka in a year.

5.2.3 Association of working duration with Socio-economic Variables

Age, Educational qualification, Physical condition, Marital status, Religion, Family head, Own dwelling-house, Connection with NGOs, Training taken, Go to next village for work, Basis of Work, Selling advance labor were seen significantly associated with the working days in a year at 5 level of significance.

Age and Duration: Among the total respondents, a large number of respondents were of the age group of 21 to 30, 31 to 40 and 41 to 50 years. Respondents of the age group of ≤ 20 and > 50 found less in number in the study area. Among the respondents, who were in age group of 21-30, 31-40 and 41-50; their engagement in work to three to six months in a year was found 45.60%, 38.80% and 66.70% respectively and among the respondents whose age was more than 50, only 20.70% of them from three to six months and only 31.0% was more than six months engaged in work respectively. Data showed that respondents age group of 41-50 had participated more than six months in work than other groups in the study area.

Education and Duration: The respondents who had no education or cannot sign their names were generally engaged in agricultural work and 40.20% of them had engaged in work more than 180 days in a year because they had no other means of income except agriculture. 53.60% of the respondents who could sign only their names had engaged in work from 90 to 180 days in a year and of the respondents who passed at least primary education, 49.40% of them were engaged in work from 90 to 180 days in a year. Decreasing trends were seen with the increase of education which indicated that laborers having wage opportunities in other sectors did not get in agricultural works.

Marital Status and Duration: Among the unmarried workers 90.0% engaged in work less than 90 days where as 48.4% and 26.2% married workers engaged in work 90 to 180 days and more than 180 days a year respectively. 48.6% of widowed workers engaged in work less than 90 days and only 11.40% engaged in work more than 180 days a year. Among the separated workers 35.0% engaged in work less than 90 days and 60.0% worker engaged in work 90 to 180 days in a year. Participation of unmarried, widowed and separated in high duration group was seen insignificant in the study area.

Religious Identity and Duration: Among the respondents, 31.90% and 56.70% of Muslim laborers had engaged in work less than 90 days and 90 to 180 days respectively in the area under study. Participation of Muslim women laborers in high duration group was only 11.30% whereas participation of non Muslim in this group was 42.90%, and among the respondents who were Non Muslim 31.30% and 42.90% workers engaged in work 90 to 180 days and more than 180 days in a year. Non Muslim women labor got better opportunity to engage in work more days in a year. Participation of non Muslim women laborers in low and mid duration group was seen higher than Muslim women laborers.

Family Head and Duration: Among the respondents, 27.10% and 50.70% of husband headed family had engaged in work less than 90 days and 90 to 180 days respectively. And of the respondents, 39.70% and 34.50% of the family headed by own had engaged in work less than 90 days and 90 to 180 days. In the son headed family, 39.10% and 52.20% of women laborers had engaged in work less than 90 days and 90 to 180 days. Among the respondents whose family head was other person, 66.70% of them had engaged in work more than 180 days in a year. That's mean the respondents whose family head was other persons was bound to sell their labor more days in a year.

Dwelling House and Duration: Among the respondents who had own dwelling-house 50.50 and 28.9% workers had to work 90 to 180 days and more than 180 days respectively where as among the respondents who had no own dwelling-house 51.80% and 38.40% workers had to work less than 90 days and 90 to 180 days respectively that's mean who had own dwelling house had better opportunity to do work many days in a year than others who had no that.

NGO connection and Duration: Among the respondents who had connection with NGO's 54.80% and 22.40% workers engaged in work 90 to 180 days and more than 180 days respectively whereas among the respondents who had no connection with NGO's 38.60% and 36.70% workers engaged in work less than 90 days and 90 to 180 days respectively that's mean women laborers connected with NGOs had encouraged more to get in work.

Training and Duration: Among the respondents who took training, 24.40% and 40.20% of them had engaged in work 90 to 180 days and more than 180 days respectively whereas 53.10% and 18.80% of no training had engaged in work 90 to 180 days and more than 180 days respectively that's mean trained laborers got more opportunity to sell their labor than others.

Mobility for Work and Duration: Of the respondents who had to go another village for work, only 5.0% of them had engaged in work more than 180 days whereas among the respondents who worked in her own village 43.50% respondents engaged in work more than 180 days in a year. It means that women laborers did not get enough works from the outside villages in the study area.

Basis of Work and Duration: In daily wage basis about 57.30% workers had engaged in work 90 to 180 days and 28.70% had engaged more than 180 days in study area and who worked in both daily wage basis and contract basis, 93.30% of them had engaged in work less than 90 days that's mean in daily wage basis agricultural women labor could do work more days.

Selling labor in Advance and Duration: Among the respondents who were bound to sell their labor in advance, 77.40% of them had engaged in work less than 90 days in a year and among them who were not bound to sell their labor, 53.80% of them had been engaged in work 90 to 180 days in a year that's mean bound workers were more vulnerable in the study area, and this is why they had to sell their labor in advance for supporting their lives. They also had not got better opportunity to do work more days like non bounded workers.

Table 5.2.2 Association of Working Days with the Socio-economic and Demographic Characteristics of Agricultural Women Laborers in the Study Area

Variables	Level	Total Working Days in Seasons				P values d.f
		Low Duration Group <90	Mid Duration Group 90-180	High Duration Group >180	Total	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Age of respondents	≤20	3(33.30)	4(44.40)	2(22.20)	9(100.0)	p= .000 d.f=8
	21-30	39(37.90)	47(45.60)	17 (16.50)	103(100.0)	
	31-40	47(33.80)	54(38.80)	38(27.30)	139(100.0)	
	41-50	11(10.50)	70(66.70)	24(22.90)	105(100.0)	
	>50	14(48.30)	6(20.70)	9(31.0)	29(100.0)	
Educational qualification	Not schooling	28(27.50)	33(32.40)	41(40.20)	102(100.0)	p= .000 d.f=4
	Can sign only	67(34.50)	104(53.60)	23(11.90)	194(100.0)	
	Primary pass	19(21.30)	44(49.40)	26(29.20)	89(100.0)	
Marital status	Unmarried	9(90.0)	0(0.0)	1(10.0)	10(100.0)	p= .000 d.f=10
	Married	81(25.30)	155(48.40)	84(26.20)	320(100.0)	
	Widow	17(48.60)	14(40.0)	4(11.40)	35(100.0)	
	Separated	7(35.0)	12(60.0)	1(5.0)	20(100.0)	
Religion	Islam	76(31.90)	135(56.70)	27(11.30)	238(100.0)	p= .000 d.f=2
	others	38(25.90)	46(31.30)	63(42.90)	147(100.0)	
Family head	Husband	79(27.10)	148(50.70)	65(22.30)	292(100.0)	p= .002 d.f=10
	Respondents herself	23(39.70)	20(34.50)	15(25.90)	58(100.0)	
	Son	9(39.10)	12(52.20)	2(8.70)	23(100.0)	
	Others	3(25.0)	1(8.30)	8(66.70)	12(100.0)	
Own dwelling- house	Yes	56(20.50)	138(50.50)	79(28.90)	273(100.0)	p= .000 d.f=2
	No	58(51.80)	43(38.40)	11(9.80)	112(100.0)	
Connection with NGOs	Yes	50(22.80)	120(54.80)	49(22.40)	219(100.0)	p= .001 d.f=2
	No	64(38.60)	61(36.70)	41(24.70)	166(100.0)	
Training taken	Yes	29(35.40)	20(24.40)	33(40.20)	82(100.0)	p= .000 d.f=2
	No	85(28.10)	161(53.10)	57(18.80)	303(100.0)	
Go to next village for work	Yes	66(32.80)	125(62.20)	10(5.0)	201(100.0)	p= .000 d.f=2
	No	48(26.10)	56(30.40)	80(43.50)	184(100.0)	
On what basis, do u work in season	daily wage basis	43(14.0)	176(57.30)	88(28.70)	307(100.0)	p= .000 d.f=4
	contract basis	1(33.30)	0(0.0)	2(66.70)	3(100.0)	
	both	70(93.30)	5(6.70)	0(0.0)	75(100.0)	
Bound to sell advance labor	Yes	65(77.40)	19(22.60)	0(0.0)	84(100.0)	p= .000 d.f=2
	No	49(16.30)	162(53.80)	90(29.90)	301(100.0)	

* d.f.= degree of freedom

Note: Figures shown in the parentheses are percentages

Section 5.3

Multiple Regression Analysis

Introduction

The regression analysis is a mathematical measure of the average relationship between two or more variables in terms of the original units of the data. In regression analysis there are two types of variables. The variables whose value is influenced or is to be predicted is called dependent variable and the variable, which influences the values or, is used for prediction, is called independent variable. The regression line is the line, which gives the best estimate to the value of one variable for any specific value of the other variable. Now examining the association between two or more variables, at first it is constructed a regression line using considerable variables. Therefore to evaluate the multiple effect of explanatory variables- preparing seed bed, uprooting paddy shoots ,give water, transplanting paddy-shoots, weed cleaning, reaping paddy, threshing, sorting, rice boiling and drying ,dusting off rice, hay making for IRRI and *Aman* seasons, a model has been developed.

The regression model is:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \dots + \beta_n X_n + U \text{ -----(1)}$$

Here, total wage of one season has been considered as independent variable.

where,

X_n = Independent variables (wages of preparing seed bed, uprooting paddy shoots ,give water, transplanting paddy-shoots, weed cleaning, reaping paddy, threshing, sorting, rice boiling and drying ,dusting off rice, hay making consecutively for IRRI and *Aman* seasons)

Y = Dependent variable (total wage of one season);

β_0 = Intercept term,

β_i = the co-efficient of X_i ; $i = 1, 2, \dots, n$; U = Error term.

These three multiple regression models are fitted to data in original form available for all steps reoccurring the commend “Regression” of the statistical package SPSS for windows version 16.0 such analysis is made to assess the contribution of the influential variables and adequacy of the models with the selected variables thorough enters regression analysis. The results of multiple regression analysis are described below:

Table 5.3.1: Results of Multiple Regression Analysis of the Effects of Wage from Different Tasks on Total Wage in IRRI Season

	Unstandardized Coefficients		Standardized Coefficients		P values
	β	Std. Error	β	t	
(Constant)	124.200	192.062		0.647	0.518
Preparing seed bed	0.770	0.549	0.031	1.401	0.162
Uprooting paddy shoots	0.934	0.272	0.082	3.427	0.001
Give water	1.078	0.622	0.039	1.734	0.084
Transplanting paddy-shoots	0.947	0.093	0.261	10.242	0.000
Weed cleaning	1.076	0.093	0.329	11.621	0.000
Reaping paddy	0.980	0.072	0.392	13.622	0.000
Threshing	0.909	0.075	0.364	12.195	0.000
Sorting	0.733	0.302	0.079	2.429	0.016
Rice boiling and drying	1.416	0.264	0.135	5.372	0.000
Dusting off rice	0.523	0.298	0.053	1.755	0.080
Hay making	1.369	0.267	0.149	5.124	0.000
Adjusted R ² =0.836					

Using the SPSS Program, the estimated value of R² is found 0.84, which indicate that the 11 explanatory variables can explain 84% to the dependent variable total wage of IRRI season.

Test of hypothesis: It is tested the following hypothesis to test the significance of the fitted regression line.

$$H_0: \beta_j=0; \quad j = 1, 2, 3, \dots, 11.$$

$$H_1: H_0 \text{ is not true.}$$

Table 5.3.2: Analysis of variance (ANOVA)

ANOVA					
	Sum of Squares	d.f	Mean Square	F	Sig.
Regression	6.529E9	11	5.936E8	178.654	0.000
Residual	1.239E9	373	3322358.827		
Total	7.768E9	384			

Note: d.f = degrees of freedom

5.3.1 Results and Discussions of IRRI Season

From the above Table-5.3.2 it is found the calculated value of F is 178.65 with (11,373) degrees of freedom. At 5% level of significance with (11,373) d.f the tabulated value of F is 1.81, which indicates that our calculated value is greater than the tabulated value. So, we can reject our null hypothesis. Therefore the test is significant. On the other hand from the above table it is observed that the significance value in regression is 0.000, which is less than 0.05. So, it can be said that there is significant association between total wage of IRRI season and the predicted variables (preparing seed bed, uprooting paddy shoots, give water, transplanting paddy-shoots, weed cleaning, reaping paddy, threshing, sorting, rice boiling and drying, dusting off rice, hay making).

Table 5.3.3: Results of Multiple Regression Analysis of the Effects of Wage from Different Tasks on Total Wage in *Aman* Season

	Unstandardized Coefficients		Standardized Coefficients		P values
	β	Std. Error	β	t	
(Constant)	70.544	110.002		0.641	0.522
Preparing seed bed	1.124	0.316	0.045	3.554	0.000
Uprooting paddy shoots	0.809	0.136	0.091	5.936	0.000
Give water	1.172	0.172	0.096	6.830	0.000
Transplanting paddy-shoots	1.004	0.055	0.321	18.346	0.000
Weed cleaning	0.938	0.062	0.296	15.224	0.000
Reaping paddy	0.994	0.039	0.423	25.292	0.000
Threshing	0.949	0.041	0.402	23.223	0.000
Sorting	1.367	0.163	0.138	8.388	0.000
Rice boiling and drying	0.940	0.127	0.103	7.392	0.000
Dusting off rice	0.849	0.155	0.074	5.472	0.000
Hay making	0.985	0.132	0.100	7.477	0.000
Adjusted R ² =0.95					

Using the SPSS Program, the estimated value of R² is found 0.95, which indicate that the 11(eleven) explanatory variables can explain 95% to the dependent variable total wage of IRRI season.

Test of hypothesis:

It is tested the following hypothesis to test the significance of the fitted regression line.

$$H_0: \beta_j = 0; \quad j = 1, 2, 3, \dots, 11.$$

H_1 : H_0 is not true.

Table 5.3.4: Analysis of variance (ANOVA)

ANOVA					
	Sum of Squares	d.f	Mean Square	F	Sig.
Regression	6.656E9	11	6.051E8	608.965	0.000
Residual	3.706E8	373	993681.801		
Total	7.027E9	384			

Note: d.f = degrees of freedom

5.3.2 Results and Discussions of *Aman* Season

From the above Table-5.3.4, it is found the calculated value of F is 608.97 with (11,373) degrees of freedom. At 5% level of significance with (11,373) d.f the tabulated value of F is 1.81, which indicates that our calculated value is greater than the tabulated value. So, we may reject our null hypothesis. Therefore the regression line is significant. On the other hand from the above table we observe that the significance value in regression is 0.000, which is less than 0.05. So, we may say that there is significant association between total wage of IRRI season and the predicted variables (preparing seed bed, uprooting paddy shoots, give water, transplanting paddy-shoots, weed cleaning, reaping paddy, threshing, sorting, rice boiling and drying, dusting off rice, hay making).

Table 5.3.5: Results of Multiple Regression Analysis of the Effects of Wage from Different Tasks on Total Wage in Winter Season

	Unstandardized Coefficients		Standardized Coefficients		P values
	β	Std. Error	β	t	
(Constant)	46.527	31.977		1.455	0.146
Mustard related tasks	0.973	0.077	0.105	12.575	0.000
Potato related tasks	0.956	0.044	0.200	21.812	0.000
Parable/bitter guard related tasks	0.952	0.066	0.158	14.363	0.000
Green chillis related tasks	0.969	0.035	0.237	27.781	0.000
Sweet potato related tasks	0.987	0.082	0.098	12.022	0.000
Ginger/garlic/onion related tasks	1.017	0.053	0.248	19.208	0.000
Corn related tasks	1.010	0.040	0.288	25.487	0.000
Lady's finger related tasks	0.978	0.044	0.212	22.259	0.000
Adjusted R ² =0.98					

Using the SPSS Program, the estimated value of R² is found 0.98, which indicate that the 8 (eight) explanatory variables can explain 98% to the dependent variable total wage of IRRI season.

Test of hypothesis:

It is tested the following hypothesis to test the significance of the fitted regression line.

$$H_0: \beta_j = 0; \quad j = 1, 2, 3, \dots, 11.$$

H_1 : H_0 is not true.

Table 5.3.6: Analysis of variance (ANOVA)

ANOVA					
	Sum of Squares	d.f	Mean Square	F	Sig.
Regression	2.185E9	8	2.732E8	2071.130	0.000
Residual	4.959E7	376	131899.561		
Total	2.235E9	384			

Note: d.f = degrees of freedom

5.3.3 Results and Discussions of Winter Season

From the above Table-5.3.6 it is found the calculated value of F is 2071.13 with (8,376) degrees of freedom. At 5% level of significance with (8,376) d.f the tabulated value of F is 1.96, which indicates that our calculated value is greater than the tabulated value. So,

we can reject our null hypothesis. Therefore the regression line is significant. On the other hand from the above table we observe that the significance value in regression is 0.000, which is less than 0.05. So, we may say that there is significant association between total wage of winter season and the predicted variables (Mustard related tasks, Potato related tasks, Parable/bitter guard, Green chillis, Sweet potato , Ginger/garlic/onion related tasks, Corn related tasks, Lady's finger).

Section 5.4

Methods of Measuring Women's Empowerment

5.4.1 Introduction

Women's empowerment has during the last decade become a panacea for Third world development (Tareque *et. al.*, 2007). The concept of women's empowerment implicitly assumes that in all societies, men control women-or, to be more precise, men control at least some of the women of their social class, particularly those in their households and families (Mason & Smith, 2003). In this view, men are a 'class' in the (two class) gender stratification system, a system that is governed by shared norms and values, i.e., it has cultural as well as relation and material component (Smith, 1989). It has also been used to represent a wide range of concepts and to describe a proliferation of outcomes. The term has been used more to advocate for certain types of policies and intervention strategies than to analyze them, as demonstrated by a number of documents from the United Nations (UNDAW, 2000; UNICEF, 1999), the association for women in development (Everett, 1991), the declaration made by the Microcredit summit (RESULTS,1997), DFID (2000), and other organization. Feminist activities writings often promote empowerment of the individuals and organizations of women (Sen and Grown, 1987;Jahan, 1995; Kumar, 1993) but vary in the extent to which they conceptualize or discuss how to identify it.

In Bangladesh, like the other countries of the third world, it has also been a matter of discourse over the past decades at all levels of the society and state. Government through its different organizations, different NGOs, voluntary organizations, international development partners and so on are putting emphasis on the empowerment issue of the women of the country. They are implementing number of programs for this purpose.

An effort has been made in this section to develop a mechanism for measuring the level of empowerment indices for agricultural women laborer's in the context of Bangladesh. In this regard, initially a set of comprehensive indicators was considered and then a composite index for measuring the level of women's empowerment was developed.

In order to develop indicators of agricultural women laborer's empowerment, different journals, book, reports etc. were consulted. Under each indicator, different issues were considered. For each of the issues, an indicator was quantified on the basis of the nature of the responses. The empowerment index has been developed into two stages. Initially, empowerment index of an indicator consisting of different issues is constructed. Then, the overall empowerment index consisting of different indicators is developed.

5.4.2 Indicators of Agricultural Women Laborer's Empowerment

Precision of measurement of women laborer's empowerment depends on the selection of appropriate indicators. In this section, multi-dimensional natures of women laborer status have been considered to formulate suitable indicators. In this regard, three indicators namely mobility, decision making and political and legal awareness have been taken based on their status and roles. It is to be noted that in few cases, to make the all indicators more comprehensive, same issue but in different dimension have also been considered under the indicators. Detailed of the indicators are described as follows:

5.4.3 Mobility Indicator

The mobility of women laborer was assessed through asking whether the following works were permitted to perform alone or jointly or not at all:

Table 5.4.1 Description of the Variables and their Dimension under Mobility Indicator

Sl. No.	Name of the Variables	Performances	Measurement Scale
1	Visiting market for shopping	Individually=2 Jointly=1 Not at all=0	1,2=1 & 0=0
2	Visiting market for selling	Individually=2 Jointly=1 Not at all=0	1,2=1 & 0=0
3	Visit healthcare center	Individually=2 Jointly=1 Not at all=0	1,2=1 & 0=0
4	Going to a movie	Individually=2 Jointly=1 Not at all=0	1,2=1 & 0=0
5	Visiting outside the village	Individually=2 Jointly=1 Not at all=0	1,2=1 & 0=0
6	Visiting cooperative society or NGO's	Individually=2 Jointly=1 Not at all=0	1,2=1 & 0=0
7	Moving within the village independently	Individually=2 Jointly=1 Not at all=0	1,2=1 & 0=0
8	Visiting friends and relatives	Individually=2 Jointly=1 Not at all=0	1,2=1 & 0=0
9	Visiting <i>Upazila</i> headquarters /bank	Individually=2 Jointly=1 Not at all=0	1,2=1 & 0=0
10	Moving anywhere looking for work	Individually=2 Jointly=1 Not at all=0	1,2=1 & 0=0

The responses were given score 2 for each of the above works if a women performed alone, score 1 if she performed jointly and score 0 if she did not perform at all.

5.4.4 Decision Making Power Indicator

A women laborer's decision making power within her household was measured by the extent of her role in making decisions about the following issues:

Table 5.4.2 Description of the Variables and their Dimension under Decision Making Indicator

Sl. No.	Name of the Variables	Responses and Measurement Scale
1	Enrolment of children to school	Individually=2 Jointly=1 Not at all=0
2	Going to doctor for her children	Individually=2 Jointly=1 Not at all=0
3	Involvement with any cooperative or NGO's	Individually=2 Jointly=1 Not at all=0
4	Visit to father's house or other relative's house	Individually=2 Jointly=1 Not at all=0
5	Purchase things for family	Individually=2 Jointly=1 Not at all=0
6	Purchase or sale of land	Individually=2 Jointly=1 Not at all=0
7	Adoption of family planning method	Individually=2 Jointly=1 Not at all=0
8	Spending her own money	Individually=2 Jointly=1 Not at all=0
9	Spending her husband's money	Individually=2 Jointly=1 Not at all=0
10	Marriage of their sons and daughters	Individually=2 Jointly=1 Not at all=0
11	When to have children	Individually=2 Jointly=1 Not at all=0
12	Number of children to have	Individually=2 Jointly=1 Not at all=0
13	Offering presentation to relatives on a particular occasion	Individually=2 Jointly=1 Not at all=0
14	Borrowing or lending money	Individually=2 Jointly=1 Not at all=0
15	House repairing	Individually=2 Jointly=1 Not at all=0
16	When and where she work	Individually=2 Jointly=1 Not at all=0

In each case, the woman laborer was asked whether she could make these decisions alone or jointly with her husband/other family members or not at all. The responses were given score 2 for each of the above issues if she could decide alone, score 1 if she could decide jointly and score 0 if she could not decide at all.

5.4.5 Political and Legal Awareness

The political and legal awareness of women were assessed by asking whether they knew about or able to perform the following activities:

Table 5.4.3 Description of the Variables and their Dimension under Political and Legal Awareness Indicator

Sl. No.	Name of the Variables	Responses and Measurement Scale
1	Name of the chairmen of her own Union <i>Parishad</i>	Yes = 1 No=0
2	Name of the ward member of her area	Yes = 1 No=0
3	Name of the prime minister	Yes = 1 No=0
4	Name of the member of the parliament of her area	Yes = 1 No=0
5	Casting of votes independently for election	Yes = 1 No=0
6	Campaign for a political candidate	Yes = 1 No=0
7	Significance registering marriage	Yes = 1 No=0
8	Permission required for second marriage	Yes = 1 No=0
9	Law of inheritance	Yes = 1 No=0
10	Bargaining about wage fixation	Yes = 1 No=0
11	Protesting against unfair price	Yes = 1 No=0
13	Protesting against violence in family	Yes = 1 No=0
14	Protesting against violence in society	Yes = 1 No=0
15	Ask for justice	Yes = 1 No=0
16	Protesting for herself	Yes = 1 No=0
17	Protesting for others	Yes = 1 No=0

Score 1 was given for each of the positive response on the above mentioned aspects; while 0 for the negative response.

5.4.6 Women Laborer's Empowerment Index

In this section, an attempt has been made to develop empowerment index, considering all the indicators and issues with a view to measuring the level of women's empowerment. The uniqueness of this empowerment index is that it is a scale free and expressed in percentage. This index extends its application in comparing the level of overall women laborer's empowerment at different times and places. It has been developed into two stages. At first stages, empowerment index of a woman for a single indicator consisting of different issues was developed and secondly, a composite empowerment index for a woman consisting of different indicators was constructed.

5.4.7 Empowerment Index of Women Laborers for Single Indicator of Different Issues with Equal Weights

First stage: Empowerment index of women laborers for single indicator of different issues has been constructed. And then empowerment index of women laborers for an indicator has been calculated. For measuring empowerment of the rural women, Biswas (2004) used the following formula:

$$\text{Empowerment Index } EI_{ij} = \frac{(X_1 + X_2 + \dots + X_n)}{M} \times 100$$

$$= \frac{\sum_{j=1}^n X_j}{M} \times 100$$

where,

EI_{ij} = Empowerment index of i -th women laborer for j th indicator,

X_j = Value of individual issues of j -th indicator,

M = Maximum possible score or outcome,

n = Number of individual issues of an indicator.

Second stage: The composite empowerment index of a woman laborer.

The composite empowerment index consisting of different indicators with equal weight can be expressed as follows:

$$EI_i = \frac{EI_{i1} + EI_{i2} + \dots + EI_{iN}}{N}$$

$$= \frac{\sum_{j=1}^N EI_{ij}}{N}$$

where,

EI_i = Composite empowerment index of i -th women

N = Number of indicators considered in the composite index

5.4.8 Level of Women Laborer's Empowerment Index

5.4.8.1 Women Laborer's Mobility

With a view to assess the level of women laborer's empowerment through their mobility, the respondents were asked whether they were able to do the following tasks or not and how. For example, visiting market for buying or selling, visiting health centre for checking health condition, going to cinema hall for watching movie and going to NGO's for getting service, moving outside and within the village for meeting necessities, visiting friends and relatives for exchanging greetings, visiting *Upazila* headquarter and bank for loan or any other necessities. The detailed responses of the respondents are given in Table 5.4.1. It has been found that the majority of the women laborer's mobility is limited within their own village. Except own village, relatively better mobility of women laborer is found for looking for work, visiting outside of the village, visiting relatives and visiting healthcare centers. I also found that about 80.0% respondents did not visit any market for selling and 60.0% for buying, 47.0% respondent did not go to cinema hall for watching movies. The average mobility index of the respondents is about 50.0%.

Table 5.4.4 Distribution of Respondents According to Mobility Issues and Indices in the Study Area

Mobility Issues	Individually	Jointly	Not at all
Move within village	83.10	14.00	2.90
Look for work	51.20	20.30	28.60
Go outside of village	47.30	44.90	7.80
Visit relatives	26.00	71.40	2.60
Go to doctor	23.10	69.10	7.80
Buy anything in market	22.10	15.30	62.60
Go to NGOs	17.70	49.60	32.70
Go to union Parishad	17.10	49.10	33.80
Sell anything in market	10.10	9.40	80.50
Go to cinema	3.40	49.40	47.30
Average mobility index	49.73		

5.4.8.2 Decision Making Issues

Decision making power is one of the most important indicators of women laborer's empowerment. In traditional society, women laborers have very limited roles in decision making process. The male person of the household takes most of the decisions. In order to assess the decision making power of the respondents sixteen issues regarding household affairs were asked and the information is presented in the following table (table 5.4.5) to elucidate the salient features. For qualification of decision making power average decision making index have been estimated. In the study area, majority of the women laborers had taken decision jointly with their husbands or with other members of the households. Only in case of their selling labor, spending her own money admitting children into school, visiting relatives house, women laborers play important roles in the decision making process. A large number of women laborers have no role at all in decision making process regarding buying or selling land, involving with NGOs/*samities*, admitting children into schools and spending husband's money. In decision making issues, a large number of laborers have important roles in decision making jointly with husbands or other persons of their families. Especially, in offering presentation, making marriage of their sons and daughters, repairing house, borrowing and lending money,

visiting relative's house, spending husband's money, their individual participation was hardly seen. The average decision making index of the respondents is about 50 which is same as mobility index.

Table 5.4.5 Distribution of Respondents According to Decision Making Issues and Indices in the Study Area

Decision Making Issues	Individually	Jointly	Not at all
Offering presentation	10.10	82.60	7.30
Marriage of their sons and daughter	5.50	82.00	12.50
House repairing	13.80	77.70	8.60
Borrowing/lending money	13.00	70.60	16.40
Visit relatives	27.50	70.40	2.10
Spend husband money	4.90	67.50	27.50
When to have children	13.80	67.00	19.20
Number of children to have	12.50	64.40	23.10
Adopt family planning	14.30	62.60	23.10
Go to doctor	23.60	62.30	14.00
Buy essentials for family	20.00	53.50	26.50
Involvement with NGOs/samities	14.00	53.50	32.50
Spend own money	47.50	46.00	6.50
When and where to selling labor	54.80	42.10	3.10
Admit children to school	30.40	35.60	34.00
Land buy or sell	4.70	28.30	67.00
Average decision making index	49.59		

5.4.8.3 Political and Legal Awareness

Empowerment starts from better exposures and awareness. With the increase of women laborers' awareness, realizations about their rights are also increased and they try to establish their rights, which lead them to increase their empowerment status. For increasing awareness, access to information is an important factor. For assessing the political and legal awareness, the respondents were asked whether they knew the name of public representatives of different levels, significance of registering marriage, law of inheritance, whether permission is required for second marriage, whether they were aware of drug addiction and sexual violence, and whether they were able to caste vote in the last Union Parishad election without any interference.

The study results reveal that 13.0% respondents did not know the name of prime-minister of Bangladesh. More than one third of the total women laborers could not tell the name of the member of the Parliament of their area. Among the respondents nine of ten respondents did not protest against unfair labor price to the owners and did not bargaining about wage fixation. In the study area, about 76.40% respondents did not ask for justice for any violation. Among the respondent 60.30% women laborer did not know the law of inheritance, 26.80% did not know the significance of marriage registration, and 28.30% did not know that permission is required to second marriage, 30.90% could not protest herself from social violence and 39.20% could not protest herself from family violence. The average Political and Legal Awareness index of the respondents is about 58.0% which is better than other two indexes.

Table 5.4.6 Distribution of Respondents According to Political and Legal Awareness Issues and Indices in the Study Area

Political Awareness Issues	Yes	No
Know name of ward member	97.90	2.10
Know name of UP chairman	93.00	7.00
Know name of prime-minister	87.00	13.00
Casting of votes independently for election	82.90	17.10
Significance of registering marriage	73.20	26.80
Permission required to second marriage	71.70	28.30
Protesting against violence in society	69.10	30.90
Protesting for others	63.40	36.60
Name of Parliament member of area	63.10	36.90
Protesting against violence in family	60.80	39.20
Protesting for herself	49.40	50.60
Law of inheritance	39.70	60.30
Campaign for a political candidate	30.60	69.40
Ask for justice	23.60	76.40
Bargaining about wage fixation	9.10	90.90
Protesting against unfair price	8.10	91.90
Average political awareness index	57.66	

Note: UP denotes Upazila Parishad

5.4.8.4 Women Empowerment and Socio-economic Variables

Among the different demographic variables age, educational qualification, religion type of family, connection with NGO's and total seasonal income are significantly associated with women empowerment index at 5% level of significance. Table 5.4.7 depicts that the women laborers who were in age group (≤ 20 years) and age group (> 50 years) are less empowered than the middle aged women laborers. Though women laborers of such age group earn money by selling labor but in decision making and mobility they were dependent on other persons because of lower and higher ages. The women laborers of age group 31-40 years and 41-50 years were more empowered than other age groups.

Education is one of the important factors for women laborer's empowerment. It enables women laborer to respond to opportunities, challenge their traditional roles and raise their voice. The results reveal that agricultural women laborer were not well educated. Among them who could sign only and who passed primary level education were more empowered than the respondents who did not take any formal or informal education.

In rural areas Bangladesh, women's socio-cultural practices, norms, and values are primarily determined by their religions. In our study area there were two types of religious group i.e., Muslim and non-Muslim. The contingency analysis reveals that religion is significantly associated with women laborer's empowerment index. It is found that 75.60% women laborers are more empowered among the Muslims whereas it is 38.8% only for the non Muslims.

Type of family (nuclear and joint) are significantly associated with women laborer empowerment index. In a joint family, women generally have a little chance of having mobility and decision making power because of their husbands or fathers in-law or mothers in-law or other persons. Table 8.4.4 depicts that the women laborers of nuclear family are more empowered than that of joint family.

Connection with NGOs is an important factor of women's empowerment because it creates ability and confidence among the women. It is also an important indicator of women's empowerment index of the study area. Results of the study show that women laborers connected with NGO's are more empowered than the laborers having no connection with NGO's.

The total seasonal income of women laborers over the year is significantly associated with women empowerment index. Findings show that with the increase of total seasonal income the empowerment index of the respondents has been increased. It is seen that about 87.50% of the respondents in the very low income group were remaining in the less empowerment category whereas only 12.50% were in high empowerment categories. On the other hand, 68.60% of the respondents were in high income category whereas it was only 31.40% in the low empowerment group.

Table 5.4.7 Contingency Analysis of Women Empowerment Index with Diffident Socio-economic Variables in the Study Area

Characteristics	Level	Women Empowerment Index (WEI)			p-value, d.f
		<50.00	≥50.00	Total	
Age of respondents	≤20	7(77.80)	2(22.20)	9(100.00)	p=.000 d.f=4
	21-30	48(46.60)	55(53.40)	103(100.0)	
	31-40	35(25.20)	104(74.80)	139(100.0)	
	41-50	37(35.20)	68(64.80)	105(100.0)	
	50+	21(72.40)	8(27.60)	29(100.0)	
Educational qualification	Not schooling	60(58.80)	42(41.20)	102(100.0)	p=.000 d.f=2
	Can sign only	59(30.40)	135(69.60)	194(100.0)	
	Primary pass	29(32.60)	60(67.40)	89(100.0)	
Religion	Islam	58(24.40)	180(75.60)	238(100.0)	p=.000 d.f=1
	Others	90(61.20)	57(38.80)	147(100.0)	
Type of family	Nuclear	104(35.10)	192(64.90)	296(100.0)	p=.015 d.f=1
	Joint	44(49.40)	45(50.60)	89(100.0)	
Connection with NGOs	Yes	73(33.30)	146(66.70)	219(100.0)	p=.018 d.f=1
	No	75(45.20)	91(54.80)	166(100.0)	
Total seasonal income (IRRI+ Amon +Winter)	<5,000	21(87.50)	3(12.50)	24(100.0)	p=.000 d.f=3
	5,000-10,000	19(16.10)	99(83.90)	118(100.0)	
	10,001-15,000	27(31.40)	59(68.60)	86(100.0)	
	>15,000	58(36.90)	99(63.10)	157(100.0)	

Note: Figures shown in the parentheses are percentages.

Note: NGO denotes Non-Government Organizations.

CHAPTER VI

SUMMARY AND CONCLUSION

6.1 Introduction

This chapter presents the summary, conclusion and recommendations of the study. At the beginning of this chapter, summary of the results of the study has been discussed and the later part, a conclusion has been drawn and finally recommendations for policy implications and future research have been presented.

6.2 Summary

Agriculture is an important sector of the economy of Bangladesh and it is one of the main driving factors of economic growth. Economic growth of a country depends on the proper utilization of its resources. In a developing country like Bangladesh, woman is a part of human resources who can play a vital role in nation's development. Of the total women population, rural poor women are a mentionable section those engaged in agriculture as laborers.

6.2.1 Background Characteristics of Women Laborers

Personal Characteristics: The study reveals that of the respondents, there are five age groups such as, less than or equal 20 years, 21 to 30 years, 31 to 40 years, 41 to 50 years and 50 years and over. Majority of the respondents (about 36.0%) belongs to the age group 31 to 40 years. Mean age of the respondents was about 38 years which indicated that agricultural work requires more strength than the other works. In this study, it was observed that a significant number of respondents (about 27.0%) were illiterate, about half of them (about 50.0%) could sign only their names and only about 23 respondents had primary school education. Most women laborers (94.0%) were physically fit to

perform agricultural activities and about only 6 of them were sick. Among the respondents, a significant number (63.0%) were married. Women laborer as widowed and separated by any cause were about 9.0% and 5.0% respectively and unmarried was 3.0%. Based on the religious identity of the respondents, about 62 were Muslim and 38 respondents were non Muslim in the study area.

Familial Characteristics: Most of the respondents (75.0%) belong to nuclear family where as only 23.0% belong to joint family. About 58.0% of them had at least one or two dependent children and about 19.0% had above two dependent children in the family. Of the head of families, near about 76.0% family were husband headed, about 15.0% were respondent own headed (female headed), and about 29.0% had no own dwelling house of their own. On an average of the study population 41.0% respondents' family had only 10 or below 10 decimal of land and significant number of (36) respondents were landless. Of the family income, 60.0% family earned Tk. 2,001-4,000 per month. And they had to borrow money for maintaining of their families. Among the respondents of the study, about 30.0% respondent had to borrow within Tk. 1001 to 5000 and 14 respondent had to borrow Tk.5001 to 10000 in previous year. On an average of their borrowing money they had to take Tk.3159.

Involvement with NGOs: Regarding the connection with NGOs, 57.0% agriculture women laborers were related to different NGO's and 43 were not. Of the 57.0% respondents (related to different NGO's), only 21.0% respondents had taken part in different training activities where a large number of participants (about 79.0%) had no training. Among the trainees, about 40 had taken training on Goat/cow rearing and about 34.0% in farming and 17.0% in vegetables cultivation. But the duration of training was very short in the study area.

Causes of Participation: About 91.0% respondents opined that poverty was one of the causes for working as agricultural laborer and it was 58.0% for children education besides paying debt, greater number of children, working for pleasure, husband pressure etc were the main causes for working as a agricultural laborer.

Contribution to Different Seasons: In the study area, there were three agricultural seasons namely IRRI or Boro, Amon and winter season. Type of work in IRRI and Amon season was same but it was different from winter season. Among the total 385 respondents, 378 and 377 respondents participated in IRRI and Amon seasonal works. In IRRI and Amon season, eleven works had been found namely Hay making, Dusting off rice, Boiling rice, Sorting rice, Threshing paddy, Reaping paddy, Weed cleaning, Seed plantation, Taking water, Uprooting seeds and Preparing seed bed. The participation of women laborer in Seed plantation, Weed cleaning, Reaping paddy, Threshing paddy, Boiling rice and Dusting off rice was more than 50 in both IRRI and Amon seasons. All of these works are treated as field related agricultural works those are performed by both of women and men.

Among the total (385) respondents, about 81.0% respondents had participated in the works of winter season. Among the participants near about 28.0% workers participated in Mustard related, about 92.0% respondents had taken part in three steps of potato related works, 54.0% in parable/bitter gourd related works, 44.0% in green chilies related works, 33.0% in ginger/garlic/onion related works and 57.0% had participated in corn related works in the study area. But women laborers' participation in sweet potato related works was not found high (it was only 9.0%). Of the participation in different works of winter season, potato related work; parable/bitter gourd related work and corn related work were found very high in percentage.

Study result shows that duration of working days in different season varied greatly in the study area. In the aggregation of their working days in each season of a year, less than 30 days employment was for 26.0% in IRRI season, 28.0% in Amon and 42.0% in winter seasons and employment more than three months was only for 16.0% respondents in IRRI season and 19.0% in Amon season respectively. But it was totally zero for winter season. No participants get more than three month in winter season in the study area.

Regarding seasonal wages of the respondents, women laborers were classified into four groups namely very low income group (less than Tk. 5,000), low income group (Tk.5, 000-10,000), medium income group (Tk.10, 001-15000), high income group (more than Tk. 15,000). The findings show that a large number of participants were of very low income group which were 45.0% in IRRI season, 46.0% in *Aman* season and 82.0% in winter season respectively. In low income group, it was 24.0% in IRRI season, 21.0% in Amon season and 18.0% in winter season. The percentage of participants of medium and high level income group was very low in IRRI and Amon season and it is zero for winter season. It has been found a wide income variation in the three seasons in the target area.

In our study, it was also seen that average per head income is Tk. 7215 in IRRI season, Tk. 7065 in Amon season and Tk. 2574 in winter season that's mean per head average income in winter season was about one third of the IRRI or *Aman* season. Per day average income was Tk. 134 in IRRI season, Tk. 136 in Amon season and Tk. 96 in winter season. And income deviation in IRRI season (Tk.57) and in winter season (Tk.55) is almost same but it was low (Tk. 44) in Amon season.

Obstacles to Work: Based on the opinion of the respondents, about 98 women laborers faced (at least one type of) obstacle to their work. A few of respondents (1.6%) opined that they faced no obstacles to their working in agriculture.

It was also found that about 92 women laborer faced lack of toilet facilities 44.0% felt uncomfortable in working with male and 41.0% felt uncomfortable in sun and rain. Respondents opined that 69.0% had no ability to do all works, 50.0% had no expertise in all works, and 72.0% women laborer was not called for all works. Among the other obstacles, lack of prestige and absence of breast feeding facilities were the most important which were 33.0% and 23.0% respectively. Far distance of work field place field, uncomfortable road, no praying facilities were also some important obstacles for women laborers.

6.2.2 Association of Income with Some Background Characteristics

Age, educational qualification, physical condition, marital status, religion, family head, training taken, engaged in work, go to next village for work, work on basis, bound or not to sell advance labor, amount of land of respondents were significantly associated with the total income over the year at 5% level of significance.

Age, educational qualification, physical condition, marital status, religion, family head, own dwelling-house, connection with NGOs, training taken, go to next village for work, basis of work, selling of labor in advance were statistically significant with the association of total working days over the year at 5% level of significance.

6.2.3 Multiple Regression Analysis

Similarly in multiple regression analysis, there are seen a significant association between total wage of IRRI and *Aman* season and the predicted variables (preparing seed bed, uprooting paddy shoots ,give water, transplanting paddy-shoots, weed cleaning, reaping paddy, threshing, sorting, rice boiling and drying ,dusting off rice, hay making) at 5% level of significance. In addition, in winter season, there are also seen significant association between total wage of winter season and the predicted variables (Mustard related tasks, Potato related tasks, Parable/bitter guard, Green chillis, Sweet potato , Ginger/garlic/onion related tasks, Corn related tasks, Lady's finger) at 5% level of significance.

6.2.4 Women Empowerment and Demographic Variables

Among the different demographic variables age, educational qualification, religion type of family, connection with NGO's and total seasonal income were significantly associated with women empowerment index at 5% level of significance.

The results revealed that agricultural women laborer were not well educated but among them who could sign only and who passed primary level education were more empowered than them who did not take any formal education.

It was found that about 76.0% of the Muslims were more empowered on the contrary; it was 39.0% for non Muslims. In percentage Muslim women laborers are more empowered than non Muslim women laborers. On the basis of family structure, respondents from nuclear family were more empowered than the joint family.

It also found that the women laborers who were connected with NGO's were more empowered than those were not connected to NGO's.

From contingency analysis it can be observed that with the increase of total seasonal income the empowerment index is also increased.

6.3 Conclusions

Women are good partners for the socio-economic development of the country in general and the family in particular. They can contribute significantly to the socio-economic uplifting of the family if proper environment with facilities can be ensured. Study shows that participation of women laborers are encouraging in agriculture especially in pre and post harvesting operations in the study area. Besides, their participation in vegetable field is noteworthy as because of giving more time with little wages. Women laborers are the poorest sections of society and they are very vulnerable to life leading. They are forced by

hard realities to participate in wage earnings activities breaking away their traditional roles of housewives simply because of supporting their daily breads. The result of this study highlights that their income through selling their labor is substantial to their family earnings. Earnings additional money in the family has them to make their daily lives a little bit better than that of the others. But for some social values and socio-economic bottlenecks, they cannot contribute to nation's development. It is hoped that this study will play a good role in doing away with all the barriers and keep some effective initiatives for the welfare of the women agriculture laborers of Bangladesh.

6.4 Recommendations

On the basis of the findings of the study, some recommendations were suggested which have been divided into two groups e.g. recommendations for the policy implications and recommendations for further studies. These are stated below:

6.4.1 Recommendation for Policy Implications

In order to enhance smooth participation and improve the overall economic conditions of the women laborers in agriculture, some specific points are mentioned which are as follows-

- a) The potential of women laborers must be tapped for the socio-economic improvement of the families and development of the nation as a whole. They are undoubtedly a striking force for rural agriculture economy. They should be organized and be aware that they have equal right of participation in all sorts of income generating activities. The state will ensure all kinds of prospects and pave the ways of prosperity for them.
- b) Skill enhancing training program with available credit facilities for them should be taken widely by the different NGOs and the states so that they can prove their

capabilities and put an encouraging role in agricultural activities of the rural areas.

It should be done in such a way that women laborers feel honored and they can acquire confidence through their daily activities and can fight against all sorts of injustice including their wage discrimination.

- c) Recognition of women agricultural laborers as an occupational group is immensely needed in this purpose. Government should take necessary steps in giving their recognition through devising option in all census questionnaires so that information of their identities are to be properly collected during the collection of data.
- d) For ensuring self worth and dignity of the women agricultural laborers, vocational and technical income generating programs have to be introduced largely in rural areas so that women laborers adopts the means of additional income in slack season and can contribute to nations' development.
- e) A law regarding the welfare of the agriculture laborers or women agriculture laborers of the country should be enacted by the government of Bangladesh. This law will help all types of agriculture laborers especially women laborers as a ground of logistic support for their welfare.
- f) In Women Development Policy 2011, separate work plans for women laborers have to be taken with a view that special emphasize is to be put in this purpose and an individual cell can be formed for the welfare of the women agricultural laborers of Bangladesh.

6.4.2 Recommendations for Future Study

Some recommendations have been made for the future research on the basis of scope and limitations of the present study. Researcher thinks that this study has opened up a number of new windows for separate research in the future:

- a) This study has been carried out focusing on the Dinajpur district of Bangladesh. The findings of the study need to be validated by carrying out similar research in other parts of the country.
- b) Women laborer in agriculture was the main focus of the study. It had not considered all agricultural laborers in its population irrespective of gender. So, this study cannot tell the proportion of participation of women in agriculture in comparing with male. If such a study is carried out on agriculture laborers, comparative scenarios of women participation in agriculture will be come out.
- c) Considering the whole Bangladesh as area of study, a comprehensive study can also be taken in this regard. Such type of study will depict the overall scenery of women's participation in agriculture of Bangladesh.
- d) Wage earnings scenery of rural women through agricultural activities was another important issue of this study. It has not found out the livelihood patterns of rural poor women of Bangladesh. If a study is taken regarding this, a total picture of rural poor women will come to light.
- e) Regarding the empowerment of the respondents of the study, a general state of empowerment has been expressed. But no comparison of empowerment of the respondents with non wage earners has been shown. So empowerment of wage earners and non wage earners can also be studied.

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APPENDIX I

Glossary

- Aman* : Autumn planting Paddy depending on natural rains.
- Aus* : Spring planting Paddy depending on natural rains.
- Bangla calendar* : It is also known as 'Bangla Sal', was promulgated by the Mughal emperor Akbar in 1584 AD. The new calendar was initially known as Tarikh-e-Elahi and was introduced on 10 or 11 March, 1584. Though the new calendar was promulgated in the twenty-ninth year of Akbar's reign, it dates from his ascension to the throne on 5 November, 1556.
- Barsa* : It is called rainy season traditionally spreads over Asadh and Shraban in Bangla calendar months which are in mid-June to mid-August in the English calendar. The rainy season may start from the end of Baishakh and last up to the beginning of Kartik (mid-May to late-October).
- Basanta* : It is the last of the seasons occurs between winter and summer, spreads over the Bangla months Phalgun and Chaitra. In the English calendar it is mid-February to mid-April. The spring season is very brief in Bangladesh and practically prevails during March only.
- Boro* : Summer planting High Yielding Variety (HYV) paddy by underground irrigation system.
- Customary Law* : Prevailing practices in the society in relation to giving shares of agricultural resources such as land, credit, wages etc. to women by which women are deprived of their rights.

- Disguised employment* : It is an employment where more laborers are employed than the need. It is simply because of having no enough working opportunities for all. In this kind of employment, all employed persons share the fixed wages which are usually less than general wages.
- Employed* : Employed population is a person who was either working one or more hour hours for pay or profit or working without pay in a family farm or enterprise or organization during the reference period or found not working but had a job or business from which he/she was temporarily absent during the reference period.
- Grisma* : It is called summer comprised of Baishakh and Jyaistha, the two Bangla calendar months, when days are hot and dry. It is mid-April to mid-June in the English calendar.
- Hemanta* : It is called late autumn comprised of mid-October to mid-December according to English calendar. It is the fourth season, covers Kartik and Agrahayan in the Bangle calendar. Actually it is a transitional phase between autumn and winter.
- Kacha* : made of raw materials.
- Kharif* : Crops grown during the season that starts from April and extends up to November, when the moisture supply from rainfall plus soil storage is enough to support rainfed crops. In other words, Kharif crops are grown in the spring or summer season and harvested in late summer or in early winter. The season is conveniently divided into Kharif I and Kharif II. Kharif I, often called Pre-kharif, actually starts from the last week of March and ends in May. The Kharif season is characterized by high temperature, rainfall and humidity.
- Labor force* : As persons aged 15 years and over, who are either employed or unemployed during the reference period of survey. It excludes disabled and retired persons, income recipients, full time housewives and students, beggars and other persons who is not paid or get profit at least one hour during the reference week.

- Pacca* : Made of bricks or concrete.
- Pardah system* : A system of keeping women off from the sight of men other than their immediate family members. But in the study, purdah is to mean maintaining a piece of long cloth over the body of women so that they can hide their concealed organs. Here it does not bear the sense of preventing women from receiving formal education at schools and colleges which was found in the past.
- Rabi crop* : Crops grown in one of the two agricultural seasons called Rabi that begins at the end of the humid period when the Southeast monsoon starts ceasing in November and extends up to the end of March. The season is characterised by dry sunny weather and warm at the beginning and end, but cool in December-February. The average length of the Rabi growing period ranges from 100-120 days in the extreme west to 140-150 days in the Northeast part of Bangladesh. Major Rabi crops grown in the study area include: (i) cereals- wheat, maize, boro rice; (ii) tuber and roots crops- potato, sweet potato; (iii) oilseeds- mustard, sesame, linseed; (iv) pulses- lentil, grass pea, cowpea; (v) winter vegetables- cabbage, cauliflower, brinjal, tomato, carrot, radish; (vi) spices- chilli, onion, garlic ginger ; (vii) fruit plants- watermelon etc.
- Samity* : An association of village commonly known as co-operative.
- Sarat* : It is called autumn comprised of mid-August to mid-October in the English calendar months. It lasts during Bhadra and Ashvin in the Bangla calendar.
- Shhit* : It is the fifth season and the colder part of the year, in contrast to summer, the hotter. According to the Bangla calendar it spreads over the months of Paus and Magh. It is mid-December to mid-February in the solar calendar. But practically, November through February is the winter season in Bangladesh.

- Unemployed* : The definition of ‘Unemployed’ is given by International Labor Organization (ILO) and adopted by Bangladesh Bureau of Statistics (BBS) as “A person aged 15 years and over is considered as unemployed if he/she do not work at all during the preceding week of the survey (even an hour in the reference week) and is actively looking for work or is available for work but do not work due to temporary illness or because there is no work available”.
- Underemployed* : Who as involuntarily out of gainful employment during the period of 15 years and above but has been actively looking for a job or is willing to work but not looking for work because of illness or believe that no work is available.
- Union Parishad* : Lowest stratum of local self government of Bangladesh. An Upazila is divided into some unions. A chairman is elected by the active voting of its people. Along with a chairman, the elected member of every ward and ward members of its reserved seats, union parishad is formed. This parishad looks after the developmental works of the union.
- Unpaid family worker* : Unpaid family worker is a person who works at least one hour in the reference period (other than household work) without pay or profit in a family operated farm or in a business owned/operated by the household head or other members of the household to whom he/she is related by kinship, marriage, adoption or dependency.
- Upazila* : Lower stratum of the local self government of Bangladesh. Usually a district has been divided into some areas which are called Upazila. A chairman is elected by the active voting of the people of that constituency. He is the key person of the upazila and look after everything.

3. tKvb temiKvix cĀZōvb (NGO) Gi mvt_ m=úK©AvtQ wK bv? DĒi: nūv ☐ bv ☐
4. (DĒi nūv ntj) Avcwb wK tKvb cĀkĀY MōY KtiťQb? D: nūv ☐ bv ☐
 (DĒi: nūv ntj) wK cĀkĀY wbtqťQb cĀkĀYi mgqKvj

*KvR KvR AskMōY m=úK©
Z_`rejx*

5. Avcwb tKb KvR Ktiť? DĒi:

KvR Kivi KviY	nūv	bv
˘ŋgx gvi v hvl qvi Rťb˘		
˘ŋgx AbĪ˘ KvR hvl qvi Rťb˘		
˘ŋgx wēť˘ k hvl qvi Rťb˘		
˘ŋgx t˘ Lvi bv Ktiť bv tm Rťb˘		
Zvj vK cĀBv nI qvi Rťb˘		
˘ŋxi Amy˘ Zvi Rťb˘		
˘ŋgx KvR KtiťZ etj tm Rťb˘		
tewk mšwb nI qvi KviťY		
cwi etji i Dbqťbi Rb˘		
GbwRI Ōi cīvgťk©		
Ab˘iv KvR Ktiť ZvB		
˘witi˘ i KviťY		
ev˘Pvť˘ i tj Lvcovi KviťY		
FY cwiťkva Kivi KviťY		
tewk fivB-ťevb nI qvi KviťY		
ever gvi v hvl qvi KviťY		
gv gvi v hvl qvi KviťY		
mr gv KvR KtiťZ etj ZvB		
ever t˘ Lvi bv Ktiť bv ZvB		
etm t_ťK wK Kie ZvB KvR Kwi		

6. kĀgK wntmte Avcwb wK wK KvR Ktiť b I KZ cwi kĀgK cvb?

tġšmg/wmRťbi bvg	KvRi weeiY	mgťqi weeiY	cwi kĀgťKi weeiY	mġeawi i weeiY I AvbgwbK Aw_Ř gġ˘	tġw
	exR cĀuqv RvZKiY				
	exR Zj v ˘Zwi				
	exR DVvťbv				
	Rġg PvI I cĀZKiY				
	cwbťbqv				
	Rġg ti vcb				

tgšmg/wmRtbi bvg	KvRi weeiY	mgtdi weeiY	cwi kgtKi weeiY	mjeaw i weeiY I AvbgwbK Aw_R gj''	tgU
Bwi /tevtiv	AvMvQv cwi ~vi				
	mvi I wKUbvkK e''envi				
	avb KvUv				
	avb gvovB/wcUvtbv				
	avb hvPvB				
	avb wm×/i Kvftbv				
	avb fv½v				
	Pvj Svov				
	avb/Pvj msiké Ab''vb'' KvR				
	Lo i Kvftbv				
	tgU	=		=	=
Avbg tgšmg	exR cūqv RvZKiY				
	exR Zj v ^Zwi				
	exR DVvtbv				
	Rig Pvl I cūZKiY				
	cwb tbqv				
	Rig tivcb				
	AvMvQv cwi ~vi				
	mvi I wKUbvkK e''envi				
	avb KvUv				
	avb gvovB/wcUvtbv				
	avb hvPvB				
	avb wm×/i Kvftbv				
	avb fv½v				
	Pvj Svov				
	avb/Pvj msiké Ab''vb'' KvR				
	Lo i Kvftbv				
	tgU	=		=	=
kvZ Kvj xb menR I Ab''vb'' tŋĬ	mwi I v Pvl /gvovB				
	Avj yPvl /DVvtbv				
	tcvUj /Ki j v DVvtbv				
	gwi P msiké KvR				
	wgró Avj yPvl /DVvtbv				

tgšmg/wmRtbi bvg	KvRi weeiY	mgtdi weeiY	cwi kigtKi weeiY	mjeaw i weeiY I AvbgwbK Aw_R gj	tgU
	Av`v/i mp/wcqR PvI /DVvfbv				
	fjfv gvovB				
	tgU	=		=	=
Ab`vb` Avqexgj K KvR	evox-Ni cwi`vi				
	Mew`ci/nvm-gj Mx cvj b				
	gvQ PvI				
	kvKmevR PvI				
	bvmvi x/ebvqb				
tgU					

7. kigK wntmte KvR AskMötiYi tqtT Avclb wK tKvb evavi mšxb ntqtQb ? DEi: n`u ☐ bv ☐

8. DEi n`u ntj wK wK evavi mšxb nb?

evavi aiY	evamgn	n`u	bv
cwi tekMZ evav	gvfV chte cvqLvbi e`e`v tbB		
	cj`lt`i mvt_ KvR Ki tZ fvtj v j vtm bv		
	tiv`ejotZ KvR Ki tZ cwi bv		
kvi xii K mvgve xZvRwbZ evav	me KvR Kivi mgv_`bvB		
	me KvR Rwb bv		
	me KvRi Rb` gvbj WtK bv		
	me ai tYi KvR Awg cQ` Kwi bv		
mgvRi gj`tevaRwbZ evav	gvfV KvR Ki tj mgvRi mevB Lvi vc gtb Kti		
	cöZtekviv tgj vtgkv Ki tZ A`w`teva Kti		
	mgvRi Abp`vb`wj tZ wgt tZ t`q bv		
	gvfV KvR Ki tj mšyb i tlv Kiv hvq bv		
	tQvU ev`Pv AvtQ ZvB		
	ev`Pv`i i`p Lvl qvfbv hvq bv		
thvMvthvM mgm`vRwbZ evav	gvW`ti ZvB KvR Ki tZ PvB bv		
	b`x cvi vcvti i mgm`v		
	iv`wvU fvj bv		
agv`q evav	ag`gvfV KvR Kiv mgv`B Kti bv		
	gvfV KvR Ki tj c`PKiv hvq bv		
	gvfV KvR Ki tj bvgvR cov hvq bv		

9. KvR vbtqWRZ nb wKfite ? DEi: vbtR KvR LpR ☐ gwj tKiv KvRi tLvR Avgvi KvQ Avtm ☐ nU/ evRvi t_tK gwj tKiv KvRi Rb WtKb ☐ Abvb ☐
10. cvkP Gj vKvq/Mtg KvRi tLvR hvb wK bv? DEi: nuv ☐ bv ☐
11. DEi n'ntj KZ`i chSf hvb? ☐ cvkP Mg chSf ☐ cvkP 2/3 Mg chSf ☐ _vov evBti AtbK`i chSf |
12. c00bteKvi Zi (thgb`BRtbi KvR wZb Rb vgtj Kiv) AvQ wK bv? nuv ☐ bv ☐

gRjx mspvšf Z_vejx

13. Kgxb wRtb c0Zw b KvR cvb wK bv? DEi: nuv ☐ bv ☐
(DEi bv ntj) gvtm KZw b cvb
14. KvRi wRtb (AvgY I Bui) wK wfvEtZ KvR Ktib? DEi: wK gRjx wfvEtZ ☐ Pw3 wfvEtZ ☐ Dfq ☐
15. wRb Qvov Abvb mgq wK wfvEtZ KvR Ktib? DEi: wK gRjx wfvEtZ ☐ Pw3 wfvEtZ ☐ Dfq ☐
16. wK gRjxi wfvEtZ KvR Kivi tytT wtb KZ NvUv KvR Kitz nq? DEi :NvUv
17. Pw3 i wfvEtZ KvR Kivi tytT wtb KZ NvUv KvR Kitz nq? DEi :NvUv
18. AvcbtK AvMvg kg wpm Kitz nq wK bv? DEi: nuv ☐ bv ☐
19. DEi n'ntj wRtbi tPtq KZ Kg`vtg kg wpm Kitz nq? DEi:UvKv
20. Mn Kgxb wRtb KvR Ktib wK bv? DEi: nuv ☐ bv ☐
21. DEi n'ntj wK wfvEtZ KvR Ktib? DEi: gym wfvEtZ ☐ FZzwfvEtZ ☐ eQi wfvEtZ ☐
22. GtZ KZ UvKv cvb? DEi:..... UvKv
23. KvR Kivi Kvty tKvb mthvM mjeav cvb wK bv? DEi: nuv ☐ bv ☐
24. DEi n'ntj wK aitbi mthvM mjeav tctq_vtKb? DEi:

25. cjl kltKti i mvt_ Avcbt`i KvRi cv_R` Dtt L Ki`b

cv_R`i aiY	n'u	cv_R`i e`wB	bv
gRjxMZ cv_R`	<input type="checkbox"/>	<input type="checkbox"/> 1-25 <input type="checkbox"/> 26-50 <input type="checkbox"/> 51-75 <input type="checkbox"/> 76-100 <input type="checkbox"/> 100+	<input type="checkbox"/>
mgqMZ cv_R`	<input type="checkbox"/>	<input type="checkbox"/> 1 NvUv vbtP <input type="checkbox"/> 1-2 NvUv <input type="checkbox"/> 3-4 NvUv <input type="checkbox"/> 5 NvUv +	<input type="checkbox"/>
mthvM mjeavMZ cv_R`	<input type="checkbox"/>		<input type="checkbox"/>
gj`tevaMZ cv_R`	<input type="checkbox"/>		<input type="checkbox"/>

26. gRjx wKfite c0vb Kiv nq? DEi: ☐ c0Z`Kw b KvR tktl ☐ c0Z`K nU/evRviti i w`b
☐ c0Z mBvtn ☐ c0Z gvtm ☐ FZzwRb tktl
27. gRjx tctZ tKvb mgm`v nq wK bv? DEi: nuv ☐ bv ☐
28. DEi n'ntj wK aitbi mgm`vi gLvgL ntZ nq? DEi: ☐ evi evi Pvl qv ☐ wKQzw`tq wKQzemK i vLv
☐ wov`0 cwi gvtY tPtq Kg`t`qv ☐ UvKvi cwi teZ`tKvb`e`t`qv ☐ `te`i wvbgvtq UvKv t`qv ☐ Dcti i me`vj
29. KvR Kitz Mtq tKvb nqi wbi (thSb) wKvi ntqt0b wK bv? DEi: nuv ☐ bv ☐

30. DĖi n'untj ųK aiþbi nqiwb i ųKvi ntqtQb | DĖi:
31. DĖi n'untj Kvi ųviv? DĖi: mnKgr^ocyæi kġK ☐ gwi K/ ųbtqvM KZv^o Ab'vb' ☐
32. Kg^oųtĲi cj'Ĳi kġtKiv Avcbv' iþK ųK ųntmte t'þLb? DĖi: ☐ mnvqK kv³ ųntmte ☐ cĲZųųų ųntmte
33. Avcbv' i e'vciti cj'Ĳi kġtKiv ųK gtbvfe tcvĲY Ktib? DĖi: 1. gwi viv `eĲ Zviv KvR KiþZ cvti bv
2. gwi viv tKvb KvR Rvþb bv 3 | gwi viv cj'Ĳi i gZ/mgvb KvR KiþZ cvti bv 4 | gwi v' iþK KvþR
tbi qv ųK bv Zv' i Nti _vKv DvPZ 5 | gwi v' i KvR Kiv ag^omg_ų Ktib |
34. cĲZų b msvmwi K KvþR KZUKzmgq e'q Ktib?NųUv
35. cĲZų b msvmwi K KvþR Avcbvi _ųgx KZUKzmgq e'q Ktib?NųUv
36. KvþRi tġųmġi ųK msvmwi K KvR_ųj ųbqvZ KiþZ nq? DĖi: n' ☐ bv ☐
37. msvi tKgB PĲj ? DĖi: me mgq AfveMųĲ ☐ gvS gta' AfveMųĲ ☐ DųĲ bq, AfveĲ bq ☐ DųĲ _vK
☐

tġųj gvbĲK Pm'v m'ųųK Z'vejx

38. eQti tKvb mgq bv tLtq _vKþZ nq ųK bv? DĖi: n' ☐ bv ☐
39. DĖi n'untj eQti i tKvb mgq Ĳ KZ ų b ati? DĖi:gvm,ų b |
40. Lvl qvi AvþM mvevb ų tġ nvZ aġq Lvevi Lvb ųK bv? DĖi: n' ☐ bv ☐
41. Lvevi m'vj vBų ^Zwi KiþZ Rvþbb ųK bv? DĖi: n' ☐ bv ☐
42. KvþRi mgq gv_ųj / QvZv/gv' / Pkgv e'envi Ktib ųK bv? DĖi: n' ☐ bv ☐
43. cwi evi cwi KĲi bv c×ųZ e'envi Kti ųK bv? DĖi: n' ☐ bv ☐
44. KvþRi mgq AvnZ ntj ev kixti i tKvb Ask tKtU tMtj ųK Ktib? DĖi: `ųv^oNvm ųPietġj j vMB ☐ KųUv
RvqMv m'vfj b ų tġ cwi _vi Kti JĲa j vMB ☐ Wv³vti i KvþQ hvB ☐ Ab'vb' ☐
45. Amy'ntj ųPvKrmvi Rþb' Kvi KvþQ hvb? DĖi: Ĳ Sv ☐ KveivR ☐ ųųtcbPvix t'þK ųþR ☐
Mųg' Wv³vi ☐ tnvgl Wv³vi ☐ cvK Kiv Wv³vi ☐
46. KvþRi mgq Amy'ntj gwi K ųųZcþY t'q ųK bv? DĖi: n' ☐ bv ☐
47. DĖi n'untj ųK aiþYt ųųZcþY t' b ? DĖi: mgvb' ųvKv ų tġ t' b ☐ ųPvKrmvi cĲiv e'qfvi enb Ktib
☐ ųPvKrmvn msvi Pvj vþvi Rb' cĲqvRbxq msvh' Ktib ☐
48. Avcbv ųK mvi ųþb Aemi cvb? DĖi: n' ☐ bv ☐
(DĖi: n'untj) KZUKzmgq cvb
49. ewoþZ tiųųĲ, ųųųf, d'vb AvþQ ųK bv? DĖi: n' ☐ bv ☐
50. Avcbvi Lvevi cwi Drm ųK? DĖi: b`xi cwi ☐ cKti i cwi ☐ bj Kþci cwi ☐ Ab'vb'.....
51. Avcbvi cvqLvbi aib Dþj Ĳ Ki'b? DĖi: tLvj v gW ☐ Sj šĲ ☐ Rj vex cvqLvbi ☐ cvKv cvqLvbi ☐
52. Avcbvi ewoþZ Kqųų _vKvi Ni AvþQ? DĖi: msL'v..... |

53. Ni ʔjv Kxw ʔq ʔZwi? Dɛi: eutki teov I Ltoi Pvj □ gwɔi ʔqj I Ltoi Pvj □ eutki teov I wɔbi
Pvj □ wɔbi teov I wɔbi Pvj □ gwɔi teov I wɔbi Pvj □ Bɔi teov I
wɔbi Pvj □ |

54. tQɬj -tgɬqiv ɬɬj hvq wK bv? Dɛi: nüv ☐ bv ☐

55. iʔtɔi Kvɔ tKvɔ cʔvkv AvtQ wK bv? Dɛi: niw ☐ bv ☐ Dɛi nʔvuntj Zv
wK?.....

56. mgvʔRi KvʔQ †Kvb cʔʔkv AvʔQ wK bv? DĖi: nūv ☐ bv ☐ DĖi nʔvntʃ Zv
wK?.....

ŋgZɪqɓ mɔ́úKZ Z_ 'vej x

57. $\frac{1}{2} \log_2 K + \log_2 \frac{1}{K}$ Avcı $\frac{1}{2} \log_2 K + \log_2 K$ Ktibi?

veiq	KvRi bvg	GKKfve	th\$ fve	Kwi bv
Pj vdiv	K. evRvfi tKvb wRlbm mq Kiv			
	L. evRvfi tKvb wepq Kiv			
	M. Wv3vfi i KvQ hvl qv			
	N. Qve t`Lv/wntbgn t`Lv/Abpvtb hvl qv			
	O. Mtgi evBti hvl qv			
	P. tKvb GbwRI -tZ hvl qv			
	Q. Mtgi wfZti Pj vdiv Kiv			
	R. AvZkq `Rtbi evotZ hvl qv			
	S. BDnbqb cwi l`/e'vstK hvl qv			
	T. KvRi Rtbi tNviwdiv Kiv			
wmxvš-MôY	K. mšvbt`i `tj fvZKiv			
	L. Wv3vfi i KvQ hvl qv			
	M. GbwRI ev mvgwZ ntZ UvKv tbi qv			
	N. AvZkq `Rtbi emotZ hvl qv			
	O. msmvfi c0qvRtb wRlbm mq			
	P. Rvg mq ev wepq			
	Q. cwi evi cwi Kí bv cxvZ MôY			
	R. wbtRi UvKv LiP Kiv			
	S. `vgxi UvKv LiP Kiv			
	T. mšvtbi weevn t`l qv ev Kiv			
	U. mšvb MôY ev gv nI qv wmxvš-tbqv			
	V. KZwJ mšvb tbe tm wmxvš-tbqv			
W. weevn ev Abpvtb Dcnvi t`qv				

APPENDIX III

Women Laborers in Agriculture: A Study on Dinajpur District of Bangladesh



(Collected data will be used in academic purpose only and confidentiality of data will also be restrictly maintained)

Interview schedule

Serial no.....

Date of interview:

Basic information

Name of interviewee.....

Name of husband/ father.....

Village, Union..... Upazila.....

1. Characteristics of Laborer: a) Age years
 - b) Educational qualification: No schooling ☐ Can sign only ☐ class
 - c) Physical fitness: Physically fit ☐ Physically sick ☐ Handicapped ☐
 - e) Marital status: Spinster ☐ Married ☐ Widow ☐ Divorcee ☐
 - Rejected by husband ☐ Separated ☐ f) Religion: Islam ☐ Others ☐
2. Familial characteristics:
 - a) Type of family: nuclear ☐ joint ☐
 - b) No. of children: adult....., under aged.....
 - c) No. of Dependent.....
 - d) Family head: husband ☐ herself ☐ son ☐ father-in-law ☐ mother-in-law ☐
 - others ☐
 - e) Own dwelling place? yes ☐ no ☐
 - f) Amount of land:decimals g) Monthly income..... taka
 - h) Monthly expenditure.....taka
 - i) Loan of previous year..... taka
 - j) Surplus of previous year taka
3. Do you have any connection with NGOs? yes ☐ no ☐
4. (If yes) have you taken any training? yes ☐ no ☐
- (If yes) please name the training..... duration.....

***Information related to
participation in
agriculture***

5. Why do you work in agriculture?

Causes of work	yes	no
For husband death		
For husband working at remote place		
For husband departure to abroad		
Husband does not look after me		
For being a divorcee		
For husband illness		
Husband pressures me for working		
For greater number of children		
For familial development		
For NGO's inspiration		
For seeing others working		
For poverty		
For children's education		
For paying debt		
For being greater number of siblings		
For father's death		
For mother's death		
For step-mother's pressure		
Father does not look after me		
For my pleasure/ I cannot sit idle		

6. As a laborer in agriculture, what types of work do you do and how much wage do you get?

Name of season	Types of work	Duration(days)	Wages(taka)	Benefit and its price(taka)	total
Irri/Boro	Seed processing				
	Preparing seed bed				
	Uprooting paddy shoots				
	Ploughing and preparing of land				
	Give water				
	Transplanting paddy-shoots				
	Weed cleaning				
	Fertilizer /insecticide using				
	Reaping paddy				

Name of season	Types of work	Duration(days)	Wages(taka)	Benefit and its price(taka)	total
	Threshing				
	Sorting				
	Rice boiling and drying				
	Husking				
	Dusting off rice				
	Other related tasks to rice				
	Hay making				
	Total	=		=	=
Amon	Seed processing				
	Preparing seed bed				
	Uprooting paddy - shoots				
	Ploughing and preparing of land				
	Give water				
	Transplanting paddy-shoots				
	Weed cleaning				
	Fertilizer /insecticide using				
	Reaping paddy				
	Threshing				
	Sorting				
	Rice boiling and drying				
	Husking				
	Dusting off rice				
	Other related tasks to rice				
	Hay making				
	Total	=		=	=
Vegetables in winter	Mustard related tasks				
	Potato related tasks				
	Parable/Bitter Guard				
	Green chillis				
	Sweet potato				
	Ginger/garlic/onion related tasks				
	Corn related tasks				
	Total	=		=	=

Name of season	Types of work	Duration(days)	Wages(taka)	Benefit and its price(taka)	total
Others in come generating tasks	House cleaning				
	Cattle rearing				
	Fish cultivation				
	Vegetable				
	Nursery and forestation				
Total					

7. Do you face any obstacles to working?

8. If yes, what types of obstacles are they?

Types of obstacles	description	yes	no
Obstacles based on Environment	No toilet facilities in field		
	Feel no comfort with male laborers		
	I can not work in sun and rain		
Obstacles based on Physical inability	I have no ability in all sort of work		
	I do not know all work		
	Man does not call me for all work		
	I don't like all work		
Obstacles based on social values	Working in the field is treated as bad		
	Neibors feel embarrassed in social intercourse		
	They do not want to get our participation in social function		
	Prestige punctures in working in the field		
	I have little child		
	No breast-feeding facilities are there in the field		
Obstacles based on communication	Field is far away		
	River crossing problem		
	Bad communication		
Obstacles based on religion	Religion does not allow working in the field		
	Veil is not to be maintained in working in the field		
	Prayer is not to be said in working in the field		

9. How do you get engaged in working? I seek work ☐ employer seek us for working ☐
 employer contract us in bazaar/market ☐ others ☐

10. Do you go to another village for working? yes ☐ no ☐

11. If yes, how far it is? unto next village ☐ unto next two/three village ☐ across thana boundary ☐

12. Is there any disguised labor? yes ☐ no ☐

Information regarding wages

13. Do you get work everyday in dull season? yes ☐ no ☐
 (if no) how many days in month
14. On what basis, do you engaged in work in season? daily wage-basis ☐ contract basis ☐ both ☐
15. On what basis, do you engaged in work in out of season? daily wage-basis ☐ contract basis ☐ both ☐
16. How long do you have to work in daily wage-basis?hours
17. How long do you have to work in contract basis?hours
18. Do you have to sell labor in advance? yes ☐ no ☐
19. If yes, how less it is from the seasonal price?taka
20. Do you work as a domestic worker? yes ☐ no ☐
21. If yes on what basis? monthly ☐ seasonally ☐ yearly ☐
22. How much do you get? taka
23. Do you get any privilege for working? yes ☐ no ☐
24. If yes, name the privilege please.

.....

25. Please narrate the discrimination in comparison to male laborer.

Type of discrimination	yes	Interval of discrimination					no
wage	<input type="checkbox"/>	<input type="checkbox"/> 1-25	<input type="checkbox"/> 26-50	<input type="checkbox"/> 51-75	<input type="checkbox"/> 76-100	<input type="checkbox"/> 100+	<input type="checkbox"/>
time	<input type="checkbox"/>	<input type="checkbox"/> < 1 hour	<input type="checkbox"/> 1-2 hour	<input type="checkbox"/> 3-4 hour	<input type="checkbox"/> 5 hour +		<input type="checkbox"/>
privilege	<input type="checkbox"/>						<input type="checkbox"/>
values	<input type="checkbox"/>						<input type="checkbox"/>

26. How wages are paid? Everyday after work ☐ every bazaar day ☐ every week ☐ every month ☐ after a season ☐
27. Do you face any trouble in getting wage? yes ☐ no ☐
28. If yes, what type of trouble do you face? ask time and again ☐ pay little and rest something ☐ give less than due ☐ give goods instead of money ☐ give money instead of goods ☐ all of the above ☐
29. Do you fall victim to sexual abuse? yes ☐ no ☐
30. If yes what type of abuse it was:

.....

31. If yes, by whom? Male colleague ☐ owner/employer ☐ others ☐

32. How do male colleagues see you? secondary forces ☐ competitor ☐
33. What kind of attitude do your male colleagues bring up about you in working?
 1. Women are weak, they cannot work 2. Women do not know how to work 3. Women can not work as much as a man can 4. Women should be stayed in home 5. Religion does not permit their working
34. How much time do you spend in household activities?hours
35. How much time does your husband spend in household activities?hours
36. Do you have to do all the work in season? yes ☐ no ☐
37. How is your family going on? Always in debt ☐ sometimes in debt ☐ no debt, no surplus ☐ surplus ☐

Information regarding basic human needs

38. Do you face starvation in any time of the year? yes ☐ no ☐
39. If yes, in which month and for how many days?month,days
40. Do you wash your hands with soap before taking meals? yes ☐ no ☐
41. Do you know how to make oral saline? yes ☐ no ☐
42. Do you use mask/ gloves/spectacles/umbrella/straw hat at the time of working? yes ☐ no ☐
43. Do you use family planning? yes ☐ no ☐
44. What do you do if you get injury in working? Use chewed durba grass ☐ cleaning by savlon, I take medicine ☐ I go to doctor ☐ others ☐
45. Whom do you go to at the time of illness? ojha ☐ kabiraj ☐ taken medicine from dispensary ☐ quack ☐ Homeo doctor ☐ MBBS ☐
46. Do employers compensate if you get injury at the time of working? yes ☐ no ☐
47. If yes, what type of compensation do they pay? Pay a little money ☐ bear treatment expenditure ☐ give necessary assistance with treatment expenditure ☐
48. Do you get leisure in working? yes ☐ no ☐
 (If yes,) how many hours
49. Do you have radio, TV or fan in you house? yes ☐ no ☐
50. What is the source of your drinking water? River water ☐ pond water ☐ tube well water ☐ others ☐
51. What type of latrine do you use? Open field ☐ hanging ☐ water sealed ☐ pacca ☐
52. How many dwelling houses do you have? Number..... |

53. The houses are made of what? Bamboo fencing with thatched roof ☐ mud wall with thatched roof ☐ bamboo fencing with tin roof ☐ tin fencing with tin roof ☐ brick wall with tin roof ☐
54. Do your children go to school? yes ☐ no ☐

<i>Information related to empowerment</i>

57. How do you perform the following tasks?

Type	Name of the tasks	Individually	Jointly	Do not perform
Movement	a) visiting market for shopping			
	b) visiting market for selling			
	c) visiting healthcare			
	d) going to a movie			
	e) visiting outside the village,			
	f) visiting cooperative society or NGOs,			
	g) moving within the village independently			
	h) visiting friends and relatives			
	i) visiting bank/union parishad.			
	U. moving for work			
Decision making	a) enrolment of children to school			
	b) going to doctors/hospital,			
	c) involvement with any cooperative/NGOs,			
	d) visiting to relatives,			
	e) purchase of household necessities			
	f) purchase/ sell of land,			
	g) adoption of family planning			
	h) spending her own money			
	i) spending her husband's money			
	j) marriage of their sons and daughters,			
	k)when to have children			
	l) number of children to have			
	m) offering presentation,			
	n) borrowing/lending money,			
	o) House repairing.			

Do you know the following questions?

Type	Name of the questions	Yes	No
Political and legal Awareness	a) Name of chairman of your union <i>parishad</i>		
	b) name of ward member of your area		
	c) name of the prime minister		
	d) name of the parliament member of her area		
	e) casting of vote independently for elections		
	f) Campaign for a political candidate		
	f) significance of registering marriage		
	g) permission required to second marriage,		
	h) law of inheritance		
	i) knowing of labor law		
	i) Right to labor organization		
	i) bargaining about wage fixation		
	j) protesting against unfair/fair prices		
	k) protesting against violence in family		
	l) Protesting against violence in society.		

Thank you very much

APPENDICES IV AGRICULTURE CALENDAR OF BANGLADESH

AGRICULTURAL CALENDAR													
CROP	পৌষ	শ্রাব	কাশ্বিন	চৈত্র	বৈশাখ	জ্যৈষ্ঠ	আষাঢ়	শ্রাবণ	কাদ্র	আশ্বিন	কার্তিক	অগ্রহায়ণ	পৌষ
	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	
CEREALS													
Aus (Local:Broadcasted)													
Aus (HYV:Transplant)													
Aus (HYV:Broadcasted)													
Aman (Local:Broadcasted)													
Aman (Local:Transplant)													
Aman (HYV:Transplant)													
Boro (Local:Transplant)													
Boro (HYV Transplant)													
Wheat													
Maize													
TUBERS													
Potato													
PULSES													
Lentil													
Chickpea													
Mungbean													
Blackgram													
OILSEEDS													
Soybean													
Soybean													
Mustard/Rape													
Groundnut													
Groundnut													
Sesame													
Sesame													
Sunflower													
VEGETABLES													
Bottle Gourd													
Bitter Gourd													
Cucumber													
Snake Gourd													
Sweet Gourd													
Cauliflower													
Chinese Cabbage													
Radish													
Indian Spinach (Pui Sak)													
Leaf Amaranth (Lai Sak)													
Stem Amaranth (Dania Sak)													
Kang Kong (Kolmi Sak)													
Egg Plant													
Tomato													
Green Pea													
Hyacinth Bean													
Yardlong bean													
Okra													
Onion													
Spinach													
FRUITS													
Papaya													
FIBRE													
Jute (capsularis)													
Jute (<i>olitorius</i>)													

Explanatory Key:
Rice Growing Seasons: Aus, Aman, Boro

Shade Indicates Seed Bed
HYV=High Yielding Variety

Prepared by: National Data Bank

Source: Yearbook of Agricultural Statistics of Bangladesh, 1998

**APPENDICES V
PHOTOGRAPHS**





Women laborers are cleaning weeds from the field

Women are collecting mustard seed





Women laborers are threshing mustard



Women laborers are sowing corn seeds



Women on the work of collecting potatoes



Women laborers are planting paddy shoots in the field (The daily Prothom Alo, March 08, 2014).