WOMEN WORKERS IN AGRICULTURE: A STUDY IN MORIGAON DISTRICT OF ASSAM

A Thesis

Submitted to Gauhati University for the Degree of Doctor of Philosophy in Women's Studies in the Faculty of Arts

Submitted By

ALPANA BARUAH

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Declaration

I hereby declare that this thesis entitled **"Women Workers in Agriculture: A Study in Morigaon District of Assam"** submitted by me in fulfilment of the requirement for the award of the degree of Doctor of Philosophy in the Faculty of Arts of Gauhati University is my original research work under the guidance of Dr. Chandrama Goswami, Associate Professor, Krishna Kanta Handiqui State Open University, Assam.

Neither this thesis nor any part of the thesis has been submitted to any other university or institution for any degree or diploma.

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Certificate from the Supervisor

This is to certify that the thesis entitled, **"Women Workers in Agriculture: A Study in Morigaon District of Assam"** submitted to Gauhati University in the Department of Women's Studies in fulfillment of the Degree of Doctor of Philosophy in Women's Studies is a record of research work carried out by Ms. Alpana Baruah under my supervision and guidance.

All help received by her from different sources have been duly acknowledged.

No part of the thesis has been reproduced elsewhere for award of any other degree.

Goswami

Chandrama Goswami

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Place: Guwahati

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Alpana Baruah

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LIST OF ABBREVIATIONS

FAO	-	FOOD AND AGRICULTURE ORGANIZATION
GAD	-	GENDER AND DEVELOPMENT
GDP	-	GROSS DOMESTIC PRODUCT
HYV	-	HIGH YIELDING VARIETY
IAY	-	INDIRA AWAAS YOJANA
ILO	-	INTERNATIONAL LABOUR ORGANIZATION
LLPs	-	LOW LIFT PUMPS
MDGs	-	MILLENNIUM DEVELOPMENT GOALS
UNDP	-	UNITED NATIONS DEVELOPMENT PROGRAMME
UN	-	UNITES NATIONS
NGO	-	NON GOVERNMENT ORGANISATION
NSSO	-	NATIONAL SAMPLE SURVEY ORGANIZATION
PCA	-	PRIMARY CENSUS ABSTRACT
SHGs	-	SELF HELF GROUPS
STWs	-	SHALLOW TUBE WELLS
WAD	-	WOMEN AND DEVELOPMENT
WID	-	WOMEN IN DEVELOPMENT

CHAPTER I

INTRODUCTION

1.1 Background of the Study

Agriculture is the main stay of the economy of India and regarded as the largest sector of the country's economic activities. The agricultural sector contributes 17.4 percent of the country's Gross Domestic Product (GDP) and 9.7 percent of its exports in 2014-15 (Economic Survey 2015-16). Though the share of agriculture in GDP has declined steadily as a result of planned development of the country, it still plays a pivotal role in the rural economy. As per census 2011, out of 481.7 million total workers, 118.7 are cultivators and 144.3 million are agricultural labourers. Thus nearly 55 percent of the total workers are engaged in agricultural activities as compared to 58.2 percent in census 2001 (Primary Census Abstract, Census of India 2011). Agriculture is the largest source of employment and more than half of the population of the country depends on agriculture directly or indirectly for their livelihood. Viewed from another perspective, it supplies food and other primary products for consumption to the growing population, provides inputs to industry and earns nation's valuable foreign exchange (Krishnaraj and Kanchi 2008).

Women form an important segment of productive workforce in the economy of majority of developing countries including India. They play a significant role in agriculture - as female agricultural labour, as farmers, co-farmers, female family labour and with male out-migration, widowhood, etc. as managers of farms and farm

entrepreneurs (Nisha 2008). According to M. S. Swaminathan, the famous agricultural scientist, 'it was women who first domesticated crop plant and thereby the art and science of farming. While men went out hunting for food, women started gathering seeds from the native flora and began cultivation for needs of food, fodder, fiber and fuel'. They are the pioneer of farming (Swaminathan 1985). As per census 2011, out of total workers of India, 331.9 million are male and 149.9 millions are female. The total rural workforce is 348.6 million and out of which 121.8 million are female. As large as 81 percent of the total female workers are rural. Out of these total rural female workers, 28.8 percent are cultivators and 48.5 percent are agricultural labourers contributing a major proportion of the farm production as well as household income. They are responsible for the country's food production. There is an increased participation of rural women in agriculture besides doing their household duties. This is mainly because gender composition of agricultural labourer is changing in the era of globalization. A shift from subsistence farming to marketable crops and mechanization of agriculture has resulted in the labour being displaced from the agricultural sector. It is therefore becoming essential for men to migrate in search of better-paid job and women are filling the vacuum. Moreover, the present inflationary pressures warrant women to join the male members of the family for securing a substantial livelihood. Women have come out from the traditionally patterned society for gaining economic independence and creating the same for others by taking up self-employment ventures. Thus rural India is witnessing a process which can be described as 'feminization of agriculture'.

Women workforce outside the four walls is larger in rural area than in urban area (Kumar and Kumar 2009). The multi-dimensional role of women outside and inside home can be categorized into three different heads.

i) **Agriculture**: Land preparation, Sowing, transplanting, irrigation, weeding, fertilizer application, plant protection, harvesting, winnowing, drying, storing etc.

ii) **Allied activities**: Cattle management, fodder collection, poultry care, fishing, milking etc.

iii) **Domestic:** Cooking, child rearing, water collection, fuel wood gathering, household management, taking care of the aged etc.

Rural women are mostly engaged in agricultural activities in three different ways. They work as-

i) **Paid labourers** when they work on another person's land as wage earners, whether in cash or kind or share.

ii) **Cultivators** when they work in their own farm or land as unpaid workers and

iii) **Managers** of certain aspects of agricultural production by way of labour supervision and the participation in post – harvest operations (Behera and Behera 2013 and Radhika 2008).

Over the last 40 years, the role of women in agriculture has become a familiar and well developed subject. It is only since 1970's especially when United Nations declared the year 1975 as Women's Year and the decade 1975-85 as the Women's Decade, the understanding of women's role has been changed from 'welfare perspective' to 'economic perspective'. Women came to be considered as active contributors to the development process rather than passive beneficiaries. They contribute a significant part of household income. Their role mostly comes in the form of three main activities- reproduction, domestic labour and productive labour. Women make essential

contribution to the agricultural and rural economies in all developing countries (Mondal 2013).

Woman's labour has special significance in agricultural and allied operations. Agriculture in India mainly depends on manual labour and the major contribution is from women. The rural women often called as "farm women" constitute almost 50 percent of the farm workforce and play a significant role in agriculture (Sarungban 2006). The farm women, either as a family member or hired labour participate in different farm activities like seeding, uprooting seedlings/ transplanting, fertilizer application, irrigation, weeding, plant protection, thinning, harvesting, threshing, processing, selling farm products, storage etc. There is hardly any activity except ploughing where women do not participate and some of the operations are exclusively carried out by women. Moreover, women are also involved in allied activities like animal and poultry rearing, fodder collection, milking etc. and in some skilled jobs like embroidery, knitting and weaving along with their domestic chores. But many of these activities are not defined as 'economically active' activities in national accounts though they are essential for the well-being and food security of rural households. Similarly their contribution in agriculture goes unnoticed and they remain as 'invisible workers' on the farms (Agarwal B. ed. 1988). Their level of participation in a region is determined by a host of social, economic and cultural factors. It is also characterized by several entries and exits associated with the life cycle of the women and events such as marriage, childbirth and divorce (Unni 1992). Women's involvement varies widely among different regions, ecological sub zones, farming system, caste, class and stages in the family cycle (Radhika 2008, Swaminathan 1985 and Kumar N. 2006). Generally, the poorer the family, the greater is the involvement of women in agricultural activities. Women in rural areas have extensive workloads with dual responsibility of farm operations along

with household management. However, the true picture of female work and their contribution to family income is usually not clearly presented. Many economically productive activities performed by women go unrecorded as such or are subsumed within 'domestic work' (Goswami 2013). The fact remains that female workers contribute significantly to household income across all farm sizes and their earnings are found crucial for landless and small farm households (Sethi 1991). Female agricultural workers contribute significantly to household economy, but they lack education, health and other support services and often do not have access to economic resources. Moreover, they are not integrated into the mainstream of the development process (Tuteja 2000). Studies on women have given enough recognition to the productive role of women in agriculture and other activities, but the range, variety and quantum of their contribution is often ignored because of traditional attitudes and beliefs.

1.2 Conceptual Framework

Concepts of Work, Worker, Agricultural Labour Force and Women Workers in Agriculture

The definition of work and workers given by both Census and National Sample Survey Organisation (NSSO) are considered in the present study. The Census of India defines work as participation in any economically productive activity with or without compensation, wages or profit. Such participation may be physical and/or mental in nature. Work involves not only actual work but also includes effective supervision and direction of work. It even includes part time help or unpaid work on farm, family enterprise or in any other economic activity. All persons engaged in 'work' as defined above are workers. Persons who are engaged in cultivation or milk production even solely for domestic consumption are also treated as workers (Census 2001). Workers are

classified as main, marginal and non-workers in Census. A main worker is defined as the person whose main activity is participation in any economically productive work and has worked for a major part of the reference year (i.e. 6 months or more). If a person has worked for less than this period (i.e. less than 6 months), he or she is regarded as marginal worker. A non worker is defined as a person who has not done any work at any time in the reference year.

The NSSO has tried to improve upon the Census definition on work and workers. Persons who are engaged in any economic activity or who despite their attachment to economic activity have abstained for reason of illness, injury or other physical disability, bad weather, festivals, social or religious functions or other contingencies necessitating temporary absence from work constitute workers. Unpaid helpers who assist in the operation of an economic activity in the household farm or nonfarm activities are also considered as workers (NSSO 61st Round, Report No. 515, p.12). Employed persons are categorized by NSSO into three broad activity groups according to their status of employment. These broad groups are: (i) self-employed, (ii) regular wage/salaried employees and (iii) casual labour. The distribution of the workers in different employment status has been presented in the usual status (ps+ss). Usual status includes both principal status (ps) and subsidiary status (ss) workers.

Persons who are either 'working' (or employed) or 'seeking or available for work' (or unemployed) during the reference period together constitute the labour force (NSSO 68th round). According to Food and Agriculture Organization (FAO), the agricultural labour force includes people who are working or looking for work in formal or informal jobs and in paid or unpaid employment in agriculture. That includes self-employed women as well as women working on family farms. It does not include domestic chores

such as fetching water and firewood, preparing food and caring for children and other family members. For most women in developing countries, labour is their key asset and agriculture is particularly an important source of self- and wage-employment for those who lack training or resources for employment in other sectors (FAO 2011). Women workers in agriculture work as farmers on their own account, as unpaid workers on family farms and as paid or unpaid labourers on other's farms and agricultural enterprises. They are engaged in both crop and livestock production at commercial and subsistence levels. They produce both food and cash crops and manage mixed agricultural operations generally involving crops, livestock and fish farming. All of these women are considered as the part of the agricultural labour force (FAO 2011). Women comprise an average of 43 per cent of the agricultural labour force in developing countries, varying considerably across regions from 20 per cent or less in Latin America to 50 per cent or more in parts of Asia and Africa (FAO 2014).

Agricultural workers have been classified by the Census of India as cultivators and agricultural labourers. A person is classified as cultivator if he or she is engaged in cultivation of land owned or held from Government or held from private persons or institutions for payment in money, kind or share. Cultivation includes effective supervision or direction in cultivation. A person who has given out her/his land to another person or persons or institution(s) for cultivation for money, kind or share of crop and who does not even supervise or direct cultivation of land, is not treated as cultivator. On the other hand, a person who works on another person's land for wages in money or kind or share is regarded as an agricultural labourer. She or he has no risk in the cultivation, but merely works on another person's land for wages. An agricultural labourer has no right of lease or contract on land on which she/he works.

Participation of women in the agricultural labour force may underestimate the amount of work they do because women are less likely than men to define their activities as work. They are less likely to report themselves as being engaged in agriculture even when they work, on average, longer hours than men. So even if fewer women are involved in agriculture they may contribute more total time to the sector.

1.3 Statement of the Problem

The economy of Assam continues to be predominantly agrarian. Agriculture sector continues to support more than 75 percent of its population directly or indirectly, providing employment and support to more than 50 percent of its total workforce. The sector contributes 17.9 percent to the Gross State Domestic Product (at constant 2004-05 prices) during 2013-14 (Economic Survey, Assam 2014-15). Agriculture being a labour intensive activity, the availability of workers for sustaining agricultural production is crucial.

In Assam, agricultural production and social life of the families are managed by the joint labour of the family members in farm households. Women play a crucial role in the process of agricultural production. Majority of the women work as unpaid family labour in the family farms and a smaller percentage of them work as agricultural labour. They have a long tradition of doing various productive and economic activities. They are actively involved in agriculture and allied fields including crop production, livestock production, post-harvest operations, agro and social forestry, fishing etc. along with household activities and some non-farm job like weaving. Men opt out from agriculture and seek new employment avenues elsewhere when they encounter low prospects in agriculture. However, women have remained in the agricultural sector.

Women's share in the agricultural workforce has been rising which can be termed as feminization of agriculture. In broad terms, the feminization of agriculture refers to women's increasing participation in the agricultural labor force, whether as independent producers, as unremunerated family workers, or as agricultural wage workers (Cornheil 2006). Figures from the NSSO data reveal that there has been a shift in the occupational structure of the rural people of Assam. The percentage of rural population engaged in agriculture has declined from 79.4 percent in 1993-94 to 70.5 percent in 2009-10 (NSSO 50th and 66th round). But rural women employed in this sector have increased from 83.2 percent in 1993-94 to 86.2 percent in 2009-10 (NSSO 50th and 66th round). Moreover, rural female workers constitute 90.73 percent of the total female workers in Assam. Amongst rural women, the percentage of 'marginal workers' to total female population has increased significantly from 12.18 percent in 2001 to 54.0 percent in 2011 (Statistical Profile on Women Labour 2009-11 and 2012-13).

As per census 2011, 48.95 percent of women workers in Assam are engaged in agriculture against 49.5 percent of male as cultivators and agricultural labourers. Table 1.1 shows the percentage of male and female workers engaged in agriculture in the state in different Census years.

Table 1.1: Women Workers in Agriculture (in Percentage)

Census Years	Cultivators		Agricultural Labourers	
	Male	Female	Male	Female
1971	59.6	28.75	10	5.36
1991	50.89	50.93	12.02	12.01
2001	38.34	41.11	12.12	16.16
2011	36.29	28.06	13.22	20.89

Source: Census of India, Assam.

From 1971 to 1991, the percentage of female workers both as cultivators and agriculrural labourers increased, but percentage of men as cultivators decreased with a slight increase in agricultural labourers. From 1991 to 2011, percentage of both male and female has come down in cultivation and gone up in the category of agricultural labourers. But it has been observed that the percentage of female workers has been found to be higher. Thus there is an increasing trend of participation of women in agriculture as agricultural labourers in Assam. The NSSO data shows that percentage of both male and female engaged in agriculture has declined in Assam over time, but the percentage of female is higher than that of men and from NSSO 61st round onwards, the rate of decrease in percentage is less for female workers than the male. Table 1.2 shows the percentage of rural male and female workers (usual status) engaged in agriculture.

Table 1.2: Percentage of Rural Male and Female Employed in Agriculture (Usual Status)

NSSO Rounds	Male	Female
55th Round (1999-00)	64.7	79.4
61st round (2004-05)	69.6	88.3
66th Round (2009-10)	66.6	86.2
68th Round (2011-2012)	58.6	79.04

Source: Different Rounds of NSSO.

Thus, both the Census and NSSO data shows that women workers constitute an important portion of agricultural workers in Assam. But women's role as active work-producer is rarely acknowledged though it is significant for family survival. They have been under-represented in the development process and their problems are shown least concern. Despite women's important role in agricultural development and allied fields,

they have virtually no access to agricultural information, services or production assets and have very limited control over their earnings.

Against this background, considering the importance of women in agriculture, the present study is an attempt to examine the role of women workers in agriculture and allied activities in rural Assam. The study assesses the contribution of farm women workers to the family income and their decision making capacity regarding agricultural activities.

In the present study, the term 'women workers in agriculture' has been used to designate the farm women who are engaged in various kinds of operations related to agriculture and its allied fields. It includes both the unpaid family farm labour and the waged or agricultural labour in farm and allied fields. Women workers in agriculture are also termed as 'farm women' or 'farm women workers' and these terms are also used in the present study.

1.4 Theoretical Framework and Review of Literature

Theoretical Framework

Many development theories or approaches are available globally that focuses on the issues of women's participation in economic development. Women in Development (WID), Women and Development (WAD) and Gender and Development (GAD) are the three main approaches which address women issues in development. The term "women in development" came into use in the early 1970s, after the publication of Ester Boserup's Women's Role in Economic Development (1970). Boserup was the first to systematically delineate on a global level the sexual division of labour that existed in agrarian economies (Rathgeber 1989). Her study highlighted the way in which

development policies and processes had been biased against women from colonial times onwards (Kanji *et al.* 2008). She also described the division of labour between men and women in three different development stages- the rural stage, the urban stage and the transitional stage from rural to urban society. These different environments implied a variation of possibilities and hardships for women (Danielsson and Jacobson 2008). She analysed the changes that occurred in traditional agricultural practices as societies became modernized and examined empirically the differential impact of those changes on the work done by men and women (Rathgeber 1989). Boserup's work had an influence on making women more visible in development approach. Women in Development (WID) approach evolved from a liberal feminist framework in the early 1970s. The WID theory continued to challenge the assumption that modernisation alone would increase gender equality (Connelly *et al.* 2000). Following the empirical findings of Ester Boserup, WID perspective became widespread. The WID approach saw the problem as the exclusion of women from development programmes and approaches. As a result, the solution was seen as integrating women into such programmes (Muyoyeta 2004). The focus on WID began to give way to a broader definition of gender issues. As a result of it, country-level assessment of these issues and investment in projects with gender-related action increased sharply (Debnarayan 2006). The Women and Development (WAD) approach arose in the latter part of the 1970s adopting a Marxist feminist approach. WAD asserts that women have always been important economic actors. The work they do both inside and outside the household is critical to the maintenance of society (Muyoyeta 2004). The WAD perspective focused on the relationship between women and development processes rather than purely on strategies for the integration of women into development (Rathgeber 1989). WAD was very persuasive in raising the debate that women have a role not only in reproduction but in

production as well. For development to be meaningful for women both these roles have to be acknowledged (Muyoyeta 2004). The GAD approach, which was developed in the 1980s, stepped away from both WID and WAD and was founded in socialist-feminist ideology (Rathgeber 1990, p.493). GAD departs from WID, which discussed women's subordination and lack of inclusion in discussions of international development without examining broader systems of gender relations (Miller and Razavi 1995). GAD looks at the impact of development on both women and men. It seeks to ensure that both women and men participate in and benefit equally from development and so emphasises equality of benefit and control ((Muyoyeta 2004). GAD-focus on improving women's position in society, thereby replaced the WID approach (Connelly et al. 2000:62-63). WID, WAD and GAD approaches have laid a foundation and platform for gender equality by focusing issues related to women and gender in development.

In connection with the theoretical backdrop of explaining participation of women in economic development, important development theories namely modernization theory, dependency theory and standpoint theory are discussed. The modernization, the movement of the 1950s and 1960s, is an economic theory that is rooted in capitalism (Matunhu 2011). The theory developed by the end of Second World War, firstly in the United States, later gaining its popularity in the first world countries. The central tenet of this theory was that the Third World countries would only develop by following the Western development model. Modernization theory holds that all societies progress through similar steps or stages of development. The idea of modernization assumed that a trickledown effect of economic development would benefit all. Boserup (1970) criticized the modernisation theory in the sense that development would not be equally beneficial to all and argued for women's inclusion in capitalist development from the point of view of equality. Her study with empirical grounding showed how division of

labour associated with development neglects or undermines the value of women's work and status especially in the developing countries. Dependency theory emerged as an alternative view on development after the Second World War as a critique of modernization theory (Okafor *et al.* 2007). Dependency theory originated in Latin America and was popular in the 1960s and 1970. It states that global inequality is primarily caused by core nations (or high-income nations) exploiting semi-peripheral and peripheral nations (or middle-income and low-income nations), creating a cycle of dependence (Hendricks 2010). In the dependency theory, capitalism is understood as a world system and it contains an inherent core-periphery duality which determines the developmental potentialities of different countries. The dependency theorists opine that economic growth in the advanced industrialized countries does not necessarily lead to growth in the poorer countries, instead, economic activity in the richer countries often leads to serious economic problems in the poorer countries. Hence, it is the dependency of developing countries on the developed countries that created underdevelopment in the developing countries, and development in the developed ones (Arku and Arku 2009). This theory also ignored issues related to gender and treated development as a gender-neutral process (Slusser S. 2009).

Feminist theories shed light on prevailing marginalization of women in development efforts and any bias or injustice, or both, in the treatment of women in different social settings and institutions. Placing gender relations and women at the centre of theorization, feminist standpoint theory emerged in the 1970s. The feminist scholars influenced by Marxist insight began to examine how inequalities between men and women influence knowledge production (Al-Haik 2015). Their work is related to epistemology, a branch of philosophy that examines the nature and origins of knowledge and stresses that knowledge is always socially situated (Elizabeth Borland,

www.britannica.com). Standpoint feminism makes the case that, because women's lives and roles in almost all societies are significantly different from men's, women hold a different type of knowledge. Their location as a subordinated group allows women to see and understand the world in ways that are different and challenging to the existing male-biased conventional wisdom (Narayan U.1989). Feminist standpoint theory, theorized by Dorothy Smith and Nancy Hartsock, and described through the works of other feminist scholars such as Patricia Hill Collin, Donna Haraway, Sandra Harding and Hilary Rose (Al-Haik 2015). The theory offers a critique of existing power relations and the inequalities they produce in the lives of women and men (Wood 2005).

The feminist standpoint theory is used to guide the present study. This theory is considered relevant to this study because of its interdisciplinary nature in studying issues relevant to women. It is a unique philosophy of knowledge building that challenges us to see and understand the world through the eyes and experiences of women and to apply their vision and knowledge to social activism and social change. Feminist standpoint schoiars focus on women's everyday life. As rural Assam still abides by the rules of tradition and culture, women's participation in economic activities has also been influenced by socio-cultural and traditional norms. Women's activities on the farms are generally not valued as par male farmer and their work roles are different from that of men. Feminist standpoint theory-base guides the researcher to emphasize gender relations in agriculture and decision making dynamics of rural families from farm women's standpoints. The researcher attempts to highlight the problems faced by women workers in agriculture from the standpoint of women in the study area.

Review of Literature

Though a number of research has been conducted both in India and abroad related to the present study, there are still few studies that capture the work roles of women in agriculture and their empowerment and contribution to farm family income especially in Assam. Following are the review of some of the studies related to present study which are divided into four heads.

A) Participation of women in agriculture and animal husbandry activities

B) Employment and income of farm women

C) Women's role in agricultural decision making

D) Constraints faced by women in agriculture and allied activities

A) Participation of Women in Agriculture and Animal Husbandry Activities

Boserup (1970) in her study made an elaborate analysis of the role of women in agriculture in different regions of Asia, Africa and Latin American countries. She examined participation of women under different agricultural systems. In very sparsely populated regions where shifting cultivation is used, men do little farm work while women do the most. In densely populated regions of extensive cultivation, women do little farm work and men do much more. In regions of intensive cultivation, both men and women do hard work in agriculture in order to earn enough to support family on a small piece of land.

Dixon (1982) in his study revealed that weeding and transplanting are women's task while ploughing and irrigation are men's tasks. Sowing may be performed by men

or women or shared, harvesting is frequently shared, but the post-harvest operations like threshing, winnowing, drying, husking, cleaning and storing are done by the women.

Devi and Reddy (1984) studied the contribution of female workers in the district of Krishna of Andhra Pradesh. The study revealed that women are mostly participating in pre- sowing, sowing and harvesting. Besides these works, weeding, gap filling and application of fertilizer are also performed by women.

Singh and Bhati (1985) in their study examine the utilization of manpower in Himachal Pradesh. Their study estimates the household's total labour inputs and analyses how the division of labour is organised in 120 marginal, small and other farm households of 10 villages in Himachal Pradesh. The study results that women's labour accounts for 61 per cent of the total farm work, their participation being greater in activities like animal husbandry than in crop production and that there is some tendency towards sexual division of labour. The study also reveals that in the hilly regions, all members of the family fully participate in the farm work irrespective of sex, caste or size of farm. Moreover, in many cases women have to act as head of household taking care of family and land in the villages, because of the absence of male migrants.

Saikia *et al.* (1986) in their study on role and status of rural women in Assam found that women involved in agricultural activities like storing of seeds, uprooting of seedlings, transplanting, harvesting and others mostly reared livestock and poultry birds. Rural women were found to spend more time mainly in transplanting and harvesting and they are required to be engaged for few hours in looking after their animals and birds.

Chawhan and Oberoi (1990) conducted their study on Gaddi tribal women of Bharman tehsil of Chama district. They found that the role of tribal women in farming activities was of immense importance. The proportion of participation of women was

more than 70 per cent. Except ploughing of fields, marketing of grains, irrigation and application of pesticides and fungicides, women participated in almost all farm operations.

Sharma (1992) found in his study on farm women of Jabalpur district in Madhya Pradesh that 76 per cent of the rural women participated in seed storage, 75 per cent in winnowing, 74 per cent in care for animals, 71 per cent in crop harvesting, 66 per cent in weeding, 43 per cent in sowing, 26 per cent in manuring and 24 per cent in using implements.

Varma (1992) observed that the operations of transplanting and storage of grains were found to be exclusive domain of women. On the other hand, pesticide dusting, spade work during field irrigation, ploughing, sowing, manure and fertilizer application, uprooting of seedlings and marketing of grains were exclusively performed by men. The other farm operations like weeding, harvesting, carrying head load, threshing and winnowing were performed jointly but predominantly by women. Animal husbandry is predominantly a male affair in case of high socio-economic status whereas it is predominantly a female affair in case of farmers of medium and low socio-economic status. On an average, a woman devotes 3.5 hours as against 1.6 hours per day devoted by men in these categories. Besides, irrespective of socio-economic status, women devote more time to house-hold activities during slack agricultural season. On an average, a woman devotes about six hours in peak season as against seven hours in slack season.

Bina Agarwal (1994) in her study analysed the various problems faced by women labour in agriculture and their participation in decision making regarding farm operations. She conducted her study in South Africa. Her study, ' women's property

rights in South Africa' revealed that one of the main cause of women's low participation in decision making and being disadvantaged and discriminated is her exclusion from property right in land. She explained that political and social subordination of women in South Asia is bound up with their lack of property rights in land or even they own land they often lack effective control. Her work ends with a clear exposition and analysis of pathways to empowerment through land reform, administrative change and women's group.

Unni's paper (1997) discussed that in rural areas of India, while women are still predominantly self-employed or family helper, the proportion of casual employees has been increasing in the last two decades. Casual workers also form a much larger proportion of the female workforce as compared to their male counterparts. On the other hand, the proportion of regular workers is increasing among the male workforce. The paper observes that demand for female agricultural labourers is crop-specific in a region. The higher level of participation of female labour are associated with the specific agro-climatic conditions and crop-cultural practices of a region.

Mishra *et al.* (1999) have attempted to examine the extent and proportion of participation of women labour in paddy cultivation and difference in wages between men and women labour. The study was conducted on kymore Plateau and Satpua hill region of Madhya Pradesh which reported that participation of women labour was higher in transplanting of paddy, inter-culture and harvesting. The operations like preparatory tillage, sowing, manuring and fertilizer application, irrigation operation etc. were performed jointly with man. The participation of women labour both family and hired in paddy cultivation of the study area constituted 53 percent of the total labour force. The

study also resulted that there was high wage gap between man and women for all operations.

Hirway and Roy (1999) report that the contribution of rural women in agriculture in terms of time and efforts is not less than that of men. 49 percent of rural female workers work as agricultural labourers against 26 percent of rural male workers. The study also finds that the increased share of rural women's employment in the primary sector is largely because of their increased employment in cultivation, mainly as unpaid family workers. Rural women's works are largely unpaid, home-based and therefore remain invisible. Their contribution is neither counted nor considered as an input while framing programmes and formulating policies for women.

Saikia (1999) carried out a study on the role of rural women in agriculture in three villages in Jorhat district of Assam. The study records that women are engaged in sowing, transplanting, irrigation, hand weeding, harvesting and post-harvest operations. They perform 80 percent transplanting and harvesting, but they do not participate in purchasing inputs, spraying insecticides and other pesticides, using tractors and power tillers. For other tasks, rural women provide 10-30 per cent of the total labour. The employment pattern of farm women in agriculture showed a sharp increase in the peak seasons of transplanting and harvesting and steep decline in lean period.

Bora *et al.* (2000) have examined the role performance of farm women in animal husbandry activities in the selected villages of Tezu Development Block of Arunachal Pradesh. The study identified a total of eighteen roles performed by women. Those were fodder gathering, carrying fodder to the home, cutting and boiling of fodder, feeding the animals, grazing of animals, watering to the animals, grinding of feed, cleaning of sheds, bathing of animals, cleaning of mangers, grooming, milking of animals, heating of milk,

selling of milk, care of sick animals, care of new born animals and vaccination of animals.

Fabiyi *et al.* (2007) in their study focused on the role of women in agriculture and their constraints in Baliri Local Government Area of Gombe State, Nigeria. The study revealed that majority (72%) of the respondents was small scale farmers having 0.1-0.3 hectares of farm land for cultivation of food crops. Majority of the women farmers (88%) were young and below 50 years and apart from their home activities, they were more involved in farm activities than men. The study has reported that 80% of the work done on the farm in Nigeria especially in food production, harvesting and processing are carried out mainly women. Their activities go beyond crop production to other agricultural activities like livestock and poultry production. More than 70% were involved in rearing of pigs and goats and about 20% involved in sheep and poultry production.

Nisha (2008) has studied on the employment aspects of women labour is agriculture in palakkad district of Kerala. The study examined many aspects of employment such as level and pattern of women labour and wages earnings. The study revealed that women have adversely affected by the off season unemployment in agriculture. In the study area summer season is the off season in agriculture and as the fields are left fallow due to lack of irrigation facilities women labourers are remain unemployed or jobless for most of the days. Some labourers were involved in employment guarantee programmes and also other non agricultural activities, but only for a few days. The study suggests that steps should be taken to provide non-farm employment for more number of days. The local authorities should implement the

employment guarantee programmes in such a way that the prescribed days of employment is assured.

Jamali (2009) in her paper highlights the role of rural women of Pakistan in agriculture and its allied fields. The study is based on secondary data mainly Labor Survey of Pakistan (2006-07). According to the study, cotton picking is mainly performed by female and 89 percent women are engaged in it. They are also extensively involved in other activities such as 30 percent in hoeing and 22 percent in weeding. Aside from these activities, women have very little involvement in other aspect of cotton production. Rural women are involved in almost all livestock related activities. Except grazing, all other livestock management activities performed by females. 90 percent of women involved in shed cleaning and preparing dung cakes, 85 percent in collection of farm yard manure, 69 percent in watering animals, 31percent in feeding and 58 percent in milking and milk processing activities. Rural women are also engaged in poultry farming and it is one of the major sources of their earnings.

Iftikhar (2010) conducted his study in Bahalapur district, Punjab province of Pakistan and found that 98.5% of women in the study area were involved in the cultivation of cotton and wheat. On the other hand, 43.8% and 34.8% of them grew sugarcane and fodder respectively. The study also disclosed strong participation of women in livestock husbandry. A significant number of the respondents took part in activities such as cotton cleaning, spreading of wheat and rice in the sun and cotton storage.

Chayal and Dhaka (2010) conducted a study in Bundy district of Rajasthan to analyse the role performance of women in farm activities. The findings show that winnowing, weeding, gap filling, grading, shifting produce to threshing floor and

cleaning of field farm operations in which the participation of women was more than 75percent. Participation of women varied between 50-75 percent in threshing, raising nursery for seedlings and thinning. The results also show that sowing, manure application and irrigation were performed on field by women 25- 32.5 percent. Least participation was found in ploughing (2%) and in fertilizer application (1%). There was no participation of women reported in marketing and plant protection measure.

Khan *et al.* (2012) conducted their study to investigate the role of women in agricultural activities in district Peshawar in Pakistan during 2004-2005. The study observed that women spent most of their time on post-harvest than on pre-harvest activities. The pre-harvest activities accounted for wheat, sugarcane and maize 38.72, 22.25, 14.4 hours respectively while post-harvest activities accounted for wheat, sugarcane and maize were 121.55, 66.37 and 34 hours respectively. The average daily time spent on livestock management activities was 6.23 hours.

B) Employment and Income of Farm Women

Due *et al.* (1985) in their working paper examines women's contributions to farm household income on small farms in three areas of Zambia. Data collected from a sample of 112 women show that females contribute more than half of the hours of agricultural labour done by their as well as well as more than four-fifth of the hours of households labor. In addition, females contribute more than half of the average household's off-farm income gained both from wage-labour and small-scale trading. When net farm income is allocated on the basis of hours contributed and this is added to off-farm income, female generate 55% of the average household's cash income.

Ratghe (1989) in his article focuses on the contribution of North Dakota women to the family farms. The study included those tasks on or off the farm which do not earn

a wage, yet they serve an important economic role for the well-being of the family farm. The article concluded with the fact that in North Dakota, farm women participated more than half of the tasks and contributed at least one-third of the labour, more than twenty hours a week on average devoted to specific farm tasks in addition to their household chores.

Chauhan S.K. (1999) in his paper has examined the contribution of Gaddi tribal women in farm and household economy. The findings of the study revealed that the contribution of women was more than that of men in the activities performed near to their dwellings, which is reflected through more labour days put in crop production, cattle rearing and handloom weaving. The share of women in farm and off-farm income came to the extent of 27 per cent and 12 per cent of the total household income respectively, making an overall contribution of 24 per cent on an average in the household income which did not include their contribution as home maker.

Sharma *et al.* (1999) in their study attempts to study the magnitude of female labour participation in agriculture and livestock enterprises and to estimate the contribution of female to farm income. The study was conducted in tribal areas of Himachal Pradesh and shows that the contribution of female labour to total income in all the important crops and livestock was higher than that of male labour in all the farm categories. The study also reveals the female labour is the sole performers of most of the farm operations and livestock management.

Mamatha and Hiremath (2000) conducted a study in Tiptur taluka of Tumkur district in Karnataka in 1996-97. The study was undertaken to examine the season-wise employment and income of farm women stratifying the class of women into four categories viz. small, medium, artisan and labourer. The Study resulted that the small

category women participated more in agricultural operations on their own field and as hired labour in other's farm and contributed Rs. 1815 to the family income than medium category farm women who works only in their own farm (45 days) contributing Rs. 645 towards family income. Artisans and labourer class worked more days as hired labour due to their very small land holding and earned income of Rs. 840 and Rs.3035 respectively. The study concluded that labour category farm women more income to her family compared to other category farm women. They worked from early morning till late in the evening during peak season in order to gate extra wages and hence performed exhaustive work as hired labour for such long hours without any leisure time left for rest and recreation.

Tuteja (2000) has conducted a study on the contribution of female agricultural workers in family income in rural Haryana. The study finds contribution of female workers in family income was significant on all farm size and their earnings were crucial for the small and landless households. The proportionate contribution of female workers was higher among the landless and small farm households while the absolute contribution was higher in the medium and big farm households.

Kachroo J. (2005) in his study examined the economic contribution of female labour in farm and non-farm sector towards family income in rural Jammu and Kashmir. The study revealed that the share of rural women in cultivation income was more than 40 percent. In doing farming their contribution was highest which more than 70 percent was. The wage employment of these farm women was very negligible as compared to their male counterparts. Women's contribution towards non-agricultural income was found to be more than the farm income.

Barik (2008) has conducted an empirical study in Mathura district to find out the pattern of labour use and income of farm women. The study is confined to the female family labours of marginal, small, medium and large farms. The study revealed that contribution of female family labours to total agricultural income in marginal farms is the highest in percentage (52%) but in absolute terms the contribution of female family labours to total agricultural income in large size farms is the highest, that is Rs. 113799.the share of female family labours in non agricultural income in four farm size groups varies from 12 to 20 percent and in absolute terms it is from Rs. 157 to Rs. 379. Out of total of agricultural and non agricultural income in the share of female family labour in four farm size groups ranges from 34 to 48 %. The study also found that with increase in farm sizes the share of female family labour to total agricultural and non agricultural income of the family in absolute terms increases.

Parveen *et al.* (2013) attempted in their study to make visible the partition of rural women in farm activities, their contribution in generating household income and decision making power.The study showed that the male and female counter parts of small, medium and large farms rendered their involvement in farm activities for 177.41 mandays, 207.46 mandays in 250.92 mandays respectively. The annual average household's income in small, medium and large farms were estimated at TK (taka) 51075, TK 74364 an TK 126864 respectively. Women of these categories contributed toTK 21015, TK 22227.6 and TK 27510 which were 41.15%, 29.89% and 21.68% of total household income respectively. The study revealed that house hold income is positively related with farm size, number of female earning members, women's income and expenditure and negatively related with family size.

Rais *et al.* (2013) in their study sought to assess the economic status of rural women in agriculture and lives rearing activities in district Khairpur of Sindh, Pakistan. The study showed that majority of women participated in wheat farming (80%), date palm harvesting and fruits management (70%), cotton collection (80%) and more than 90% of the women engaged in the involvement of the women in livestock management. In most of the cases the income generated from crops, off farm work and crop sell is majority retained by female. The majority of the females keep 100%, 90% 80%, 80%, 80% income generated from performing off farm work, selling milk/ghee, poultry birds sell, sewing/embroidery, handicraft, and are independently spending their income. However, they are handling 56% income in large animal sale and 45% in crop output sale. The study also found that in occasions like eid/festivals/year females shared 46.7% of the expenses, while 80% share in income was made by female family member for religious ceremonies and livestock inputs per year. Women have a very large share in bearing household expenditures.

Goswami (2013) conducted a study in Darrang district in Assam to find out the contribution of women agricultural workers to family income in the farm households. The study observes that female workers contribute significantly to household income and their earnings are crucial especially for landless and marginal farm households. The proportionate contribution of females found to decline with increasing farm size. A large percentage of women are found to be engaged in agriculture because it is an occupation which provides work opportunities to women irrespective of their age level of education or any formal training. The study shows the percentage share of female workers to family income of landless, marginal, small and big farm size categories are 47.79, 28.04, 21.76 and 10.14 respectively.

C) Women's Role in Agricultural Decision Making

Roy (1997) conducted a study in Khurda district of Orissa revealed that farm women took an active role in farm decision making. It was found from the study that 8.35 per cent respondents were recorded to take decision in selling milk and milk products, 7.31 per cent in selling poultry and poultry products, 6.09 per cent in borrowing money for farm operation and 4.87 per cent in buying farm equipments. Joint decisions with their husbands were common in many aspects of agricultural operations.

Kishore *et al.* (1999) revealed in the study carried out in Sitapur district of Uttar Pradesh that in majority of farm households, husbands alone took the decision (62%). In regard to decision making of selection of crops and varieties to be sown , proper time and method of sowing seeds, means of irrigation, manures and fertilizers to be used, purchase and sale of farm machinery and number of hired labourers, more than 80 per cent women's participation was nil. Though 17.5 to 30 per cent of women were consulted, but about 10 to 16 per cent of the respondents' opinion was considered for decision making. The study found that only 2.0 to 13.5 per cent of the respondents took the final decision related to farm activities.

Parveen and Leonhäuser (2004) in their paper investigates the nature and extent of rural women's empowerment and factors influencing it in three villages of Mymensingh district. Six key indicators of empowerment covering three dimensions were chosen for this purpose. The distribution of empowerment indicators show that 83% of the women have a very low to low economic contribution, 44% have a very low to low access to resources, 93% have a very poor to poor asset ownership, 73% have a moderate to high participation in household decision-making, 43% have a highly unfavorable perception on gender awareness and 72% have a moderate to high coping

capacity to household shocks. The study concludes that education, training and exposure to information media have the potential to increase women`s empowerment. Therefore, effective initiatives undertaken by the concerned agencies in improving women`s education, skill acquisition training and access to information could enhance women's empowerment in order to achieve gender equality and development at all levels in the rural society of Bangladesh.

Bharathamma *et al.* (2006) conducted a study in Gadag district of North Karnataka to know the extent of empowerment of rural women through their income generating activities. The extent of gain in empowerment through income generating activities was 24.6 per cent. Education ,land holding, income of the family, social participation and mass media showed highly significant association with empowerment whereas age, caste, marital status, family type and family size has no association with empowerment of rural women.

Nosheen (2010) in her study reveals that women are most active in crop production and natural resource management activities. Their role in decision making process regarding to agricultural productivity is very limited. The factors like cultural values, personal ego, male dominance, social pressures, mobility problems, physical and social security are ground problems of females in decision making process. The final decision power on all issues lies with male household head. Therefore, it is recommended that labor intensive crops like vegetable farming, crop production technologies should be promoted in the area. Electronic media and NGOs' counseling services will be useful in improving gender equality perceptions among males. Equal education and training opportunities should be provided to both males and females in order to improve the quality of farm operations and its recognition in male's eyes.

Kiran *et al.* (2012) attempt to analyze the status of women empowerment in different caste categories in Sultanpur district of Uttar Pradesh by examining pivotal socio-psychological factors of empowerment such as autonomy vs. dependency, self-esteem vs. self-depreciation and reflective vs. repetitive behavior of women. The results showed that majority of the women had medium or low level of empowerment. Further women who were illiterate/less educated were less empowered and generally belong to the scheduled caste category. In overall terms, the researchers would argue that the broad based approach is one of the best approaches to guarantee gender equity and to empower rural women, and that this approach should be considered in the formulation of rural policies and the creation and implementation of agricultural and rural development programmes and projects.

Unnati *et al.* (2012) carried out a research work in Renapur and Ausa Tehsils of Latur district with the objectives to study extent of participation of farm women in decision making and the relationship between personal and socio-economic characteristics of farm women and their participation in farm decision making. The study resulted that majority (64.00%) of the respondents belonged to medium category of extent of participation in farm decision making while 22.67 per cent and 13.33 per cent of the respondents exhibited low and high extent of participation respectively. The study also found that variables namely age, education and annual income had significant positive contribution to the participation of women in farm decision making while the relationship between land holding and farm decision making was observed non significant.

Chayal *et al.* (2013) highlighted the contribution of farm women in decision making in agriculture in Bundi district of Rajasthan. According to their study, the tasks

in which farm women's participation in decision making was less than 30 percent were sowing method, storage, selection of crop, selection of seed variety, irrigation and weeding whereas in field preparation, the involvement was 40.83 and in harvesting operation, it was 51.67 percent. It was investigated that marketing of agricultural inputs and farm produce, manure/ fertilizer application type and manure/ fertilizer application were the activities wherein farm women's involvement in decision making was very poor. The study also found that age of farm women and the size of farm were positively and significantly correlated with level of involvement of farm women in decision making. Education of farm women was found effective in the participation of farm women in agricultural decision making process. The study identified low self confidence of women in making farm decisions (75.83%), lack of knowledge about farming (58.33), belief that women are subordinate to male counterparts (57.50%), illiteracy (52.50%), poor access of farm women to farm information (48.33%) were the major constraints which obstructed the women to involve in faming decision process.

Meti (2013) conducted a study on socio economic empowerment of farm women in agro based enterprises during 2010-11 in Manvi and Raichur taluks of Raichur district of Karnataka state. From each taluka, three villages were selected based on highest number of farm women who involved in self help group activities. From each village 20 farm women were selected by following simple random sampling procedure and information was gathered and analyzed. The results of the study revealed that majority of the farm women were self motivated as to join SHG since it is a good means to save money. The money lending, local poultry, local Dairy and vermi- culture on small scale basis were the major activities adopted by more than half of the farm women due to motivation through training and demonstration. It was highlighted from the results that, financial condition of majority (73.33%) of farm women was improved, followed by

social and psychological status (68.33%) and increased level of confidence (61.66%) among farm women towards entrepreneurship are the major benefits derived after joining as the members of SHG as expressed by themselves. Participation of women in SHG activities motivate them to take up entrepreneurial activities. The study suggested that the policy makers and administrators have to give priority for formation of women SHG and provide financial assistance for establishing their own agro based enterprises.

Sharma *et al.* (2013) carried out research work to study the extent of involvement of women in decision making related to farm and income generating activities. The study highlighted that women were generally involved in group decision making of area like grain storage, cropping pattern to be followed and storage of animal fodder. None of the respondents were involved when major decisions regarding the purchase of insecticides and weedicides were made. In the rest of the activities related to increase to production and harvesting, the involvement of women is almost nil except 15.3% respondents actively involved in the decision related to selection of new implements to be used for production. About purchase and sale of livestock, the major decisions were made by male members. 59.3% of respondents were involved in joint decision although final say was of men only. Regarding number of livestock to be kept, 4% respondents heading the family took independent decision and 31.3% were involved in partial decision. Male members in majority of the families took decisions related to selling of livestock and only 10% women respondents were involved partially. The findings of the study revealed that men dominated in majority of the farm decisions in rural families. Decisions related to buying and selling of land, machines and other agricultural implements; improvements of harvest and livestock management were mainly taken by head of the family or husbands.

Baliyan (2014) studied empirically on the role and participation of women of cultivating households in decision making in the Western region of Uttar Pradesh. The study also explored the socio-economic factors which determine female participation in decision making. To analyze women's decision making power she have constructed a Decision Making Index (DMI) and found that 75 percent farm women had medium level decision making power while 20.83 percent had high level and 4.17 had low level decision power regarding agricultural activities. Regression analysis used in the study confirms that age and person days spent on agriculture are found to have a strong positive impact on decision making while family income has a negative impact. Caste, status of women in family and education has an expected positive impact on decision making, but regression coefficients are not significant. Size of family also has a negative impact, but not statistically significant. The value of R square is 0.28. This indicates that the factors determining women participation in decision making are quite complex and depend upon a number of socio-economic factors including traditional social and cultural values. The study concluded that women in the study area did not enjoy a high degree of autonomy in decision making in the family in spite of their significant contribution to economic activities.

Das (2014) conducted a study to identify the different independent variables of on-farm and off-farm activities from where the empowerment of farm women emerges. The study was conducted in area under Haringhata Panchayat Samity, West Bengal with a total sample size of 100 in 5 selected Mouzas randomly. It is observed from the study that the variables like age, material possession, mass media exposure, family income and socio-economic status have got the important bearing on the gain in empowerment of women.

Mulugeta and Amsalu (2014) carried out a study in Yilmana Densa district of Amhara Region, Ethiopia with the objectives to investigate the rule of rural women in farming activities and to examine their level of participation in decision making. The study revealed that the majority of rural women participated 'regularly' in cleaning of animal sheds, preparing milk products, gathering dung, selling milk and milk products, selling eggs/poultry and egg collection. In household management, majority of rural women were 'regularly' engaged in food preparation, looking after all family members, preparing local beverages, cleaning the house, clean-up after meals, washing clothes, child care, fetching water and embroidery. The study found that the level of participation of rural women in decision making was low in animal husbandry activities associated with better financial matter. Most of the rural women were not benefited from existing extension service indicating limited attention towards rural women. It was suggested in the study that maximum attention should be given to rural women to build their capabilities in decision making.

Sharma *et al.* (2014) conducted their study in Raisen district of Madhya Pradesh in the year of 2008-09 at Department of Agricultural Extension, R.A.K. College of Agriculture Sehore (M.P.). The main objective of the study was to ascertain the extent of participation and decision making pattern of farm women in agricultural operations. The study revealed that more number of farm women found to have high level of participation in agricultural operation i.e. (47.50%) followed by the medium participation (33.33%) and low participation (19.17%) in agricultural operations respectively. The study also revealed that the higher number of farm women (58.33%) were observed in low category of decision making which was followed by 22.50 per cent and 19.17 per cent respectively in case of medium and high decision making process. The study also

revealed that the socio economic factors found to influence the agriculture operations and decision making pattern of farm women positively and significantly.

Umeh (2014) did his research work on the role of women in farm and family decision making in Udi L.G.A of Enugu State, Nigeria. Both descriptive and inferential statistical tools were used in data analysis. Result showed that women influenced decisions on the farming activities like sowing/planting, fertilizer applications, marketing of farm products among others. They also took part in non-agricultural farming decisions such as marriage issues, domestic activities, family medical and health issues among others. The result of multiple regression analysis showed a high value of R2 of 78.1% which indicates that about 78.1% change in participation of women farmers in farm and family decision-making was caused by changes in the socio-economic characteristics of the women farmers. The null hypothesis was rejected at 5% level of significance. This shows that the socio-economic characteristics of the women farmers influenced significantly their participation in decision making. The result of factor analysis identified institutional, socio-cultural and financial constraints as hindrances to women full participation in farm and non-farm decision making. It was concluded that empowering women through direct involvement in development and implementation of agricultural policies and projects can enhance their decision-making ability. Necessary recommendations such as legislative changes, formation of functional women groups and reform of land tenure system in favour of women were made among others.

D) Constraints Faced by Women in Agriculture and Allied Activities

Boserup Ester (1970) in her work, emphasized gender as a basic factor in the division of labour prevalent across countries and region. In her epoch-making study 'Woman's Role in Economic Development', Boserup attempts to highlight the myriad

ways in which modernization of agriculture affects women in developing countries. Focusing on Africa, Boserup claims that this process of modernization unavoidably alters the sexual division of labor. She maps out her understanding of the particular problems of women as they are deprived of their previous productive functions and values. Ultimately, Boserup describes this pattern of female deprivation as a significant obstacle to the success of development policies.

Dak and Sharma (1986) carried out a study in four districts of Haryana. It was found that social and institutional factors, particularly caste, status, landholding, education and modernization had adversely affected women's participation in agriculture. Farm mechanization and the level of adoption of improved farm practices had affected female labour participation positively.

Agarwal (1994) in her study analysed the various problems faced by women labour in agriculture and their participation in decision making regarding farm operations. She reveals that women's exclusion from property right in land is a major constraint faced by women. It is one of the main causes of women's low participation in decision making.

Gogoi (1989) in his study on women's knowledge and their participation in farm operations pointed out that farm women faced the problems of domestic work load, lack of social approval, religious beliefs and inadequacy of skill or knowledge in participating in rice production operations.

Fabiyi *et al.* (2007) focuses on the constraints those women farmers faced in farming. The study reports that the women farmer's constraints includes mainly their low economic status, lack of land for farming, credit facilities, costly and late input delivery. Women farmers have contributed immensely to food production, processing and

preservation of foods. So the study suggests serious attention should be paid to their constraints by the policy makers because women are the backbone of agricultural development and food security in Nigeria.

Butt *et al.* (2010) highlight the role of women in agriculture development and their constraints in Depalpur tehsil of Okara district in Pakistan. The study concluded that male dominance, traditional belief systems, lack of access to agriculture extension education services, lack of mobility and technical training, knowledge and skills are the major constraints for female agricultural workers.

Tiwari (2010) conducted a study in four villages of Milkipur block, Faizabad district, Uttar Pradesh which examines the economic and technological constraints facing farm women. The study reveals that lack of necessary inputs available to women farmers at the right time and sufficient quantity, Diesel generally disappears from the market at irrigation and threshing times, lack of special training programmes to develop women's agricultural practices and technological skills, unavailability of viable and compatible technology to farm women, the qualitative degradation of inputs like seeds and fertilizers were the main constraints experienced by the farm women in the study area.

Dommati and Chittedi (2011) in their paper studied the socio-economic conditions of agricultural women labour is Andhra Pradesh. The study was conducted in Karimnagar district. The study revealed that season wise and irrigation facilities are the main factors that determine the employment and wages of agricultural women labour. The female participation rate is more for the category of agricultural labourers and male participation is more in the category of cultivators and other workers.

Girade and Shambharkar (2012) studied about profile of farm women and constraints faced by them in participation of farm and allied activities in Hinganghat

Panchayat Samiti of Wardha district in Maharashtra. The study found that the major constraints in participation of farm women in farm and allied activities were lack of technical knowledge about farming activities, poor economic condition, frequent health problem, secondary status in decision making and burden of family work. It has been observed that the burden of family work was the major constraint faced by majority (82.50%) of the respondents. Lack of technical knowledge about farming activities (57.50%), frequent health problem (50.00), secondary status to women in decision making (45.83%), poor economic condition (41.67%), and working under unfavorable conditions (40.00%) were some of the major constraints faced by women respondents while participating in farm and allied activities.

Rehman *et al.* (2012) conducted a study on Women Participation in Socio-Economic Development in Agriculture Areas of Muzafargarh District in Pakistan. The study found that women were facing certain problems while performing agricultural activities such as bad attitude of owner, problem of getting wages in time, and problem of working in harsh conditions of weather. The study suggested that by providing education female status can be improved and they will be able to finance their families by finding respectable and better earning opportunities.

Agarwal *et al.* (2013) carried out a study on agricultural activities performed by rural women and problems faced by them in Jammu district. The study showed that women are actively engaged in all major agriculture related activities such as ploughing, cleaning and leveling of fields; raising nursery; sowing seeds, transplanting, manure and fertilizer applications, weeding, irrigation etc. The study also revealed that majority of the women suffered from health problem (80%) such as back ache, head ache and fatigue, management problem (71.3%) mainly managing time between farm works and

domestic works, social problems (64.6%) like the traditional veiling problem and between 70-76% of rural women face financial problems ranging from severe to mild on account of both lack of resources and lack of finances.

Siddra *et al.* (2013) conducted a study in district Nankana Sahib of Punjab on rural women's participation and constraints in agricultural activities. The results revealed that that majority of the working women were participating in diverse agricultural activities including sowing, harvesting and picking. Majority of the working women were doing work to increase their family income but they were facing many problems in looking after their children and household chores. Negative attitude of the landlord is found to be one of the main problems. It is suggested that negative stereotype image of working women in rural areas should be changed with the help of mass media.

From the above literatures, it is found that most of the researchers focused on the problems of workers, their participation level, income and the employment situation. But it needs to be mentioned that there is still no systemic studies done in Assam focusing on the income and empowerment of women through their involvement in various agricultural activities. Therefore, the present study is a micro level study to assess the income and decision making capacity of women in agriculture.

1.5 Objectives

The present work has been carried out with the following objectives.

1) To study the socio-economic background of women workers in agriculture in the study area of Assam.

2) To study the nature and extent of participation of women workers in agriculture and allied activities in the study area.

3) To assess the contribution of women workers to the family income from agriculture and allied activities in the study area.

4) To examine the decision making capacity of women workers in agricultural activities.

5) To identify the problems faced by women workers in agriculture.

1.6 Research Questions

On the basis of the objectives mentioned above, the study seeks answers to the following research questions.

1) Do women workers of all farm size contribute from agricultural income towards their family income?

2) Does the participation of women in agriculture empower them to take decisions regarding agricultural activities?

1.7 Study Area

The study has been conducted in Morigaon district of Assam. Out of the 33 districts of Assam, Morigaon district is selected for the study because of the following reasons.

1) Morigaon is one of the rural and agrarian districts of Assam. The rural population of the district is 884557 which constitute 92.34 percent of the total population.

2) The district falls under the Central Brahmaputra Valley agro-climatic zone under the eastern Himalayan region. As such the region is naturally endowed with suitable condition for agricultural production.

3) A large proportion of women in the workforce are engaged in agriculture and allied activities in the district. According to Census 2011, 58.95 percent of the total female workers are engaged in agriculture.

1.8 Methodology

The methodology adopted for the study has been presented under the following sub-heads.

1.8.1 Sampling Design and Size

A three-stage sampling design consisting of random and purposive techniques has been adopted for selecting sample respondents.

In the first stage, three community development blocks out of total seven have been selected purposively on the basis that percentage of women workers in these blocks are higher as compared to other blocks in the district.The blocks of the district are Bhurbondha, Kopili (Part), Mayong, Batadraba (Part), Dolongghat (Part), Moirabari (Part) and Laharighat. Bhurbondha, Mayong and Dolongghat have been selected as sample blocks for the study.

In the second stage, from the District Census Handbook, Morigaon, 2011, a list of all the villages of the selected blocks has been prepared along with the total households. Three villages are selected at random from the list of villages of each block.

Table 1.3: Block and Village Wise Break-up of Sample Households

Name of Blocks	Name of Villages	Number of Respondents Selected
Mayong	Burha Mayong	30
	Hatiotha	30
	Belburi	30
Bhurbandha	Dolloichuba	30
	Naukata	30
	Jorabari	30
Dolongghat	Palahguri	30
	Kapahera	30
	Sonaruguri	30
Total Blocks= 03	Total Villages= 09	Total Sample= 270

In the third or final stage, 30 farm households from each sample village have been purposively selected on the basis that women of those households are involved in agriculture and allied activities. Further 30 farm women workers, one from each household, have been selected as sample respondents on equal sampling basis. The selected sample women are the main farm women workers of the farm households. In case of farm households where the other females are also involved in agriculture along with the respondent, then the average of their labour inputs is taken into account. It has been considered meaningful in order to analyse the contribution of farm women workers per farm per worker from agriculture. Thus, the total sample consists of 270 farm women from 9 villages of 3 three development blocks of the district. The detailed picture of the sample drawn is presented in Table 1.3.

1.8.2 Sources and Collection of Data

The study is based on both primary and secondary data. The primary data for the study are collected by field survey through personal interview method and with the help of structured and pre-tested schedule. Primary data and other relevant information are collected from the sample respondents and also from adult male member or the head of the household where required. The convenience of the sample respondents has been given due consideration.

The necessary secondary data are collected from Government publications, Census Reports, National Sample Survey Organization, Statistical Handbooks, Journals and Publications, Panchayats, Gaon Burah, District Agricultural Department and other relevant sources.

The Reference Period

The primary data for the present study have been collected for the agricultural year July 2014- June 2015.

1.8.3 Analytical Framework

To fulfil the first objective, socio-economic indicators are investigated and analysed through percentage, tabulation, graph, pie and bar diagram.

To analyse the second objective of the study, involvement of sample women workers in different agricultural and allied activities has been investigated. Total hours spent by them on these activities have been collected and converted into mandays assuming one manday consists of 8 hours of work a day. The collected data have been analyzed through tabulation, percentage and average method, pie and bar diagram.

To fulfill the third objective, contribution of women workers to their family income from agriculture is measured by multiplying their average annual working days (in terms of mandays) in agriculture with the prevailing agricultural wage rate for women in the study area. The term 'agriculture' is used in the present study in broad sense including its allied activities of livestock and poultry rearing. The normal working day, i.e., 8 hours a day (=1 manday) is defined as a working day in the present study. Income of women workers from agriculture are taken into account excluding non agricultural income which relates to income from services, business, etc. Agricultural income includes income from cultivation, wage income from agricultural labour and income from animal husbandry.

For the fourth objective, Henry Garrett ranking method is used to analyze various constraints faced by women workers in performing agricultural activities in the study area. It is calculated as percentage score for each rank and the formula is:

$$\text{Percentage score} = \frac{100(Rij-0.5)}{Nj}$$

Where Rij is rank given for i^{th} variable by j^{th} respondent and Nj is number of variables ranked by j^{th} respondent.

With regard to the fifth objective, a decision making index has been constructed to examine the decision making capacity of women in agricultural activities covering 18 types of agricultural activities. Women were asked to indicate the extent of their participation in decision making regarding these activities. Women with no participation in the decision making are given zero score. Score of one is given if women are only consulted about decision. A score of two is given if women's opinion is considered. A score of three is given if women participated actively in final decision making. The

empowerment of women in taking decisions has been calculated through their opinion scores in different agricultural items/areas of decision making. Thus, empowerment of women through agricultural decision making is examined by constructing the decision making index as follows.

Decision Making Index (DMI) = $N_o x0 + N_1 x1 + N_2 x2 + N_3 x3$

Where,

N_o = Number of farm women with no participation in decision making

N_1 =Number of farm women who are only consulted about decision.

N_2=Number of farm women whose opinion is considered.

N_3=Number of farm women who actively involved in final decision.

The level of empowerment of women in agricultural decision making is calculated on the basis of arithmetic mean (X) and standard deviation (σ) of the total DMI or empowerment scores. Respondents obtaining score above $X+\sigma$, below $X-\sigma$ and in between $X\pm\sigma$ are considered to have high, low and medium level empowerment in taking decision regarding agricultural activities respectively.

1.9 Significance of the Study

Rural women's economic contribution to household, farm, off-farm, community and nation is always undervalued and quite often overlooked altogether. Neglect of women's involvement in production process is detrimental to economic development. Much of the labour contributed by them is not usually considered as productive (Singha 1989). Their works are either underestimated or not recorded by the statisticians as well as planners. The ILO, Geneva report (1975) on women power shows that women work

longer hours than men in non-market and market activities, industrial and urban sectors of developing countries and more obviously in rural areas of Africa, Asia and Latin America (Sinha 1989). Many families of rural areas would starve to death if women do not work in the fields for most of days to cultivate for feeding them. Hence it seems inconceivable that the contribution of this nature could be over looked so long.

Increasing women's earning and share to family income has been shown in literature to empower women by strengthening their bargaining power in the household. Empirical evidence shows that women invest more than men in the development of children (World Bank, FAO, IFAD, 2008). Higher levels of employment and earning not only contribute to the economic development but also to the well-being of the family. So, to introduce them as a component in the mainstream development, it is important to understand the contribution women make in agriculture and allied activities.

Various research works on 'women in agriculture' show that the dimension of the subject is vast and deep. In terms of research, very few studies investigating pattern of labour use and income of farm women have been carried out in India in general and in Assam in particular. As the farm women are engaged in market and non-market activities, their contribution to the total family income is not less important. Again it is desirable to know the income derived by female workers from different activities in agriculture and their contribution to the total family income. Thus keeping in view, the dearth of information concerning women's participation in agricultural activities and contribution to farm income, the study in hand is initiated to fill these gaps. In Assam, there are still no systematic studies on income and empowerment of women in agriculture. So there is a need for a micro-level study to analyse the participation of

women in agriculture in rural Assam and to assess their contribution to family income and their involvement in decision making.

This study aims at uncovering the role of women in agriculture and how they fill the gap of income in the family. The output of the study could be significant for decision makers in providing valuable information with regard to the role of women in agriculture, their problems and work load and hence formulate gender sensitive development projects. It will also be useful for formulation of policy relating to the identification of target groups for employment generation schemes. The study is also likely to identify the gaps as well as challenges to gender equality along with possible areas for improvement. And finally it creates awareness among the society and outsiders on the role played by women and give due respect to their contribution.

1.10 Limitation of the Study

The study is limited to the farm women workers of three blocks of Morigaon district of Assam due to resource and time constraints. The study is based entirely on the opinion of the respondents who were mostly functionally literate and less educated. Some respondents hesitate to provide required information according to the interview schedule and also reluctant to spend more time for interview. However, in some cases, through the insistence of head of their families, they provided the information. Further, lack of pucca roads in some villages and absence of accounting habits of the respondents also limited the scope of the study.

1.11 Chapterization

The study consists of seven chapters.

Chapter I: Introduction: This chapter includes the background of the study, statement of the problem, objectives, research questions, methodology, conceptual framework, theoretical framework, review of literature and significance as well as limitation of the study.

Chapter II: Profile of Morigaon District: This chapter presents the profile of Morigaon district which includes its geographical, demographic and agro-economic profile.

Chapter III: Profile of Women Workers: This chapter deals with the socio-economic background or characteristics of sample women workers engaged in agriculture and its allied activities in the study area.

Chapter IV: Women Workers in Agriculture: This chapter analyses the participation of women workers in agriculture and assessment of their income from agriculture. The chapter is divided into two parts explaining participation of women workers in agricultural activities in one part and income of women workers derived from those activities in another part.

Chapter V: Problems in Agriculture: This chapter explains the problems faced by women workers in the agricultural sector. It also includes some suggestions.

Chapter VI: Women Workers in Decision Making: The decision making capacity of women related to various agricultural activities is examined in this chapter. The extent of

participation of women workers in agricultural decision making are examined along with their level of empowerment regarding decision making of agricultural activities.

Chapter VII: Findings, Conclusion and Policy Implications: This chapter consists of findings, conclusion and policy implications of the study.

CHAPTER II

PROFILE OF MORIGAON DISTRICT

Introduction

A profile of the study area narrates the geographic, demographic and socio-economic features of the area under the study. An attempt has been made in this chapter to describe the geographical, demographic and agro-economic profile of Morigaon district including banking, transport, power and other basic amenities.

2.1 Geographical Profile

2.1.1 Location and Area

Assam is one of the North-Eastern States of India and Morigaon is one among the 33 districts of Assam. Morigaon became a full-fledged district on 29th September, 1989 being curved out of the erstwhile Morigaon Civil Sub-Division of Nagaon district.

Morigaon is located in the Central Brahmaputra valley of Assam. The district lies between 26°31 and 26°53 north latitudes and 91°59 and 92°35 longitudes. The district is bounded by the mighty Brahmaputra on the North, Karbi Anglong district, Meghalaya state on the South, Nagaon district on the East and Kamrup (M) district on the West (District Census Handbook, Morigaon, Assam, 2011). The district has a geographical area of 1551 sq. km. It has four urban areas (Morigaon, Bhuragaon, Moirabari and Jagiroad) covering an area of 25.5 sq. km. while the rural area covers 1525.50 sq. km. of

the total area of the district. The district covers 2.02 percent to the total area of Assam. The district has only one Head Quarter sub-division namely Morigaon and five revenue circles namely Morigaon, Mayong, Bhuragaon, Laharighat and Mikirbheta. It has seven development blocks i.e., Bhurbondha, Kopili (Part), Mayong, Batadraba (Part), Dolongghat (Part), Moirabari (Part) and Laharighat consisting of 85 Gaon Panchayats and 632 villages. Morigaon district is the second smallest district of Assam (District Census Handbook, Morigaon, Assam 2011).

2.1.2 Climate and Rainfall

The climate of Morigaon district is sub-tropical with semi dry hot in summer and cold in winter. This region is influenced by South West monsoon in the summer and North East monsoon in winter. Most of the rainfall in the state is received under the influence of the South-West monsoon. March to May is the pre-monsoon period with rainfall about 20 to 30 percent of the total annual precipitation. June to August is the monsoon period with 60 to70 percent annual rainfall when intensity of rainfall is very high. December to February is the post-monsoon period and is characterised by fall in temperature and rainfall with occasional cool breeze. The average annual rainfall of the district is 1770 mm out of which monsoon contribution is 83%. The maximum temperature is 29.5°C (average) while minimum temperature is 17.5°C (average) (Ground Water Information Booklet, Morigaon District, Assam, 2013).

Table 2.1: Average Rainfall (in mm) in Morigaon, 2013

Months	Normal	Actual
January	18.7	0.0
February	24.4	8.2
March	51.6	20.4
April	116.8	62.6
May	169.1	224.2
June	323.9	277.8
July	374.8	394.4
August	308.9	311.2
September	221.4	173.2
October	119.3	97.0
November	19.9	0.0
December	8.2	1.9

Source: Statistical Handbook of Assam 2014.

2.1.3 Soil and Forest

The greater part of Morigaon district is an alluvial plain with numerous rivulets and water ways and dotted with wetlands and marshes. The soils of the district are classified in to three major groups as per their physical, chemical and other qualities. They are – (i) the sandy riverine soils of the north west along the banks of the river Brahmaputra which are chronically flood affected, (ii) the fertile alluvial soil of the central and the eastern parts and (iii) the relatively infertile soil of the hills and the foothills of the south-west region intervening intermittently with fertile alluvial soils affected by flash floods. The major portion of the arable soils of the district is, however, alluvial soils which are mostly loamy and consist of mixture of clay and sand in varying proportion. These soils have the capacity to hold nitrogen rapidly through the cultivation of leguminous crops and easily respond to the use of manure and fertilizer. For these reasons, these soils

support the cultivation of crops mainly paddy and the other crops like pulses, mustard, jute and vegetables.

There are three Reserved Forest in Morigaon constituted under Assam Forest Regulation Act, 1891 namely Sunaikuchi, Khulahat and Bura Mayong and wildlife Sanctuary known as Pabitara, famous for the Indian one-horned Rhinoceros. As per census 2011, the total forest area of the district constitutes only 8.32 percent of its total geographical area which is very low in comparison to national level at 33.3 percent as prescribed in the National Forest Policy of 1988. The forest is rich with variety of tree species used for making furniture, plywood, railway sleepers, electricity poles, etc. A large number of people also depend upon forests for firewood to cook their food and for timber, bamboo, ekra, thatch, jengu, tokopat, nal, khagari, cane etc for house building purpose (District Census Handbook, 2011). The useful tree species found here are Holong, Nahar, Simalu, Sissoo, Teak, Kadam, Gamari etc. There is good scope for forestry development programmes in the district under farm forestry.

2.1.4 Rivers

The Brahmaputra is the main river which flows along the extensive northern boundary of the district. The tributaries of Brahmaputra like Sonai, Sonduba, Morasonai, Moraganga, Kalijam, flow through the northern part and Kopili, Kolong and Killing flow through the southern part of the district. The Killing meets the Kapili at the Matiparbat where from Kapili moves westward. The Kollong joins Kapili at the Jagi Dui Khuti Mukh and from here they jointly fall into the Brahmaputra.

There are several other important tributaries, numerous channels and streams locally called as "jans" and "juries". Besides these channels, there are several 'beels' and marshy lands scattered throughout the district. Among the beels of Morigaon district,

Sunduba, Lali, Kachadhara, Charan beels are prominent. These water sources are important reservoirs of fisheries. The district has a total of 35 registered beel fisheries and 5 river fisheries. A total of seven eco hatcheries are there in the districts.

2.2 Demographic Profile

2.2.1 Population

Population refers to the total number of people residing in a particular geographical area. So, population of Assam and Morigaon district imply the total number of people living in Assam and Morigon. According to 2011 census, the total population in Morigaon district is 957423 consisting of 486651males and 470772 females. In 2001 census, Morigaon had a population of 776,256 of which males were 398,926 and remaining 377,330 were females. The percentage of schedule castes and schedule tribes account for 12.3 percent and 14.29 percent to the total population in 2011 respectively. The population of the district constitutes 3.07 percent of the total population of Assam in 2011 census while this figure was at 2.91 percent in 2001 census. The decadal growth of population during 2001-2011 is 181167 which constitute 23.34 percent while it was 21.35 during 1991-2001.

Following table shows the male-female distribution of population of the district and the state as per census 2011.

Table 2.2: Total Population of Assam and Morigaon District

State/District		Assam	Morigaon
Total	Persons	31205576	957423
	Males	15939443 (51.08)	486651 (50.83)
	Females	15266133 (48.92)	470772 (49.17)

Source: District Census Handbook, Morigaon, Assam 2011.

(Figures in the bracket show percentage of the total population.)

According to 2011 census, male constituted 50.83 percent and female 49.17 percent of the total population in Morigaon. The percentage of male and female is almost similar to the state percentage of male-female.

Table 2.3: Rural-Urban and Male-Female Distribution of Population of Morigaon

Total Rural Population	Number	Percentage	Total Urban Population	Number	Percentage
Persons	884125	92.34	Persons	73298	7.66
Males	449123	92.29	Males	37528	7.71
Females	435002	92.40	Females	35770	7.60

Source: District Census Handbook, Morigaon, Assam 2011.

Table 2.3 shows that the rural and urban population accounted for 92.34 percent and 7.66 percent of the total population of the district respectively.

Out of the total rural population (884125), it is observed that 50.8 percent are male and 49.2 percent are female while 51.2 percent male and 48.8 percent female constituted the total urban population (73298). Block wise distribution of population of the total seven blocks of the district is presented in Table 2.4.

Table 2.4: Block-Wise Break-up of Population in Morigaon District

Block	Total	Male	Female
1.Mayong	309,514	157,612	151,902
2.Lahorighat	250,824	128,603	122,221
3.Moirabari (Part)	126,227	64,508	61,719
4. Bhurbandha	142,500	71,550	70,950
5.Kapili (Part)	44,852	22,286	22,56 6
6.Batadraba(Part)	11,563	5,899	5,664
7.Dolongghat (Part)	42,779	21,400	21,379

Source: Primary Census Abstract (PCA), Morigaon, 2011.

The highest population is recorded in Mayong Development Block and lowest in Batadraba (Part) Development Block. Male population is higher than female population in all the blocks except in Kopili Development Block. Bhurbandha, Kapili (Part), Batabraba (Part) and Dolonghat (Part) block are the rural blocks with zero urban areas.

2.2.2 Density of Population

The density of population is defined as the number of persons per square kilometer (sq. km.).

Table 2.5: Density of Population (Persons per sq. km.)

District/State	2001	2011
Morigaon	500	617
Assam	340	398

Source: District Census Handbook, Morigaon, Assam 2011.

According to 2011 census, the density of population of Morigaon is 617 per sq. km., which is much higher than the state density of population of 398 per sq. km. The population density of Morigaon was 500 per sq. km in 2001 as against the state's figure of 340 per sq. km. The result shows that the population of the district is growing at a very fast rate.

2.2.3 Sex Ratio

The term 'sex ratio' is used to define number of females per 1000 males and it is a good indicator to find the equality of males and females in a society at a given period of time. With regards to sex ratio in Morigaon district, it stands at 967 per 1000 male in 2011 census as compared to 2001 census figure of 946. In 2011 census, child sex ratio

(0-6 Age) is 956 girls per 1000 boys compared to figure of 966 girls per 1000 boys of 2001 census data.

The table below shows the sex ratio of Morigaon district with a comparison to Assam.

Table 2.6: Sex-Ratio as per Census 2011

Total/rural/urban	Assam	Morigaon
Total	958	967
Rural	960	969
Urban	946	953

Source: District Census Handbook, Morigaon, Assam 2011.

The table reveals that the sex ratio is higher in Morigaon as that of the state as a whole. This is true in case of both rural and urban population.

2.2.4 Literacy Rate

Literacy rate is one of the most important indicators of human resource development and social change. In 2001 census report, a person aged 7 and above who can both read and write with understanding in any language is taken as literate. Average literacy rate of Morigaon in 2011 is 68.03 percent compared to 58.53 percent of 2001. Gender wise, the male and female literacy are 71.90 percent and 64.04 percent respectively as per 2011 census and for 2001 census, these figures stood at 65.15 percent and 51.51 percent respectively in the district. The percentage of literates among schedule caste and schedule tribe are 12.31 and 14.29 respectively. Total literates in Morigaon District and Assam with their percentage are shown in Table 2.7.

Table 2.7: Literacy Rate and Literates in Assam and Morigaon District

State/District	Assam		Morigaon	
	Number	**Percentage**	**Number**	**Percentage**
Persons	**19177977**	**72.19**	**539902**	**68.03**
Males	**10568639**	**77.85**	**289698**	**71.90**
Females	**8609338**	**66.27**	**250204**	**64.04**

Source: District Census Handbook, Morigaon, Assam 2011.

As per census 2011, the female literacy rate is lower than that of male both in the state and the district. In Morigaon district female literacy rate is 64.04 against male literacy rate of 71.90. The female literacy rate of the district is also less than the literacy rate of female of the state.

2.2.5 Distribution of Workforce

The work participation rate in Morigaon district is 36.68 percent in 2011 as against 33.9 percent in 2001. The urban work participation rate is 34.03 percent while the same for rural areas is 36.89 percent as per 2011 census. The distribution of work force in the district is shown in Table 2.8.

Table 2.8: Male- Female Distribution of Workers

Location	**Persons/Male /Female**	**Status of Workers**							
		Total Workers	%	Main Workers	%	Marginal Workers	%	Non-Workers	%
Morigaon	Persons	351148	36.68	260968	27.26	90180	9.42	606275	63.32
	Males	257984	53.01	221150	45.44	36834	7.57	228667	46.99
	Females	93164	19.79	39818	8.46	53346	11.33	377608	80.21
Assam	Persons	11969690	38.36	8687123	27.84	3282567	10.52	19235886	61.64
	Males	8541560	53.59	7034642	44.13	1506918	9.45	7397883	46.41
	Females	3428130	22.46	1652481	10.82	1775649	11.63	11838003	77.54

Source: District Census Handbook, Morigaon, Assam 2011.

Table 2.8 indicates that there is not much difference between the total and male-female work participation rate of Assam and Morigaon district. Out of the total 351148 workers, the percentages of main workers, marginal workers and non-workers are 27.26, 9.42, and 63.32 respectively in the district. Again of the main workers, males constitute 45.44 percent, followed by 8.46 percent females. But the percentage of female marginal workers (11.33%) is higher than that of male marginal workers (7.57%). Main workers, marginal workers and non- workers constitute, more or less, of the same percentage in the district and state level.

Table 2.9: Distribution of Workers by the Industrial Category

Location	Persons/Male /Female	Category of Workers (Main &Marginal)							
		Cultivators	%	Agricultural Labourers	%	Workers in Household Industry	%	Other Workers	%
Morigaon	Persons	157612	44.88	75984	21.64	14346	4.09	103206	29.39
	Males	130143	50.45	48529	18.81	5073	1.97	74239	28.78
	Females	27469	29.48	27455	29.47	9273	9.95	28967	31.09
Assam	Persons	4061627	33.93	1845346	15.42	491321	4.10	5571396	46.55
	Males	3099763	36.29	1129210	13.22	205734	2.41	4106843	48.08
	Females	961864	28.06	716136	20.89	285577	8.33	1464553	42.72

Source: District Census Handbook, Morigaon, Assam 2011.

The above table shows that in Morigaon district, among the workers, 50.45 percent (130143) are male and 29.48 percent (27469) are female cultivators, while among agricultural labourers, 18.81 percent (48529) are male and 29.47 percent (27455) are female. In the category of household and other workers, the percentage of female workers is higher than the male workers. Out of the total workers of the district, 44.88 percent are cultivators, 21.64 percent are agricultural labourers, 4.09 percent are in

household industries and 29.39 percent are other workers. Thus about 67 percent working population are engaged directly in agriculture (i.e. cultivators and agricultural labourers) in the district. The percentage of both male and female as cultivators and agricultural labourers is higher in the district compared to that of the state.

Table 2.10: Distribution of Workers by the Residence and Sex

District/ State	Persons/Male /Female	Rural Workers	%	Urban Workers	%
Morigaon	Persons	326204	92.91	24944	7.1
	Males	237170	91.91	20814	8.07
	Females	89034	95.57	4130	4.43
Assam	Persons	10368283	86.62	1601407	13.38
	Males	7257852	84.97	1283708	15.02
	Females	3110431	90.73	317699	9.27

Source: Census of India, Assam, 2011.

Table 2.10 reveals the number of total workers in the district by sex with rural and urban break up. Out of the total workers of the district; rural workers constitute 92.91 percent as compared to only 7.1 percent urban workers. Among the female workers, as high as 95.57 percent are the rural female workers and only 4.43 percent are urban female workers. Thus it is clear from the table that the work participation rate is much higher in the rural than the urban areas. The data clearly indicates that the overall pattern of rural-urban distribution of workforce in the district is not much different from that of the scenario of the state.

The total number of non-workers in Morigaon is 606275; out of which 377608 are rural non-workers and 48354 are urban non-workers. The percentage of rural and urban non workers to the total population is 39.44 and 5.05 respectively.

2.3 Agro-Economic Profile

The economy of Morigaon district is rural agrarian with low rate of urbanization. The district falls under the Central Brahmaputra Valley agro climatic zone in the Eastern Himalayan region. As such, the region is naturally endowed with suitable conditions for agricultural production especially paddy. Agriculture is the predominant economic activity in the district and more than 80 percent of people depend directly or indirectly on it for their livelihood. It is not only the main source of employment, income and food for majority of the rural population, but also the main culture for rural families in the district. Rain fed cultivation of single paddy crop continues in most of areas of the district. However with the help of irrigation facilities like shallow tube wells, high yielding variety of seeds and tractors have made double cropping possible. Both Rabi and Kharif cropping is practiced in the district. The Kharif crops which cover most of the cropped area include Sali paddy, Bao paddy and jute. During Rabi season, mustard (oil seeds), pulses mainly black gram, wheat, early-ahu,(in some areas), Boro paddy, potato and winter vegetables occupy most of the cropped area. The staple food of the people of the district is rice. The farmers mainly depend upon cultivation of wet paddy. Among the cash crops jute is grown on the low lying areas on the bank of the Brahmaputra.

2.3.1 Land Utilization

Land utilization in a region is one of the most important factors as the production and productivity of different crops mainly depend upon the availability of land or the distribution of land among different crops. The total cropped area and net area sown of the district constitute 80.5 and 57.96 percentage of the total geographical area respectively witnessing a low cropping intensity of 138.90 percent (Source: Statistical Handbook, Assam 2014). Due to increase in developmental activities in recent years,

more and more land are being used for industrial, housing, transport, recreation purposes etc. resulting an increase in the area put to non- agricultural uses. Forest covers only 8.32 percent of total geographical area and at present days which is inadequate to maintain the ecological balance of the district as per National Forest Resolution of 1952. The following table shows the land use pattern of the district.

Table 2.11: Land Use Pattern in Morigaon (Area in hectares)

Total geographical area	158765
Forest	13207
Area not available for cultivation	31704
Other uncultivable land excluding fallow land	13480
Fallow land	8363
Net area sown	92011
Total cropped area	127811
Area sown more than once	35800
Cropping intensity	138.90

Source: Statistical Handbook of Assam 2014.

2.3.2 Land Holdings

The term 'land holding' is defined as the land which is used wholly or partly for agricultural production and is operated as one technical unit by one person alone or with others, without regard to the title, legal form, size or location (Agricultural Census 2005-06). The size of land holdings influences the stage of agricultural development in any region. Large number of small holdings in a region is a sign of economic backwardness. In Morigaon district, the preponderance of small and marginal type of land holding which is increasing due to fraternization and nuclearization of farm families also affects

the land use pattern by the farmers. Table 2.12 shows the number and area of holding by the different groups classified on the basis of their land holding.

Table 2.12: Number and Area of Holdings (in hectares) by Size Groups

Size Groups (in hectares)	Number	%		Area	%	
Marginal(below 1.0)	68711	68.62	87.67	25484	27.72	57.55
Small (1.0-2.0)	19086	19.06		27416	29.83	
Semi-medium (2.0-4.0)	9925	9.91		26114	28.41	
Medium (4.0-10.0)	2383	2.38	12.33	11938	12.99	42.45
Large (10.0 and above)	38	0.04		965	1.05	
All Classes	100143	100		91917	100	

Source: Agricultural Census 2010-11.

It is clear from the table that large and medium farm size groups constitute only 12.33 percent of the total holders, but they possess 42.45 percent of the total area of land holding. Though the marginal and small landholders constitute as large as 87.67 percent of total holders, they have only 57.55 percent of total land under their possession. The result indicates the predominance of small and marginal farmers against very less number of large and medium farmers in agriculture.

Table 2.13: Total Holdings and Area Operated

Agricultural Census	Number of Holding	Area Operated (in hectares)
2000-01	162329	101682
2005-06	107296	92012
2010-11	100143	91917

Source: Agricultural Census 2000-01, 2005-06 and 2010-11.

The above table shows the total number of holdings of all size groups and total area operated by them. It is observed from Agricultural census data that there is a declining trend of both number of holdings and the land used for agricultural operation.

The average size of holdings by the different farm size groups shown in Table 2.14 reveals that average size of large holdings is increasing continuously since 2000-01 to 2010-11. But the large farmers constitute a very small proportion of the total land holders as compared to the large number of small farmers of the district.

Table 2.14: Average Size of Holdings by Size Group in 2000-01, 2005-06 and 2010-11

Size Groups (in hectares)	2000-01	2005-06	2010-11
Marginal(below 1.0)	0.22	0.40	0.37
Small (1.0-2.0)	1.16	1.11	1.44
Semi-medium (2.0-4.0)	2.63	2.60	2.63
Medium (4.0-10.0)	5.12	4.96	5.01
Large (10.0 and above)	17.84	18.03	25.42
All Classes	0.63	0.86	0.92

Source: Agricultural Census 2000-01, 2005-06 and 2010-11.

2.3.3 Cropping Pattern

Cropping pattern means the proportion of areas devoted to different crops at a particular point of time. By and large, the cropping pattern in Morigaon is similar to that of other districts of Assam. Food crops occupy an overwhelming proportion of the total cropped land. Paddy is the major crop grown in the district. All the three types of paddy, that is, autumn, winter and summer are cultivated in the district, amongst which production of winter paddy covers maximum area of the total cultivable area of the

district. The following table gives a clear picture of cropping pattern of major crops of Morigaon district.

Table 2.15: Cropping Pattern in Morigaon District, 2012-13

(Area in hectares)

Name of Crops	Area (in hectares)	% to Total Cropped Area
Autumn Paddy	3645	2.85
Winter Paddy	39830	31.16
Summer Paddy	37729	29.52
Jute	6345	4.96
Rape and Mustard	7057	5.52
Wheat	3800	2.97
Matikalai (Black gram)	820	.64
Potato	1421	1.11
Sugarcane	1243	.97
Masur	627	.49

Source: Directorate of Economics and Statistics, Assam.

(The Report prepared under 13thFinance Commission Grants, 2013-14).

2.3.4 Cropping Intensity

Cropping intensity is the ratio of net area sown to the total cropped area. It refers to raising a number of crops from the same fields during one agricultural year. One of the important features of agriculture in Morigaon is low cropping intensity. The traditional habit of keeping the crop fields fallow till the next winter paddy crops still persists in the district mainly because of low irrigation facilities. Double or multiple cropping areas are very less resulting in low cropping intensity in the district. In the year 2010-11, 37.4 percent of the net area sown is put under double or multiple cropping, giving a cropping intensity of 137.4 percent. The cropping intensity has slightly increased to 138.9 percent

in 2012-13 which is still low as compared to Assam with 148.5 percent. Net cropped area of Morigaon district is 92011 hectares and the area sown more than once is 35800 hectares. A large part of the total cultivable area in the district is mono-cropped. The intensity of cropping can be increased mainly through extension of irrigation facilities, protection from drought and flood and application of manure or fertilizer to ensure cultivation throughout the year.

2.3.5 Irrigation

Agricultural development depends a great deal on the availability of adequate and assured irrigation facilities. Assured irrigation especially during winter months is an imperative need for the optimum utilization of chemical fertilizers and HYV seeds. Irrigation also enables diversification of crop. Considering the uncertainties in the production of kharif crops due to flood and high rainfall, the Agricultural Department of Morigaon district has given more emphasis on the Rabi crops by assigning priority to develop irrigation facilities through installation of Pump Sets (Shallow Tube Well and Low Lift Pump). Irrigation by way of Shallow Tube Wells (STWs) and Low Lift Pumps (LLPs) are considered to be efficient methods of water utilization for growth of crops under Minor Irrigation Projects in the district. The ground water development is mainly through STWs fitted with diesel engine pumps and surface water utilization through small scale lift irrigation scheme involving LLPs. Irrigation potential created through government irrigation schemes cover 15943 hectares under minor irrigation scheme till 2011-12.

Table 2.16: Area Irrigated in Morigaon District 2011-12 to 2013-14

(Area in hectares)

Year	Gross Irrigated Area			Net Irrigated Area
	Kharif	Rabi and Pre-Kharif	Total	
2011-12	245	874	1119	874
2012-13	225	818	1043	818
2013-14(P)	716	797	1513	797

Source: Handbook Statistical of Assam 2012, 2013 and 2014. (P- Provisional)

In the above table, year-wise and crop-wise irrigated area is shown. There is no uniform trend seen in the year-wise as well as crop-wise irrigated area in the district. Irrigated area under Kharif crops in 2013-14 is 716 hectares which is much more in comparison to the year 2011-12 i.e., only 245 hectares. Similarly the irrigated area under Rabi crops in 2013-14 is 797 hectares whereas in 2011-12 it was 874 hectares. Improved irrigation facilities will reduce the dependence of farmers on rain-fall for their farm activities in the district. Though the district has a vast potential, irrigation facilities based on the ground water availability has remained low.

2.3.6 Fertilizer

Fertilizer is regarded as one of the most essential inputs for increasing the agricultural production. However, consumption of fertilizer in Morigaon district is still low. The total consumption of NPK fertilizer in the district and in Assam is 9248.19 tonnes and 273029.84 respectively in 2013-14. The season wise variation of consumption of fertilizer is shown in the table below.

Table 2.17: Consumption of Fertilizer (in tones), 2013-14

District /Assam	Kharif				Rabi				Per Hectare Consumption (Kg)
	N	P	K	Total	N	P	K	Total	
Morigaon	2690.41	538.50	1111.45	4340.36	2273.73	819.64	1814.46	4907.83	72.36
Assam	68405.54	18464.20	33319.30	120189.04	82845.15	23236.62	46759.05	152840.82	65.41

Source: Statistical Handbook of Assam 2014 (N-Nitrogen, P-Phosphorous and K-Murate of Potash).

The consumption of fertilizer in the district in terms of nutrient (NPK) per hectare is higher than the State average consumption. The reason behind the lesser consumption of fertilizer generally in kharif season is that the farmers are reluctant to use it fearing monetary loss due to heavy rainfall and flood. Moreover, disruption of transport movement mainly due to damaged by flood in the district, fertilizer cannot reach destination in time for delivery to farmers.

2.3.7 High Yielding Variety (HYV) Seeds

Improved seeds are one of the components of the improved agricultural practices. The use of HYV seeds, particularly in respect of paddy, is steadily gaining popularity in the district. The area under HYV of rice increases year after year but productivity fluctuates. According to the Agricultural Department, increasing concentration of area under HYV rice assisted to increased production of rice in the district vis-à-vis put additional impetus for enhancing productivity and farm income. Considering the productivity, farmers mainly prefer the seed of HYV rice viz. Masuri, Ranjit, Suna masuri and Jaya in the district.

Table 2.18: Area under High Yielding Variety of Rice, 2013-14 (Area in hectares)

District/State	Autumn Rice	Winter Rice	Summer Rice	Total
Morigaon	1600	30222	23071	54893
Assam	142931	1222482	223940	1589353

Source: Statistical Handbook of Assam 2014.

Total area under HYV of rice in Morigaon and Assam presented in Table 2.18 shows that area under the use of HYV seeds in case of winter rice is highest followed by summer and autumn rice both in the district and the state.

2.3.8 Livestock and Poultry

Livestock and poultry farming are common practices in the rural households of Morigaon district. As per 18th Livestock Census of 2007, the district has different types of livestock including cattle, buffaloes, sheep, goats, pigs, horses, fowls and ducks.

Table 2.19: Total Livestock and Poultry Population as per Livestock Census of 2007

District	Cattle	Buffaloes	Sheep	Goats	Horses and Ponies	Pigs	Fowls	Ducks
Morigaon	311953	14276	11462	123467	213	29963	482723	305530

Source: Statistical Handbook of Assam 2014.

In Morigaon district, traditional economy depending primarily on agriculture provides a big source of income to the people for their livelihood. People are rich in traditional activities and prefer their traditional job. Cattle and Goats are very common domestic animals for most of the households of the district. Tribal and other weaker sections of the society are traditionally involved in pig rearing in the district. The poultry

production in district is mainly '*Desi*' (local) bird oriented and in the hands of the rural people who rear mostly the local birds mainly chicken and ducks. Commercial broiler farming has been taken by only a few farmers in the district (Potential linked credit plan 2006-2007, Morigaon district, Assam).

2.3.9 Plantation and Horticulture

The district has vast potential for development of plantation and horticultural crops. There has been an impressive growth of horticultural crops in the district in recent years. Rubber cultivation is an emerging activity in the district for which endeavour is to be made by the Rubber Board. Besides rubber, the District Agricultural Department has identified coconut, banana, jack fruits, lemons, areca nut and black pepper as some of the important horticultural crops of the district. Farmers have shown interest in developing rubber plantation in the district. The area under rubber cultivation is 379.32 hectares and production is 111.81 metric tonnes in 2013-14 which was 395 hectares and only 45 metric tonnes in 2011-12 (Statistical Handbook of Assam 2012 and 2014). The State Government is in the process of preparing a state policy with a view to achieving self-reliance and rural prosperity. The broad thrust areas of the policy are food security and diversification of agriculture through development of horticulture and food processing, agricultural marketing and agricultural credit flow.

2.3.10 Sericulture

Morigaon enjoys the reputation of being the right place for producing good quality of Eri cocoons and its fabric. Since the feed stock is abundantly available, the district has very good potential for the development of Eri culture in particular. According to Economic Survey of Assam 2013-14, there are 214 sericulture villages in the district engaging total of 11564 families in the production of Eri, Muga and Mulberry as against 10060 families by 172 villages in 2011-12. Sericulture plays an important role

in providing subsidiary income to the rural people of the district. Most of the rural women are actively engaged in this activity during agricultural off season.

2.3.11 Productivity in Agriculture

It is observed that though Morigaon district is endowed with suitable conditions for attaining high agricultural productivity, it has not attained high level of productivity due to many impediments. Agriculture in the district mainly depends upon nature as such it suffers loss in year of excessive rainfall due to flood and fails in year of drought. With the increase of population density, there is a need for expansion of land for agricultural practices. As there is not much scope for expansion of agricultural land, the only way to enhance production is through proper intensive use of land. But the low cropping intensity of the district implies that agricultural production cannot keep pace with its growing demand due to increase in population. Moreover, the agricultural productivity of the district has shown a great degree of variability over the years. The following table shows the area, production and price per quintal of major crops in Morigaon during the year 2003-04 and 2012-13.

Table 2.20: Area, Production and Price of Major Crops of Morigaon District

Name of Crop/Year	2003-04			2012-13		
	Area (in Hect.)	Production (in Tonnes)	Price (in Rs/Qtl.)	Area (in Hect.)	Production (in Tonnes)	Price (in Rs./Qtl.)
Winter Paddy	36450	85780	718.93	39830	119146	875.00
Autumn Paddy	11000	4460	463.50	3645	9122	855.55
Summer Paddy	36000	104774	437.90	37729	179771	855.00
Jute	2800	25760	1080.00	6345	61861	1582.90
Rape & Mustard	6000	2004	1751.60	7057	3311	2340.00
Wheat	4000	3472	752.50	3800	4297	1223.20
Matikalai	600	236	1221.40	820	510	3710.00
Potato	650	3666	600.00	1421	10037	1322.00

Source: Directorate of Economics and Statistics, Assam (The Report prepared under 13th Finance Commission Grants, 2013-14).

During the period, winter paddy accounted the highest for both area and value. In case of summer paddy, both area and value are in increasing trend while autumn paddy shows a very decreasing trend in area though its price has increased during this period. However, for other crops, areas under jute, rape & mustard, black gram, potato are increasing while wheat cultivation has decreased. From the above table it is clear that the area, production and price of major crops in the district are not consistent. It showed frequent ups and downs mainly due to vagaries of natural factors like flood, draught, storm etc. and inadequacy of agricultural inputs.

2.3.12 Characteristics of Agricultural Labour Market

The gender segregated data of rural workforce reveals the characteristics of agricultural labour market in Morigaon district. The Table 2.21 shows the working status of rural population.

Table 2.21: Distribution of Rural Workers in Morigaon District

Total Rural Workers	Rural Main Workers			Rural Marginal Workers		
	Total	Male	Female	Total	Male	Female
326204	239563 (73.44)	202395 (62.05)	37168 (11.39)	86641 (26.56)	34775 (10.66)	51866 (15.90)

Source: Census of India 2011, Assam.

(Figures in the bracket represent percentage to the total rural workers.)

It is evident from Table 2.21 that 62.05 percent of the total rural workers are male main workers while only 11.39 percent are female main workers. In case of proportion of rural marginal workers to total rural workers, 10.66 percent are male against 15.90 percent female workers.

Table 2.22: Percentage Distribution of Rural Main and Marginal Workers by Sex

Rural Main Workers (%)		Rural Marginal Workers (%)	
Male	Female	Male	Female
84.49	15.51	40.14	59.86

However, out of 239563 rural main workers, 84.49 percent are male and only 15.51 are female whereas out of 86641 rural marginal workers, 59.86 percent are female against 40.14 percent of male workers. This indicates that female workers in the district mainly occupy their status as rural marginal workers.

Table 2.23: Category Wise Distribution of Main and Marginal Rural Workers

Rural Main Workers				
Category	**Cultivators**	**Agricultural Labourers**	**Household Industry**	**Other Workers**
Male	119084	33115	3270	46926
Female	14326	6218	2894	13730
Rural Marginal Workers				
Category	**Cultivators**	**Agricultural Labourers**	**Household Industry**	**Other Workers**
Male	9533	14666	1281	9295
Female	12978	20877	6102	11909

Source: Census of India 2011, Assam.

Out of the total female rural main workers, number of cultivators 14326 (38.54%) is higher than that of agricultural labourers 6218 (16.73%) whereas in case of female

rural marginal workers, number of agricultural labourers 20877 (40.25%) is higher than cultivators 12978 (25.02%).

Table 2.24 shows a detailed picture of the agricultural labour market in Morigaon district. It reveals that in all the seven blocks male workers are much higher than female workers as rural main workers. The percentage of female main workers is exceptionally very low, i.e., only 8.43 percent in Moirabari block. This is due to the fact that the block is dominated by Muslim population and Muslim women are traditionally restricted to do works in fields. As rural marginal workers, women outnumbered men in all the blocks. In Mayong, Bhurbandha and Dolongghat (Part) blocks, percentage of rural female workers are higher as compared to that of rural female workers in other blocks of the district. This is also the reason behind the selection of these blocks as sample area for the present study.

Table 2.24: Block Wise Distribution of Rural Workers

BLOCKS	Persons	Total Workers	Percentage (%)	Main Workers	%	Marginal Workers	%
1.MAYONG	Male	78095	67.12	65031	81.20	13064	36.03
	Female	38248	32.88	15056	18.80	23192	63.97
2.LAHORIGHAT	Male	63936	77.11	56463	85.82	7473	43.63
	Female	18984	22.89	9329	14.18	9655	56.37
3.MOIRABARI (PART)	Male	30405	91.57	27639	94.08	2766	72.33
	Female	2798	8.43	1740	5.92	1058	27.67
4. BHURBANDHA	Male	39043	68.18	31892	81.57	7151	39.36
	Female	18223	31.82	7205	18.43	11018	60.64
5.KAPILI (PART)	Male	11697	69.20	9815	82.77	1882	37.30
	Female	5206	30.80	2043	17.23	3163	62.70
6.BATADRABA (PART)	Male	2980	86.82	2419	94.53	561	70.48
	Female	375	11.18	140	5.47	235	29.52
7.DOLONGGHAT (PART)	Male	11014	67.93	9136	84.66	1878	34.63
	Female	5200	32.07	1655	15.34	3545	65.37

Source: Primary Census Abstract (PCA), Morigaon, 2011.

2.3.13 Agricultural Machinery and Implements

Among the various types of agricultural implements, the households in Morigaon district mainly possess traditional implements like plough and bullock. More than 50 per cent of the households utilize traditional methods of cultivation using plough and bullocks. The important modern inputs for agricultural growth are the improved farm machineries and implements like iron plough, tractors, harvesters, oil engines and electric pumps. The term Farm Mechanization refers to a range of mechanized farming activities which are helpful in increasing productivity. Farm mechanization is an important element of modernization of agriculture. However, the number of diesel operated tube wells, tractors and sprayer machines available for the use of farmers are very less in the district. Although, the most common agricultural implement being used by the cultivators of the district is the plough with animal power, there is a decline in the demand of such ploughs in the recent past. Farm mechanisation has not made much progress in the district because of preponderance of small land holdings and predominance of labour intensive culture.

2.4 Infrastructural Facilities and Connectivity

An adequate infrastructure facility is the backbone of economic development of a region. Modernization of agriculture along with spread of literacy in rural areas is not possible without good infrastructure facilities like good road and communication system, bank services, supply of electricity, adequate marketing facilities, timely supply of inputs, adequate research and extension service etc. Of all the infrastructure facilities, transport and communication, power and energy and banking are considered essential sectors.

(i) Transport and Communication

Morigaon district mostly relies on road transport. Water and air transport has not been developed in the district. Railway connectivity is also not sufficient to meet the transport need of the public. Nearest railway station is Jagiroad railway station and railway junction is at Chaparmukh which are about 19.81km. and 18.35 km. respectively from Morigaon town. The National Highway No-37 runs through the district touching south part of the district. Considering the road transport, the total road length in the district is 1150 km. in 20013-14 out of which 909 km. is rural road, 13 km. urban road, 86 km. major district road and 142 km. state highway (Statistical Handbook of Assam 2014).

(ii) Power

Morigaon district is lagging behind in terms of power supply. Out of 598 total inhabited villages, 484 are electrified leaving more than hundred villages without electricity. It does not possess any power for generation of electricity and has to depend entirely on supply from outside the district. The responsibility of co-ordinate development of generation, transmission and distribution of power in the district vests with the Assam State Electricity Board. The percentage of the total electricity consumed for agricultural purpose in the district is very low. But regular supply of electricity is essential for the use of modern technology and also necessary to energize pump sets for irrigation which are essential for agricultural development of the district.

(iii) Banking

Banking system plays an important role in stimulating the development process of an economy. In Morigaon district, the total number of bank agencies stands at 49 and

total number of bank branches are 75 as on March 2014. The district has 40 reporting offices of Commercial Banks with a total deposit of Rs. 802 crores as against Rs. 481crores as outstanding credit. Similarly total deposits in the Regional Rural Banks are 142 crores and credit is 146 crores. The present Credit Deposit Ratio (CDR) is 60.0, in case of rural credit which is not much encouraging (Source: Economic Survey Assam 2014-15). The existing situation of rural credit in Morigaon reflects further opportunity on credit availability for productive purposes on strategic commitments. The total number of banks and their branches in the district are as follows.

Table 2.25: Banking Service in Morigaon District

Agency	No. of Banks	No. of Brances		
		Rural	Urban	Total
Commercial Bank	18	23	8	31
Regional Rural Bank	1	12	1	13
State Cooperative Bank	1	1	1	2
PrimaryAgricultural Cooperative Society	29	29	-	29
All Agencies	49	65	10	75

Source: Potential Linked Credit Plan, Morigaon: 2015-16, NABARD.

(iv) Basic Amenities

The standard of living of the people is also judged on the availability of certain basic community institutions in the society along with easy access to them. Safe drinking water facility, social security, facilities for basic education and health etc. are some of the important elements of these basic requirements. For health service, the district has only one civil hospital, 23 primary health centres (PHCs), 2 community health centres and 123 sub centres. Considering the size and density of population, the government health

care service providers are quite inadequate in the district. In case of educational facilities too, the infrastructure for primary education is though considerable, but for secondary and higher education, especially for technical education, it is not satisfactory. There are only 36 higher secondary schools and 16 junior colleges, 6 degree colleges besides one B. Ed. (Bachelor of Education) college. Thus the district is lagging behind in terms of basic amenities. For sustainable development and raising living condition of the masses, infrastructure facilities should be developed further.

Conclusion

The economy of Morigaon is predominantly agrarian with low pace of industrialization. Agriculture is the main stay of the people. Farming activities mainly depend on nature and practiced by traditional methods. Agriculture suffers loss in year of excessive rainfall due to flood and fails in year of drought. Ground water is the main source of irrigation. The district is educationally and industrially advancing slowly due to lack of proper infrastructure. The study finds that the infrastructural facilities and connectivity of the district are also not up to the mark to meet the requirement of the people. Based on this brief profile of the district, it may be concluded that Morigaon has been suffering from various deficiencies related to almost all the areas of socio-economic progress. Proper assessment of the deficits is needed for assuring smooth growth process in the district.

CHAPTER III

PROFILE OF WOMEN WORKERS

Introduction

The present chapter deals with the socio-economic profile of sample women workers engaged in agriculture and allied activities in the study area. The socio-economic conditions play an important role in characterizing the social life, attitude and behavior of an individual. People belonging to different socio-economic background are likely to perceive various social aspects differently having different impact upon their behavior and activities. Therefore, it is essential to analyze the socio-economic profile of farm women which has an important bearing on their activities and attitude. The socio-economic background of the respondents will provide an insight into the pattern of their labour use in agriculture. .

3.1 Age

Age has an impact on sociological behavior of the individual. It plays an important role in the participation of women in agricultural activities and decision making to a large extent. Age is here referred to as the completed years of the respondents at the time of investigation. The age of the respondents is categorized into three groups as followed by Afzal (2009) and presented in Table 3.1.

Table 3.1: Age of the Respondents

Age (years)	No. of Respondents	Percentage
Up to 30 years (Young)	71	26.30
Between 31-50 years (Middle)	154	57.04
Above 50 years (Old)	45	16.66
Total	270	100.00

Source: Field survey.

Table 3.1 reveals that most of the respondents (57.04%) belonged to middle age group followed by 26.30 percent and 16.66 percent of the respondents in young and old age categories respectively. The study shows that participation of women above 50 years in agriculture is lower than that of young and middle age groups. Women of this age group are found to be less energetic than the other groups and they preferred to manage household and take care of their grandson/daughter allowing their daughters-in-law and other members to work in the fields. It has been found that major proportion of the respondents belonged to the most active working age category fulfilling the objective of the study.

3.2 Education

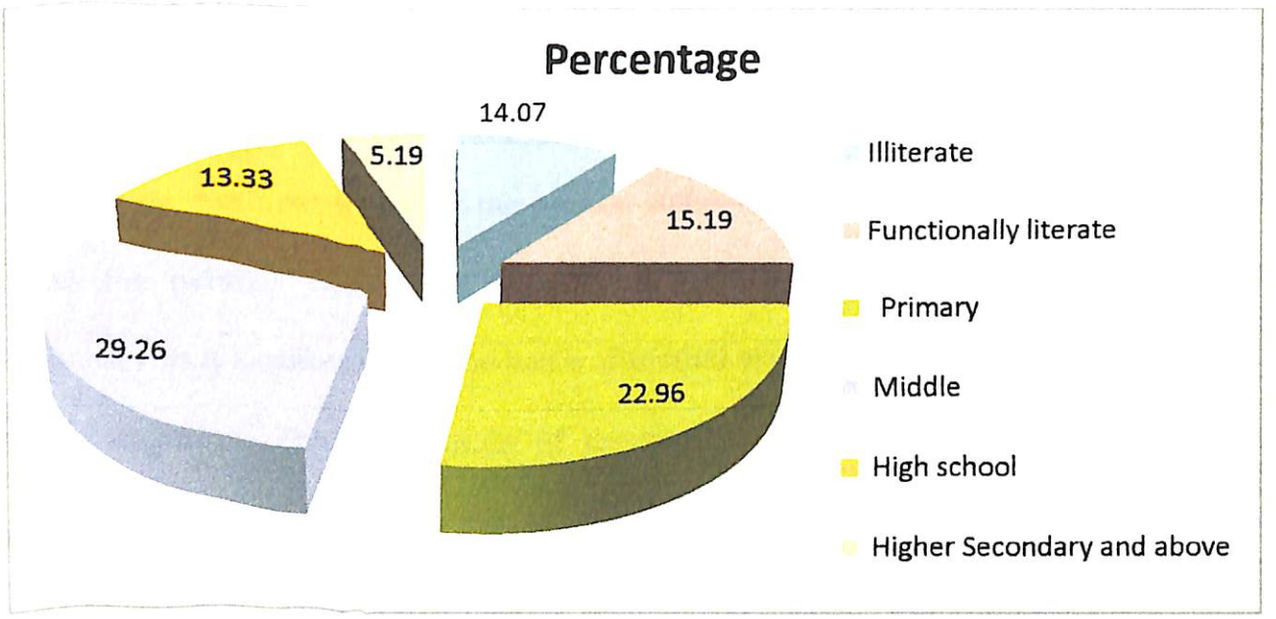
Education is a process that brings desired changes in the behavior of an individual. The level of literacy has a significant role in decision making and active participation of any enterprise. Education has a great impact on women's status in the society. The classification of respondents according to their educational qualification is presented in Table 3.2 and their percentage is shown by the pie diagram.

Table 3.2: Educational Level of the Respondents

Level of Education	No. of Respondents	Percentage
Illiterate	38	14.07
Functionally literate	41	15.19
Primary	62	22.96
Middle	79	29.26
High school	36	13.33
Higher Secondary and above	14	5.19
Total	270	100.00

Source: Field survey.

Figure 3.1: Percentage of Respondents According to their Level of Education



It is evident from the above data that the majority i.e. 29.26 percent of the respondents were educated up to middle school followed by 14.07 percent illiterate, 15.19 percent functionally literate, 22.96 percent up to primary level and 13.33 percent up to high school, but could not complete high school education. Only 14 respondents were matriculate and went to higher secondary school and 4 of them completed higher secondary level education. It is found that nobody possessed any graduate, post-graduate

or technical education degree. This shows that the level of education of farm women is not satisfactory. The scenario of education in the study area is worth taking into consideration of the government. Illiteracy leads towards ignorance and ignorance leads to poverty (Iftikar 2010). Though the literacy rate among the sample women is found higher (70.7%) than the female literacy rate (64.04%) of the district, it is still less than the male literacy rate (71.90%) of the district as per 2011 census. Moreover the percentage of female educated up to high school and above it, is only 18.52 percent. Thus the results of the study necessitate designing of plans for the enhancement of female literacy and to minimize the female drop out in higher levels of education in the study area.

3.3 Marital Status

Marriage is one of the important social institutions. The attitudes and perceptions of a person can also differ by the marital status of the persons because marriage might make the persons little more responsible and matured in understanding and giving responses to a situation. On the basis of marital status, respondents were classified into four categories. The distribution of respondents according to their marital status is presented in the table below.

Table 3.3: Marital Status of the Respondents

Marital Status	No. of Respondents	Percentage
Single or unmarried	00	00
Married	236	87.41
Widow	32	11.85
Divorced/Separated	02	0.74
Total	270	100.00

Source: Field survey.

Table 3.3 shows that the majority (87.41%) of the respondents was married, 11.85 percent was widows and 0.74 percent was separated. Among the respondents there were no divorced or single or unmarried women. The data implies that maximum of the farm women workers are married women playing the dual role of home maker and worker.

3.4 Size of Family

Family size refers to the number of persons living together in a single household with a common kitchen. It is an important indicator for economic growth and orientation of respondents for family planning adoption and to improve their socio-economic status. The size of the family of the respondents was classified into three sizes as normal (families having up to 4 members), medium (families having 5 to 7 members) and large (families having above 7 members). The total number of family members covered by the survey was 1652 comprising 245 members of normal, 718 members of medium and 689 members of large size family group. The respondents according to their family size and average size of the family are shown in Table 3.4.

Table 3.4: Distribution of Respondents by Family Size

Size of Households	Number of respondents	Percentage of Respondents	Number of family members	Average size of the family
Normal (up to 4 members)	73	27.04	245	3.36
Medium (5-7 members)	121	44.81	718	5.93
Large (above 7 members)	76	28.15	689	9.07
Total	270	100.00	1652	6.12

Source: Field survey.

The above table reveals that for the entire sample, average size of the family was 6.12. The highest number of respondents was found in the size of 5-7 family members which constituted 44.81 percent. 27.04 percent of respondents were from normal and 28.15 percent from large families.

3.5 Type of Family

Family is the basic social unit in the socialization process of an individual. The type of family in which an individual lives has a great influence on his personal and social life. The family type of the respondents is divided into two groups- nuclear and joint. Nuclear family system is the family where only husband, wife and their children live together while joint family system means collection of more than one nuclear family on the basis of close blood ties and living in common residence. Family system reflects the nature of family bond that helps to calculate their economic condition. The data regarding type of family is presented in Table 3.5.

Table 3.5: Distribution of Respondents according to the Type of Family

Family Type	No. of Respondents	Percentage
Nuclear	173	64.07
Joint	97	35.93
Total	270	100.00

Source: Field survey.

Table 3.5 reflects that 35.93 percent respondents had joint family system while 64.07 percent was under nuclear family system. As reported by the respondents, the percentage of nuclear family has been increasing and joint family system has been losing

its importance mainly due to the fragmentation of family land holdings amongst its members.

3.6 Caste

Caste system is a mighty and deep rooted institution in our society. The role and status of the members in the society are influenced by the respective castes to which they belong. The distribution of respondents according to their caste has been presented in Table 3.6.

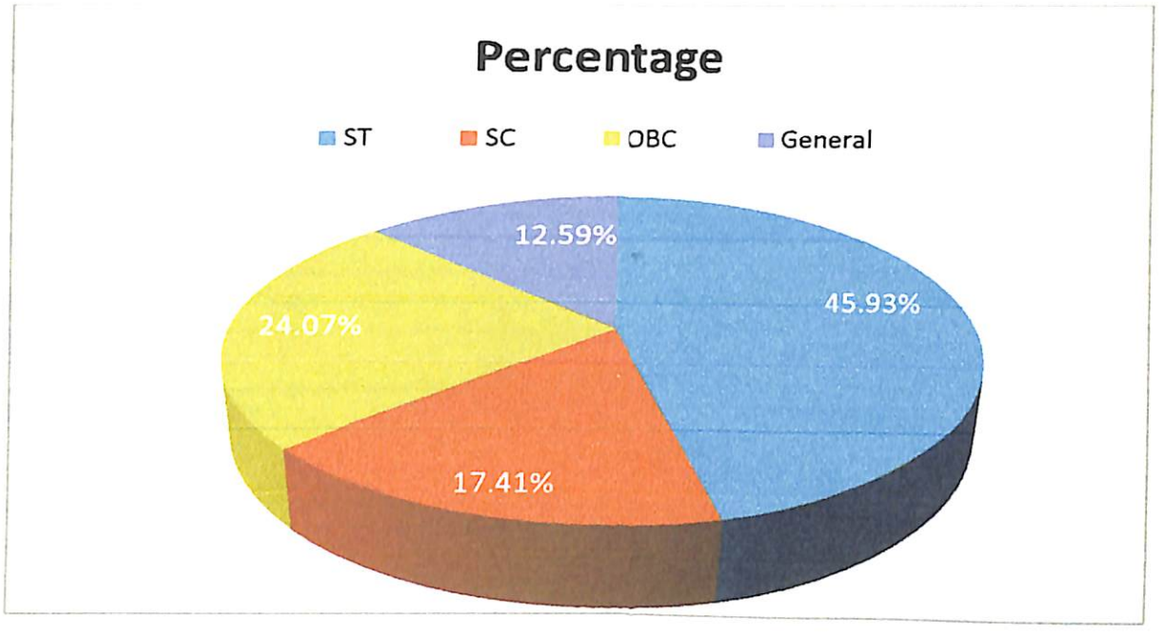
Table 3.6: Caste-Wise Distribution of Respondents

Categories	No. of Respondents	Percentage
ST	124	45.93
SC	47	17.41
OBC	65	24.07
General	34	12.59
Total	270	100.00

Source: Field survey.

The table shows that majority (45.93 %) of sample women workers belong to schedule tribe (ST) community. 17.41 percent of respondents are from schedule caste (SC), 24.07 percent belong to other backward classes (OBC) and only 12.59 percent are from general caste category.

Figure 3.2: Percentage of Respondents According to their Caste



3.7 Family Head's Occupation

Heads of farm households may involve in other occupations or service along with agriculture. It has been found that in the sample households, more than half (58.15%) of the respondents family head's occupation is agriculture. 14.81 percent respondents reported that their family heads are agricultural labourers whereas 14.07 percent family heads have subsidiary occupations like small shop, sericulture, bamboo/ cane works etc. besides agriculture and 12.96 percent are doing service in private, semi-government or government establishments along with farming. This indicates that agriculture is still a major source of livelihood in the study area.

Table 3.7: Distribution of Respondents According to their Family Head's Occupation

Occupation of family heads	No. of Respondents	Percentage
Agriculture	*157*	*58.15*
Agricultural Labour	*40*	*14.81*
Agriculture and Subsidiary	38	14.07
Agriculture and Service	35	12.96
Total	270	100.00

Source: Field survey.

3.8 Family Income

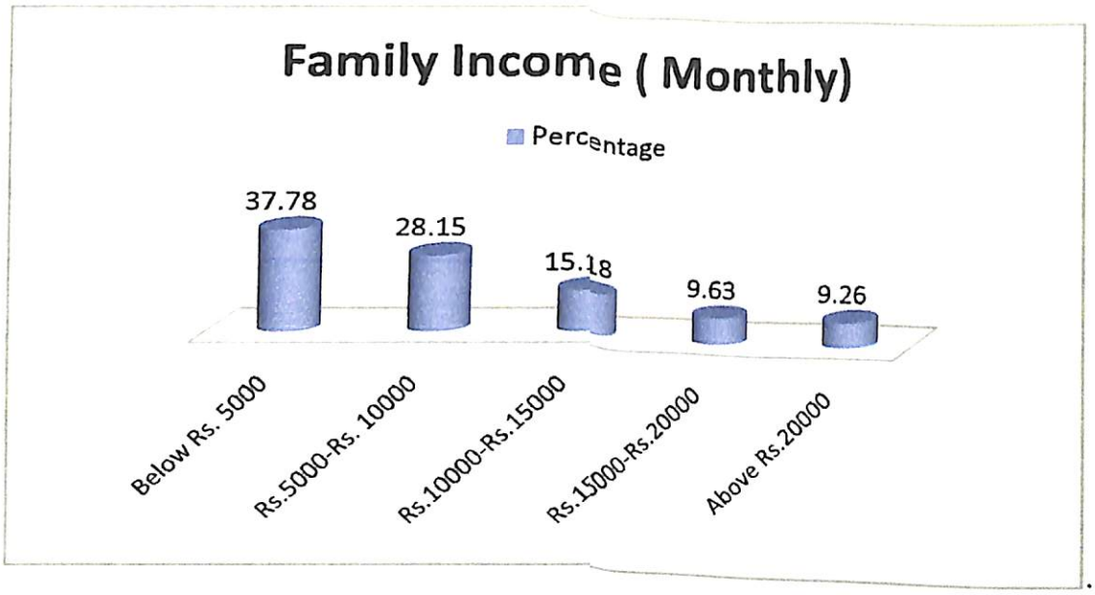
Family income refers to the combined incomes of all the members of the family sharing a particular household or place of residence. Income is considered to be an important variable in determining socio-economic status of an individual. The overall income of the family during one month from all sources of income is called monthly income. It reflects the economic condition of the respondents and influences the living style. The data (Table 3.8) shows that the respondents having monthly income less than Rs. 5000.00 are 37.78 percent of the total whereas 28.15 percent, 15.18 percent and 9.63 percent fall under the category of income ranging between Rs. 5000.00-Rs.10000.00, Rs.10000.00-Rs.15000.00 and Rs.15000.00-Rs.20000.00 respectively. Only 9.26 percent of respondents have monthly income above Rs. 20000.00. This situation indicates that a large majority of the respondents are financially not well off.

Table 3.8: Family Income of the Respondents

Monthly Income	No. of Respondents	Percentage
Below Rs. 5000.00	102	37.78
Rs.5000.00-Rs. 10000.00	76	28.15
Rs.10000.00-Rs.15000.00	41	15.18
Rs.15000.00-Rs.20000.00	26	9.63
Above Rs.20000.00	25	9.26
Total	270	100

Source: Field survey.

Figure 3.3: Percentage of Respondents According to their Family Income



3.9 Type of House

Type of house depicts the life style of the respondents. It also indicates their economic condition. Katcha house is mainly made of mud and pucca house is mainly of bricks while semi-pucca house is not fully katcha or fully pacca but a mixture of both. Table 3.9 presents the data in this regard. It reveals that 53.70 percent of respondent

lived in kacha house and only 5.55 percent of respondents resided in the houses provided under the scheme of Indira Awaas Yojana (IAY). On the other hand 15.56 percent and 25.19 percent of the respondents were living in pucca and semi-pacca houses respectively.

Table 3.9: Type of House of the Respondents

Type of House	No. of Respondents	Percentage
Katcha House	145	53.70
Pucca House	42	15.56
Semi- Pucca House	68	25.19
House under IAY	15	5.55
Total	270	100.0

Source: Field survey.

3.10 Employment Pattern

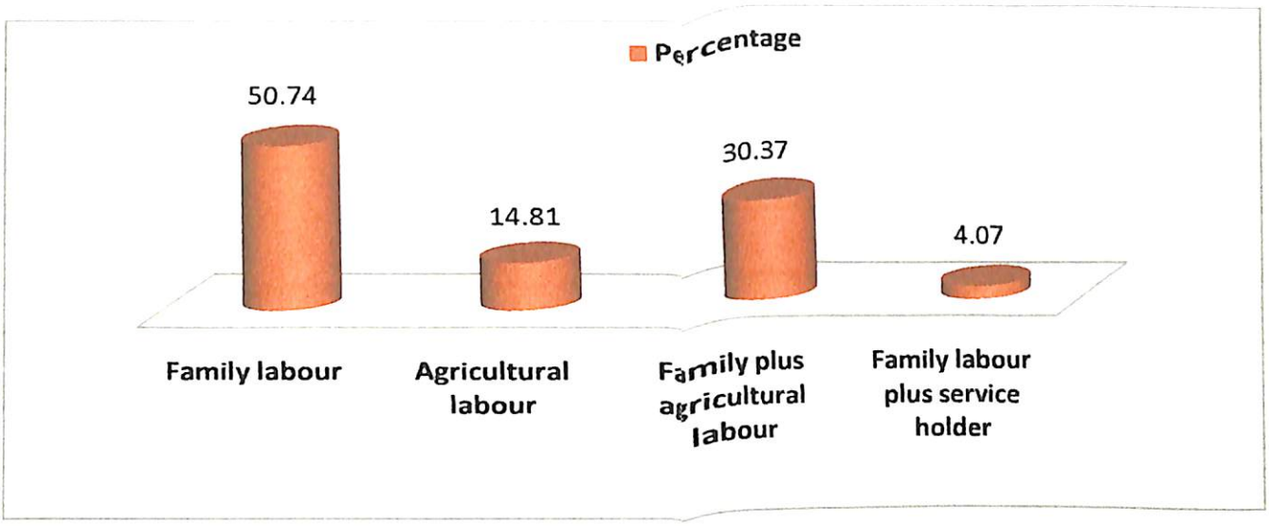
Status of women as worker in agriculture counts for the family's strength in economic aspects and women's role in decision making. Table 3.10 shows the pattern of employment of sample farm women. Out of the total respondents, majority i.e. 137 (50.74%) worked as family labour followed by 82 (30.32%) as family labour and agricultural workers, 40 (14.81%) as agricultural labour and only 11 (4.07%) as family labour along with doing job in either government or private sectors. Females included in the group of job holders were mainly teachers in primary schools, Asha Kormi, Anganbadi workers and Mid-Day meal cooks in the primary schools. It is clear from the data that a large number of respondents depend on agriculture as cultivators and agricultural labourers.

Table 3.10: Employment Pattern of Respondents

Category	No. of Respondents	Percentage
Family labour	137	50.74
Agricultural labour	40	14.81
Family plus agricultural labour	82	30.37
Family labour plus service holder	11	4.07
Total	270	100.00

Source: Field survey.

Figure 3.4: Percentage of Respondents According to their Employment Pattern



3.11 Land Holdings

Land is the key resource of rural people. The size of land holding refers to the operational area of land that a family possesses. It is an important indicator to determine production and productivity of land. Operational holding of land gives a change to a farm for producing sufficient food products to support the farm holders and his family. The sample households in the study area are categorized into landless and land holding farms. Landless households do not have their own land for cultivation. Land holding households depending on their size of holdings are divided into three farm sizes as small farms

(having land up to 1 hectare), medium farms (having land from 1 to 2 hectares) and large farms (above 2 hectares). Table 3.11 presents distribution of operational holdings in the sample households.

Table 3.11: Size of Land Holdings

Sl.No.	Name of Villages	Landless	Small(up to 1hectare)	Medium (1-2 hectare)	Large(above 2 hectare)
1.	Burha Mayong	5	14	7	4
2.	Hatiotha	3	15	09	3
3.	Belburi	3	13	10	4
4.	Dolloichuba	5	10	09	6
5.	Naukata	5	09	11	5
6.	Jorabari	4	15	07	4
7.	Palahguri	4	10	09	7
8.	Kapahera	6	11	08	5
9.	Sonarubori	5	08	11	6
All Villages		**40**	**105**	**81**	**44**

Source: Field survey.

Figure 3.5: Sample Households According to their Size of Land Holdings

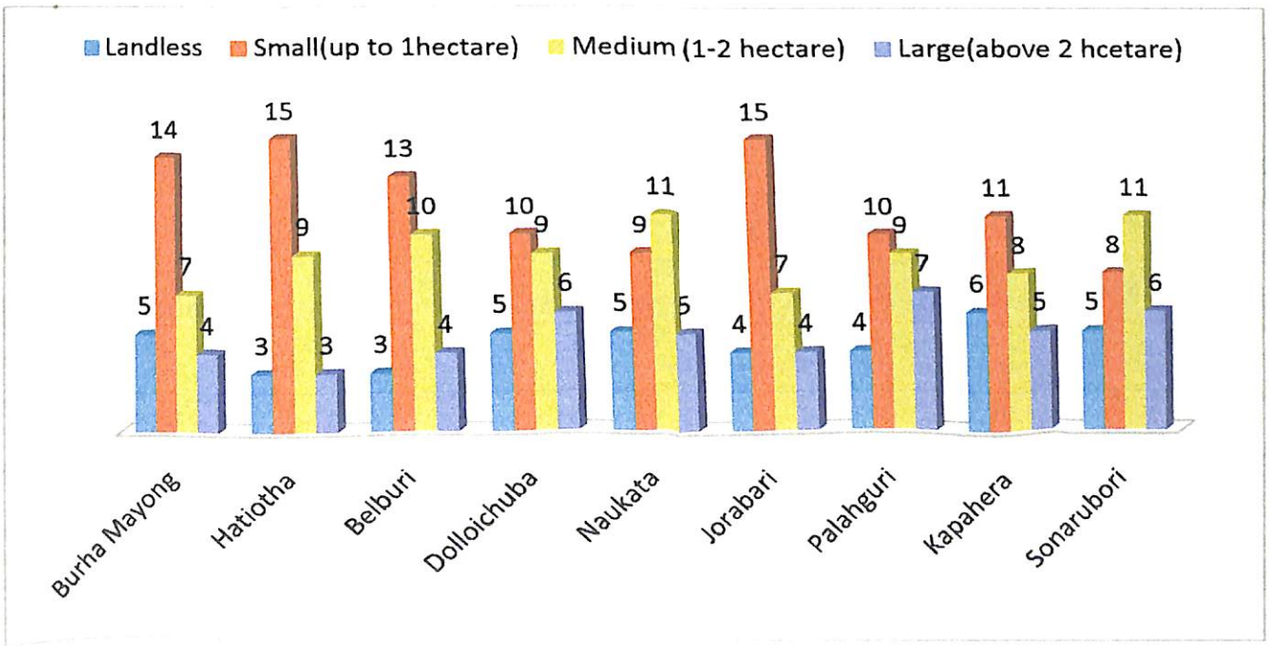


Table 3.12: Break-up of Households by Size of Land Holdings (Area in hectares)

Sl. No.	Category	No.of farm households	Percentage of farm households	Total farm area (net area sown)	Average size of holding
1	Landless	40	14.81	-	-
2	Small farms	105	38.89	62.93	0.60
3	Medium farms	81	30.00	115.47	1.43
4	Large farms	44	16.30	134.13	3.05
Total	All farms	270	100.00	312.53	1.36

Source: Field survey.

Table 3.12 reveals that the average size of operational land holdings is 1.36 hectare and the area operated by marginal and small farms is very low as compared to large farms.

3.12. Credit Behavior

Indebtedness is very common among the rural farm households. The respondents reported that they generally accept loan for the welfare of the family and not for their personal benefits. The sources of credit in the study area are divided into two segments- unorganized or informal and institutional or formal. Unorganized sources consist of moneylenders, landlords, friends or relatives and also self help groups whereas institutional sources include cooperative banks, regional rural banks, commercial banks and microfinance groups. The credit behavior of the respondents is presented in Table 3.13.

Table 3.13: Credit Behavior of the Respondents

Category		No. of Respondents	Percentage
No. of respondents availing credit		154	57.04
No. of respondent not availing credit		116	42.96
Informal Sources of credit	money lenders	42	27.27
	Friends or relatives	81	52.60
	Landlords	12	7.79
	Self Help Groups	37	24.03
Formal Sources of credit	Institutional sources (Banks)	8	5.19

Source: Field survey. **Multiple responses are included.**

During the survey, it is found that 57.04 per cent of the farm women are indebted while the remaining 42.96 percent have not availed credit from any source during that period. Out of the total indebted respondents, majority (52.60%) avail credit from friends and relatives followed by money lenders (27.27%), SHGs (24.03%), landlords (7.79%) and banks (5.19%). Farm women generally approach informal credit sources such as village moneylenders, landlords and friends or relatives. It is to note that only few respondents, mainly from medium and large farm households accepted loan from institutional sources along with other sources. Self help groups (SHGs) are playing an important role as contributor of credit to them in the study area. Women of all farm size groups prefer to avail credit from SHGs for their immediate expenses and emergencies. The data in Table 3.13 shows the distribution of respondents availing credit from different sources. Some respondents availed loan from more than one source at a time and therefore multiple responses are included in different sources of credit. One of the significant observations is that the family size of landless and small farm households is

large and dependency ratio is high. The low earnings of these families are insufficient to meet their requirements and thus both women and men need to avail credit.

Credit from informal sources is more attractive, because there is little or no requirement of collateral security. On the other hand, formal sources of credit have low patronage from the farmers, which may be due to lack or limited presence of banks in the study area coupled with delay in approval and disbursement of loan and requirement of collateral security.

3.12.i Purpose for Availing Credit

Farm women in the study area avail credit to fulfill their different requirements under some compulsion. Women of landless families or economically poor strata incurred debt due to their poverty arising mainly because of seasonality in agricultural production and unavailability of profitable job during off season. Their main purpose of availing credit is to meet the household consumption and to perform ritual functions. Household consumption includes treatment for illness, buying some property like ornaments, television, bicycle etc., education expenses of children, construction or renovation of house etc. Ritual functions include marriages, death ceremonies, festivals and other such functions. Though maximum of the respondents received loan mainly for these purposes, some women of landholding categories availed loan for solving farm problems. They have taken loan for maintaining the cost of agriculture or to cover loss in agriculture. A small number of women from medium and large farms have given importance to receive loan for purchasing agricultural materials and machinery, purchase of farm land etc. who wanted to contribute their men-folk investing in agriculture. Some of the respondents also availed loan for repayment of their previous loan. Table 3.14 shows distribution of respondents availing credit for different purposes.

Table 3.14: Purpose of Availing Credit

Purpose	No. of Respondents	Percentage
Household consumption	64	41.56
Ritual and ceremonies	39	25.32
Repayment of previous loan	17	11.04
Maintenance of Cultivation	23	14.94
investment in agriculture	11	7.14
Total	154	100.00

Source: Field survey.

3.13 Social Participation

Social participation can be referred as an individual's involvement in social organizations as a member or office holder that provides interaction with others in the community or society. Social participation of farm women in various events and gathering shows her degree of involvement in social and cultural life. This is likely to have an influence on her views and attitudes about the particular decision or problem. Keeping this in mind social participation of the respondents is considered for the investigation and data for the same is presented in Table 3.15.

Table 3.15: Social Participation of the Respondents

Category	No. of Respondents	Percentage
No participation	143	52.96
Participation in one organization	91	33.70
Participation in two organization	36	13.33
Participation in more than two organization	-	-
Office holder	-	-
Total	270	100.00

Source: Field survey.

Table 3.15 reflects that about half of the respondents (52.96%) have no social participation. 33.70% and only 13.33% of respondents participated in one and two organizations respectively. No respondent was in the position of office holder of any organization and member of more than two organizations. This clearly points out the fact that women workers in agriculture generally do not take part in social activities and become members of social organizations. Among them, few are involved with Mahila Samities and some are members of Self Help Groups and only three are members of cooperative societies. Social Participation of small and landless or low economic strata is found to be almost negligible. Reasons for poor participation of sample women in social organization can be attributed to various reasons including their self imposed isolation, illiteracy or low level of education, negative social attitude, male dominated social and cultural system and poor mobility of the respondents.

3.14 Farming Experience

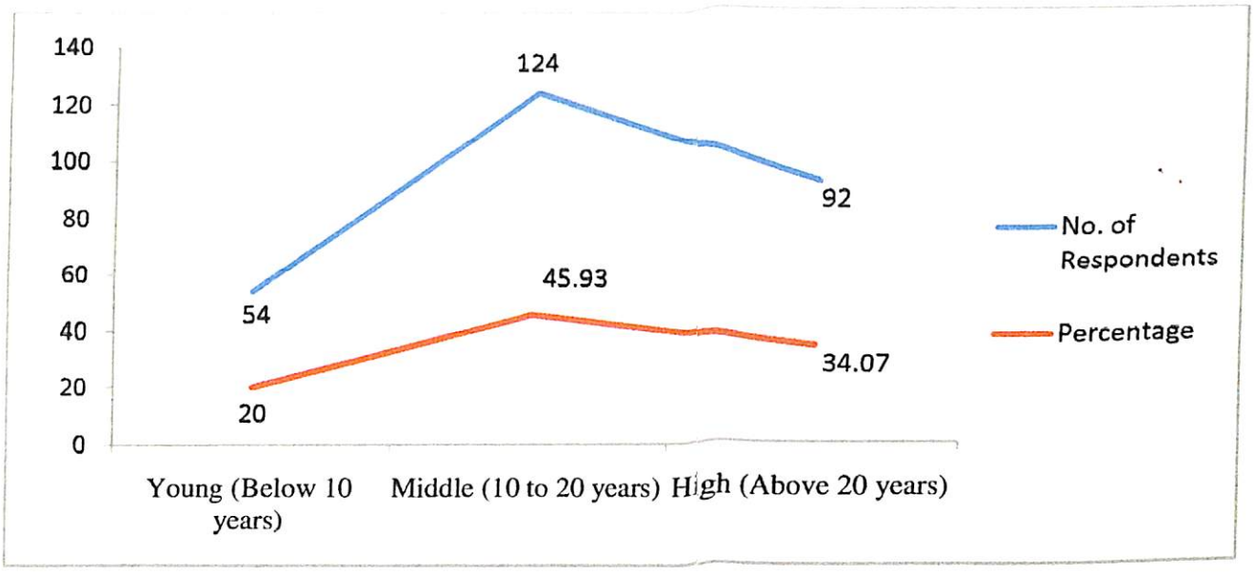
Farming experience of the respondents is an important indicator of their involvement or participation in agriculture and allied activities. It was found that 45.93 percent of respondents belonged to middle category of experience (10-20 years) in farming activities and 34.07 percent were in high category (more than 20 years), while only few respondents (20.00%) came under young category (less than 10 years). It indicates that most of the farm women have practiced agriculture as their source of livelihood since a long time. The reason behind maximum number of respondents found to be in the middle and high category of experience is that they inherited agriculture as family occupation. Data of respondent's farming experience are presented in Table 3.16.

Table 3.16: Farming Experience of the Respondents

Category	No. of Respondents	Percentage
Young (Below 10 years)	54	20.00
Middle (10 to 20 years)	124	45.93
High (Above 20 years)	92	34.07
Total	270	100.00

Source: Field survey.

Figure 3.6: Number and Percentage of Respondents According to their Farming Experience



3.15 Cropping Pattern and Cropping Intensity

The trend of crops grown in the study area is determined by the overall climatic condition, culture, tradition and economic worth attributed to the crops by the respondents. Paddy was found to be the dominant crop in the study area. Generally, two varieties of rice namely winter rice (Sali) and summer rice (Boro) were grown in the farm households. Sali paddy is the most important rice variety grown in the villages of Bhurbandha and Dolongghat block whereas Boro paddy is mainly grown in Mayong

block in comparison to other blocks of the district. Another variety of winter rice locally called 'Bao', is also cultivated which is generally grown in low flood plains. This crop is sown by the broad cast method during February - March and harvested in November - December and has the special ability to grow higher with the rise of water level during flood. Respondents were involved in cultivating both Kharif and Rabi crops in the study area. The main Kharif crops they grow are Sali paddy and Bao paddy while the main Rabi crops consist of Boro paddy, mustard, pulses (black gram), potato and Rabi vegetables. Summer crops ((Bodo rice) are mostly cultivated in low lying areas of Mayong block of Morigaon district. It is observed that during the two seasons, the cropping pattern has almost remained the same, being a rice dominant system. Though jute was another Kharif crop, it was cultivated only by few farmers in the sample villages of Bhurbandha block covering a negligible operated area. But the women were not involved in operations related to jute cultivation except some of the women of landless category, that too, only in post harvest operations. The main crops were only taken into consideration while working out the cropping pattern. Pulses like black gram (matikalai) and mustard seeds were mostly grown in Doloichuba, Jorabari, Palahguri and Kapahera village. Mustard seeds and Rabi vegetables were also grown by some farmers of Mayong block. The area under these crops occupies a very small area of the total operated area. Potato and vegetables were grown on commercial basis by very few farm households. Maximum of sample households grow vegetables and potatoes mainly for self consumption.

The cropping pattern of the sample households indicates that in all the villages, farmers are mainly rice growers. The sample farm women in the study area, therefore, are mainly engaged in the production of different types of paddy namely Sali and Bodo and Bao.

Intensity of cropping means the yield capacity of a particular plot of land. It may also imply the number of crops cultivated on a plot of land during an agricultural year. Crop intensity is calculated as follows:

$$\textbf{Cropping intensity} = \frac{\text{Gross cropped area}}{\text{Net cultivated area}} \times 100$$

$$= \frac{331.07}{312.53} \times 100 = 105.93 \text{ or } 106.$$

Crop intensity in the surveyed villages was 105.93 percent which is quite low. Availability of water determines mono-cropping, double cropping and multiple cropping. It is irrigation facilities which influence and determine the cropping intensity in the villages. It was found that in the sample villages, most of the cropped areas were mono-cropped. Many of the farm households used their fields for mono crop namely Sali paddy. Only in five out of nine sample villages namely Palahguri, Doloichuba Kapahera, Sonaruguri and Jorabari, the farmers devoted some area under double cropping while a very small area was under double cropping in Belgury and Burha Mayong villages of Mayong block. It was found during the field survey that for households of Hatiotha and Naukata villages, the entire cropped area was mono-cropped. Table 3.17 shows the area under double cropping in the surveyed villages.

Table 3.17: Area under Double Cropping (in hectares)

Name of Blocks	Name of Villages	Net area sown	Area sown more than once (Area under Double Cropping)	Gross cropped area
Mayong	Burha Mayong	30.67	1.60	32.27
	Hatiotha	29.07	-	29.07
	Belguri	40.67	.93	41.6
Bhurbandha	Dolloichuba	39.33	4.27	43.6
	Naukata	32.60	-	32.60
	Jorabari	30.73	2.40	33.13
Dolongghat	Palahguri	44.13	4.80	48.93
	Kapahera	31.73	2.67	34.4
	Sonaruguri	33.60	1.87	35.47
3 Blocks	9 Villages	312.53	18.54	331.07

Source: Field survey.

Out of total 18.54 hectares of area under double cropping, Palahguri village covered the highest area i.e. 4.80 hectares followed by 4.27 hectares in Dolloichuba, 2.67 hectares in Kapahera, 2.40 hectares in Jorabari, 1.87 hectares in Sonarubori,1.60 hectares in Burha Mayong and 0.93 hectare in Belgury. The women in the farm households where double cropping were practiced engaged higher days in agricultural activities compared to other farm women.

The major hindrances for bringing a change in cropping pattern in the study area are lack of capital, frequent occurrence of flood, inadequate agricultural implements, shortage of high yielding varieties of seeds and inadequate supply of fertilizer.

3.16 Livestock

Livestock rearing including poultry is the next important activity after crop farming in the study area. Rearing of animals usually goes side by side with farming.

Farm families not only supplement their farm income from livestock rearing but also consume livestock produce at home. Rural farm women actively participate in livestock rearing and management activities. It was found that respondents mostly reared animals for household consumption and not for commercial purposes although they earn additional income by selling animal and animal produce whenever they need money for some reason. Maximum of respondents revealed that decision to sell and income from poultry sector by selling of birds or eggs is mainly in their domain. But in case of animals, though most of rearing activities are performed by them, it is the male members who take decisions in matters related to this segment. To determine the role of respondents in livestock rearing, the first requirement is to determine average size of livestock maintained by the respondents' households. Data on different types and number of animals as well as poultry birds reared and maintained by the sample households are collected. The details are presented in Table 3.18.

Table 3.18: Distribution of Animals/Birds Reared by the Respondents

Animals	Number	Average number of animals per farm
Cow	148	.55
Buffaloes	32	.12
Bullock	24	.09
Goats	168	.62
Pigs	94	.35
Fowls	564	2.09
Ducks	378	1.40
Total	1408	5.2

Source: Field survey.

Figure 3.7: Average Number of Livestock Possessed by Per Sample Household

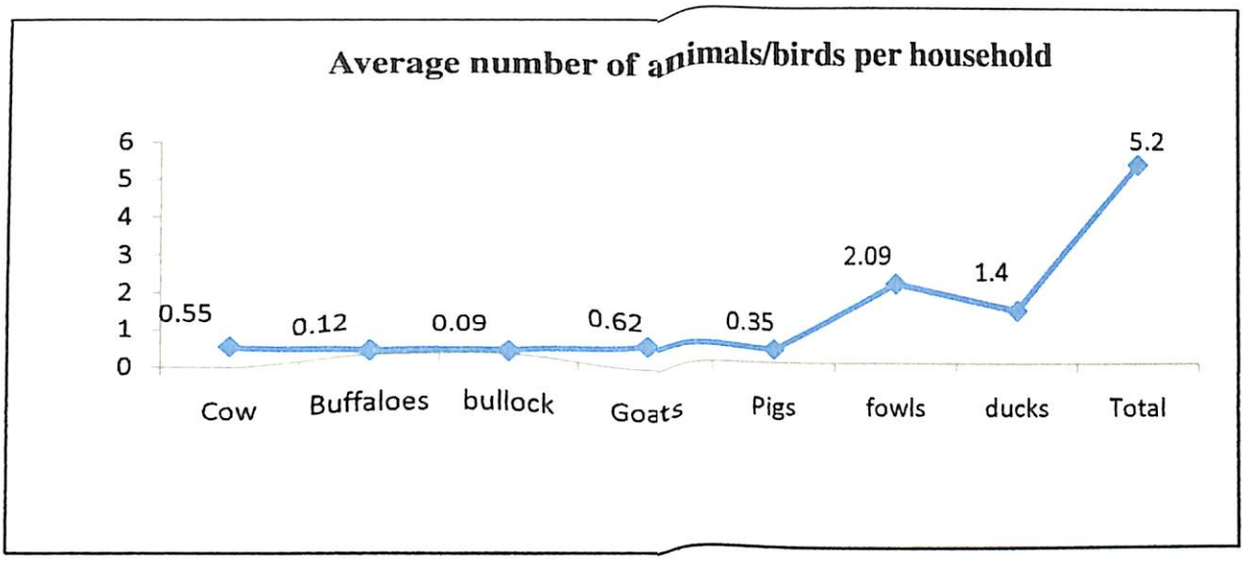


Table 3.18 reveals the livestock holdings of sample farm or family. The different livestock *viz.* cows, buffaloes, goats, pigs, fowls and ducks are reared in the study area. The average number of livestock possessed by per sample household was 5.2. It is found that per farm availability of poultry birds is the highest with an average of 1.40 for ducks and 2.09 for fowls. The average number is lowest in case of draught animal *viz.* buffaloes and bullocks which is 0.12 and 0.09 respectively. The per farm availability of milch animals, *i.e.*, goats and cows were 0.62 and 0.55 respectively. The average number of pigs per farm was 0.35. Thus the result shows that respondents mainly involve in poultry farming and rearing of cows and goats.

Conclusion

It can be concluded that majority of the respondents worked as family labour and belonged to small farms. Educational status of the respondent was not satisfactory and economic condition of majority of respondents was not well-off. They were mostly married women and from the active working age group. Almost all the respondents possess either livestock or poultry and involved actively in livestock management and farming activities along with their family duties

CHAPTER IV

WOMEN WORKERS IN AGRICULTURE

Introduction

In India, agriculture is becoming a female activity. The percentage of female employment in agriculture to the total female employment is higher than the percentage of male employment in agriculture to the total male employment. Data compiled from Census 2011 on cultivators and agricultural labourers reflects 67.5 percent of total female workers depend on agriculture, either as cultivators or agricultural labourers, while 49.8 percent of total male workers do the same. This is mainly due to male out migration for a better paid employment in the non-agricultural sector putting more burdens on women in farm sector of the country. Out of one-in-two males and two of every three females are engaged in agricultural activities as cultivator and agricultural labourer (Primary Census Abstract, Census of India 2011). Women are involved in all aspects of agriculture, from crop selection to land preparation, seed selection, planting, weeding, pest control, harvesting, crop storage, handling, marketing and processing of agricultural produce (Agarwal *et al.* 2013).

In Assam and Morigaon district also, women's participation in agriculture sector is significant. According to census 2011, 48.94 percent of women workers in Assam are engaged in agriculture. Though the women workers in agriculture have decline over time because of urbanization, development of manufacturing, construction and other non-farm sectors, but there is an increasing trend in the percentage of them in the category of agricultural labourers. In Morigaon, the rural female workers constitute 95.57 percent of

the total female workforce of the district. The women agricultural workforce constitutes 56 percent of the total female workers in the district. Thus, it has been observed that most of the women workers are concentrated in agriculture sector in the study area.

In the present chapter, participation of women workers in agriculture and their contribution to family income derived from agriculture has been discussed on the basis of primary data. The chapter is divided into two parts, part-A and part-B. Participation of women workers in agriculture is analysed in part-A and income of women workers from agriculture is discussed in Part- B of the present chapter. This chapter analyses the second and third objectives and one of the research questions of the study.

PART-A

4.1 Participation of Women Workers in Agriculture

Women are the integral part of the village economy and their role is important in the framework of rural development. Women work in the fields alongside men, attend to off-farm activities, tend the livestock animals and run the household. They contribute directly to almost all agricultural labour without being the direct beneficiaries of agricultural inputs, training and capital (Radhika 2008). They are highly involved in activities like transplanting, weeding, harvesting and post harvest activities which are more laborious, time consuming and have painful postures. The nature of participation of women in agricultural activities varies from region to region depending on cropping pattern, availability of labour, social customs, cultural norms and most importantly attitude of women as well as men folk towards agricultural works. Majority of women are engaged in agriculture on their own account or as unpaid family labour and most of them do not have access to cash income. The tasks performed by them are labour-intensive and done generally by hand which has evidently reduced their efficiency of

work. Low productivity and seasonal nature of agriculture reduce demand for women workers and as a result forced idleness is higher among women than men. Moreover, women's productivity in agriculture also suffers from subsistence nature of agriculture in which the household consumes the products.

The activities allied to agriculture such as the management and care of livestock, fishing and forestry are considered of secondary importance as they contribute additional household income. Livestock is an integral component of farming system. Farm women contribute a lot in livestock farming practices such as bringing fodder, preparing food, feeding, grazing, animal shed cleaning, taking care of sick animals, calf rearing, watering to animals, milking, caring of poultry birds, selling dairy and poultry products etc. Women spend a considerable time in these activities as a part of their regular works.

Agriculture in Assam is not only a family occupation, but also a way of life. Agricultural sector gives opportunities to all adult members of the family to participate actively in farming or agricultural operations. Agriculture being a family enterprise in the study area, both the male and female members of the family work on it to earn their livelihood. Even children sometime assist the adult in carrying on such activities. The soil, topography and climate of the study area in general are conducive for agricultural activities mainly for paddy cultivation. Paddy is the dominant crop grown by all the sample households and women are engaged in the cultivation of different varieties of paddy. Some farmers also grow black grams, mustard and jute to some extent, but women workers are generally involved in post-harvest activities of these crops. Thus, post harvest operations of crops include paddy and the other crops in which women are engaged. Livestock rearing including poultry is the next important activity after crop farming in the study area. The different livestock *viz.* cows, buffaloes, goats, pigs, fowls

and ducks are reared in the study area and women actively participate in livestock rearing and management activities. Labour utilization of women workers of farm families in different agricultural and allied activities determines their nature and level of participation in agriculture.

The preview of agriculture is very broad. It includes crop production, livestock breeding, fishing, forestry and logging (Goswami *et al.* 2013). In the present study, participation of women workers in agriculture includes farm women's engagement in different activities of crop cultivation and livestock management as women are mainly involved in these activities in the study area.

As discussed in the previous chapter, sample farm households comprise of both landless and land holding farms, therefore, analysis of nature and extent of participation of women workers in agriculture has been studied for both the categories of households. Women of landless households hire out their labour for wage employment in agricultural activities on another person's farm within the village or nearby areas. Earning income for the survival of their families is the prime responsibility of these women. On the other hand, women of landholding households have their family land for cultivation and they work on their own farm. However at times, some of these farm households also hire some labourers from outside and at times, some members of these households work in large farms of others. Mostly women of small farms are opt for works on others' farm as hired labour and sometimes on mutual labour exchange system only after completing their works on own farm. These women report that unless there is some economic compulsion, they do not seek wage employment in agriculture. Women of medium farm households prefer to work on others' farm only on mutual exchange of labour and the number of which is very less. Either for greater volume of works in own farms or for

family standard, women of large farm households do not hire out their labour for agricultural wage employment. The annual employment of women of different farm size in agriculture has been worked out by total mandays worked both on own and others' farms together.

Thus the chapter presents the participation of women workers in agricultural activities mainly by paddy cultivation and livestock management activities. In the field survey, the required data have been collected from the respondents and also from the main male worker of the farm family. Total hours spent by them on cultivation and livestock raising works have been collected and converted into mandays by assuming that one manday consists of eight hours of work to analyse their participation level in agriculture. Extent of participation of women workers in agriculture has been calculated on the basis mandays per person per farm household and by the size of farms.

4.1.1 Brief Description of Activities Related to Cultivation Practised in the Study Area

In the study area, paddy being the dominant crop, three varieties of paddy are cultivated by the sample farm families namely Sali paddy (winter rice) being the main followed by Bodo paddy (summer rice) and Bao paddy (winter rice).

The nature of activities related to cultivation is seasonal and performed stage wise. In the first stage, land preparing activities are done which include cleaning of farm fields, ploughing, harrowing, boundary making, manuring the field and sowing of seeds. These activities are known as preparatory activities for crop cultivation. For winter rice such activities start from the first part of May and for summer rice, from the mid part of November in the study area.

The second phase of activities comprises of uprooting of seedlings and transplanting. In the sample villages, farmers cultivate both the transplanted varieties of winter rice (Sali) and summer rice (Bodo) and broadcast variety of winter rice (Bao). Bao rice is not common for the sample households as it is ideally suited for the flooded condition of low lying areas. Transplanting operation of Sali rice are carried out from the last part of June up to first part of September while for Bodo rice, such operations continue from mid part of December to February. For Bao rice, sowing operations by the broad cast method are done during February – March.

After transplantation of crops, inter culture activities like weeding, application of irrigation, fertilizer and plant protection measures are performed in the third stage. Such activities are not common for all the sample villages. These operations were performed during the growing stage of the crops.

The fourth phase of activities comprises of harvesting and post harvest operations like carrying harvested crops from fields to homestead, threshing, winnowing, cleaning and drying of grains. Sali rice is harvested from the month of November to the first part of January while Bodo rice is harvested from the month of April to mid part of June. After Sali crops are harvested, Bodo paddy can be grown on the same plot of land. But the practice of crop rotation is found to be very low in the sample villages. The Bao paddy is harvested during November and December.

From the study, it is observed that the duration of agricultural operations vary from village to village depending on type of crops, location, size and number of individual plots or fragments and the extent of labour utilization. Agricultural operations are continued still by applying traditional methods. Adoption of improved technology is seen only in case of application of HYV seeds and chemical fertilizer at a very low level.

Use of shallow tube wells for irrigation is found in few paddy fields mostly in Mayong block and modern implements like tractor and power tiller for ploughing are used by only a few farmers. Most of the agricultural activities are manual and hence both men and women workers are actively involved in these activities.

4.1.2 Participation of Women Workers in Cultivation

Activity wise participation of women labour in crop cultivation reveals their level of labour utilization which varies among the different activities of cultivation. In case of cultivation of crops, ten areas of activities have been taken to analyse the extent of participation of women in different activities and to assess their overall participation in its production process.

Almost all the women workers of farm families have participated in activities like transplanting, harvesting and post-harvest operations of crop cultivation. But some of them have not been involved in certain activities related to cultivation. Table 4.1 shows the number and percentage of women involved in different activities of crop cultivation.

Table 4.1: Percentage of Women Involved in Cultivation

Sl. No.	Activities	No. of women who participated	Percentage of participation (%)
1.	Land preparation	26	9.63
2.	Sowing	12	4.44
3.	Up rooting	164	60.74
4.	Transplanting	270	100
5.	Weeding	190	70.37
6.	Fertilizer/Manure application	17	6.30
7.	Irrigation	24	8.89
8.	Plant protection	-	0
9.	Harvesting	267	98.89
10.	Threshing/post-harvest operations	250	92.59

Source: Field survey.

It has been observed that all the sample women are engaged in transplanting crop-plants. Their participation is also found to be more in harvesting and post-harvest activities (more than 90%). The uprooting and weeding activities account 60.74 percent and 70.37 per cent respectively. But the sample women have rarely been involved in activities like land preparation, sowing, application of fertilizer/ manure and irrigation. Women in the study area either do not prefer themselves or are not allowed to do such jobs. These jobs have been regarded as men's job in the study area. Participation of women is found to be zero in activities related to plant protection measures which is done by male workers only.

Table 4.2: Farm Size-Wise Participation of Women in Cultivation

Activities	Landless (N=40)	Small (N=105)	Medium (N=81)	Large (N=44)	Total (N=270)
Land preparation	-	12	14	-	26
Sowing	-	4	8	-	12
Up rooting	27	65	58	14	164
Transplanting	40	105	81	44	270
Weeding	25	81	68	16	190
Fertilizer/Manure application	-	4	11	2	17
Irrigation	-	9	15	-	24
Plant protection	-	-	-	-	-
Harvesting	40	105	81	41	267
Threshing/post-harvest operations	20	105	81	44	250

Source: Field survey.

Table 4.2 shows a distinct picture of farm size wise participation of women in farm activities. Women of landless category participate only in some selective activities like transplanting, weeding and harvesting. Women of large farm category also do not participate in all the activities of cultivation except in transplanting, harvesting and post

harvest operations. It is found that Women of medium and small farm category participated almost in all the activities from land preparation to post harvest operations.

4.1.2.i Extent of Participation of Women Workers in Cultivation

Women workers participate in seasonal and specific agricultural operations for a few months. No women workers get engaged in activities like harrowing, ploughing and plant-protection. Women do not participate in these activities not only due to higher physical labour and technical knowledge involved in these activities but also due to social taboos against women's participation in such activities. Except these activities, sample women are found to be engaged in all other activities with variation in mandays for different activities. Extent of participation of women workers in cultivation is measured in terms of mandays spent in different activities related to cultivation.

Table 4.3: Total and Average Mandays Devoted by Women in Cultivation

Activities	Landless (N=40)	Small (N=105)	Medium (N=81)	Large (N=44)	Total (N=270)
Land preparation	-	54.25 (4.52)	40.75 (2.91)	-	95 (3.65)
Sowing	-	1.5 (.38)	5 (.63)	-	6.5 (.54)
Up rooting	67(2.48)	154.63 (2.38)	178.5 (3.08)	32.75 (2.34)	432.88 (2.64)
Transplanting	1783 (44.58)	2997.75 (28.55)	2721.25 (33.60)	1368.25 (31.10)	8870.25 (32.85)
Weeding	141.25 (5.65)	510 (6.30)	567.25 (8.34)	124.5(7.78)	1343 (7.07)
Fertilizer/Manure application	-	3 (.75)	6.5 (.59)	5 (2.5)	14.5 (.85)
Irrigation	-	7.25 (.81)	9.25 (.62)	-	16.5 (.69)
Plant protection	-	-	-	-	-
Harvesting	1577 (39.43)	2799.50 (26.66)	2430.63 (30.01))	1233.50 (30.08)	8040.63 (30.11)
Threshing/post-harvest operations	196.75 (9.84)	1300.5 (12.39)	1241.88 (15.33)	749.38 (17.03)	3488.51 (13.95)
All Activities	3765 (94.13)	7828.38 (74.56)	7201.01 (88.90)	3513.38 (79.85)	22307.77 (82.62)

Source: Field survey. (Figures in the brackets indicate the average mandays.)

Table 4.3 shows total and average mandays devoted by women workers in different activities related to cultivation of crops. Activity-wise variation of mandays is shown for different farm size groups. The highest proportion of women labour is utilized during transplanting and harvesting. On average, women workers devote 44.58, 28.55, 33.60 and 31.10 mandays in landless households, small, medium and large farm households respectively during transplanting activities. Seed-sowing activity is mainly done by male workers. Few women are found to participate in sowing operations, but the practice is not common in all the sample villages and also for all farm sizes. In the study area, only four women of small farm and eight women of medium farm households are involved in the activities of sowing. They only help the male counterparts in making the preparatory arrangements for sowing activities. Average mandays devoted by sample women in sowing are 0.38 for small and 0.63 for medium farm households and involvement is zero for women of landless and large farm households. Uprooting of seedlings from nursery beds and tying them into bunches (locally termed kathia-akhi) is done by both men and women, but men carry the bunches to the main fields for transplantation. Average mandays involved in uprooting seedlings is highest for medium farm category i.e. 3.08 followed by 2.48 for landless, 2.38 for small farm and 2.34 for large farm categories. Transplanting operations are mostly done by women workers in all the sample villages, though few male members of some sample farm households also join in these activities. It has been reported during field survey that women workers are quite efficient and familiar with the skill of transplanting seedlings. The small bunches of seedlings (locally termed kathia-guchi) are transplanted in equal distance from each bunch (generally 40-45 cms.) and maintaining a similar distance between the rows. Farm women perform these operations by the skill of hands and mere habit.

Harvesting is another important farm operation, next to transplanting, for women workers of the study area. Harvesting of crops is primarily done by women, though some male workers are also found to be engaged in this operation. Men were solely engaged in carrying of crops from the fields to the homestead. Women harvest crops with the help of sickles. In harvesting operation, on average, a sample woman devotes 39.43, 26.66, 30.01 and 30.08 mandays in landless, small, medium and large categories of farm households respectively.

Threshing and other post harvest activities occupy an important category of crop production activities. Farm women are involved in post harvest activities irrespective of farm sizes. Post harvest operations include activities like carrying of produce, threshing, winnowing, cleaning, sun-drying and storing. Out of these activities, threshing and carrying of produce are mainly carried out by men and that of winnowing, cleaning and sun-drying mainly by women and storing is done by both. Threshing is done by using both tractor and bullock power. Women workers mainly separate the grains after threshing collect the crops and clean them for storage. In a few households, women also adopt the practice of threshing by feet. They reported it as a very labourious job and they practised it only when there is an emergency or due to their poor economic condition to adopt other means of threshing. Average mandays engaged by women in post-harvest activities is 9.84 for landless, 12.39 for small, 15.33 for medium and 17.03 for large categories of households. The extent of utilization of women labour is less for those farm households where hired labour is engaged for these activities.

Another important operation where a large proportion of women workers are engaged is weeding. Weeding is necessary during the process of cultivation of both winter and summer paddy, but its importance is comparatively more for summer paddy.

Average mandays devoted by women in weeding is 5.65, 6.30, 8.34 and 7.78 mandays for landless, small, medium and large farm households respectively. The percentage of participation of women of large farm category is very less in weeding as compared to women of other farm categories.

It is found that mandays worked by women in activities like field preparation, application of manure/fertilizer and irrigation are very less. As reported by the respondents, during field preparation, women workers help the male workers in preparing the boundary and manuring the field and also sometimes in irrigating the field from the nearby canals. But mandays devoted in these operations are very less and they are only occasionally involved in such operations. Women workers are not found to engage in applying chemical fertilizers and plant protection measures which are performed by men only.

Husking of paddy for domestic consumption is another post-harvest operation done by farm women in the study area. But husking of paddy is carried out intermittently throughout the year depending on the domestic requirement for rice. Hence, mandays worked by women in this activity cannot be included in the total mandays worked by women due to unavailability of reliable data. Women of sample households generally include it in their household or domestic chores.

Marketing of agricultural inputs and produce is a very important activity related to crop production which is generally done by the male members of the farm family. Only a very few women respondents, mainly those who headed the households participated in marketing or market related activities of crop production. Like husking, marketing activity is also carried out throughout the year and respondent cannot provide

proper data to calculate mandays spent on it. So this activity is also not taken into account in the total labour use in cultivation.

Figure 4.1: Activity Wise Average Mandays Devoted by Women in Cultivation

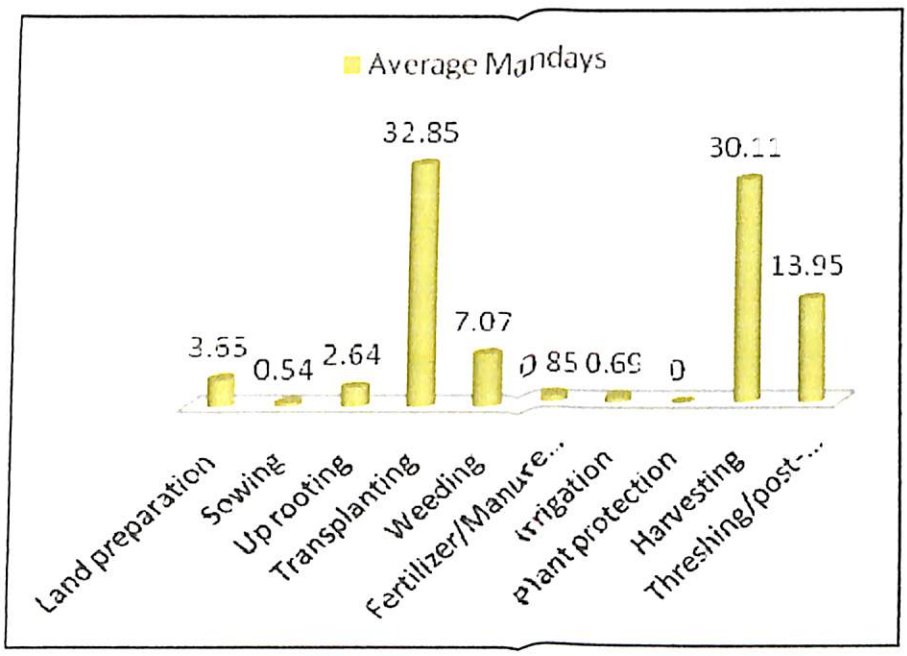
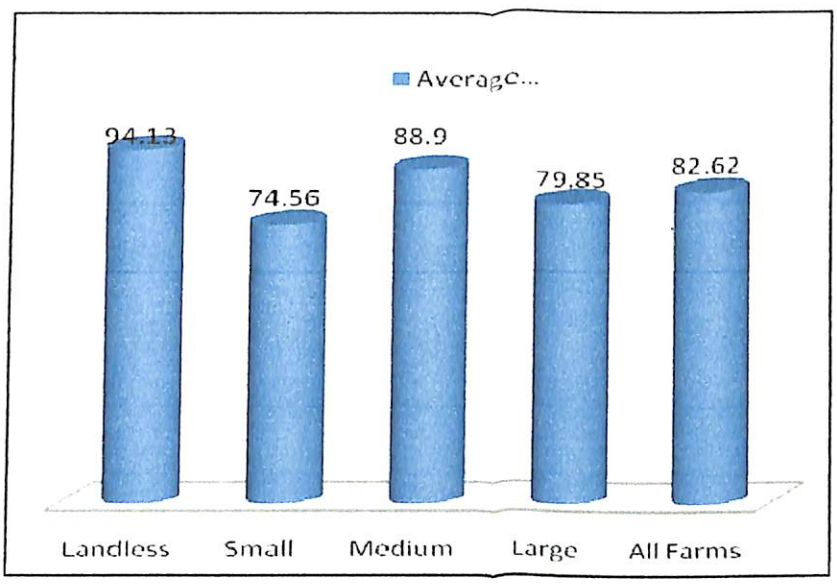


Figure 4.2: Farm Size Wise Average Mandays Devoted by Women in Cultivation



Activity wise distribution of average mandays worked by women of all farm sizes taken together is 3.65 for field preparation, 0.54 for sowing, 2.64 for uprooting, 32.85 for transplanting, 7.07 for weeding, 0.85 for manure/fertilizer application, 0.69 for

irrigation, 30.11 for harvesting and 13.95 for threshing and other post-harvest operations. For all operations irrespective of farm sizes, average mandays worked by a women worker is 82.62 (Table 4.3).

Average mandays worked by a woman worker of different farm sizes for all activities taken together is 94.13 for landless, 74.56 for small, 88.90 for medium and 79.85 for large categories of farm households.

Thus, on average, mandays engaged by a women worker in cultivation is highest for landless category than the other categories of farms. The reasons behind this include inadequate employment opportunities in other sectors, absence of own farm land and to meet the economic need of the family. Participation of women in cultivation activities increases with the increase in farm size except for women of large farm households. This is mainly because they generally do not prefer to work in the field as a status symbol and also due to the financial strength of the family for hiring labour in such activities.

4.1.2.ii Participation of Women in Cultivation in the Sample Blocks

A considerable variation has been observed in the work participation of women in farm activities among the sample blocks of the study area. Block wise participation depicts work participation pattern of women respondents of sample blocks namely, Mayong, Bhurbandha and Dolongghat blocks of Morigaon district in different activities of crop cultivation.

Table 4.4: Total and Average Mandays Devoted by Women in the Sample Blocks

Activities	Mayong	Bhurbandha	Dolongghat	Total
Land preparation	34.25 (2.63)	60.75 (4.67)	-	95 (3.65)
Sowing	1.5 (.38)	-	5 (.63)	6.5 (.54)
Up rooting	151.25 (2.68)	151(2.75)	130.63 (2.61)	432.88 (2.64)
Transplanting	2971.5 (33.02)	2951.5 (32.79)	2947.25 (32.75)	8870.25 (32.85)
Weeding	604.25 (8.17)	378.75 (6.53)	360 (6.21)	1343 (7.07)
Fertilizer/Manure application	7 (1.4)	3 (.75)	4.5 (.56)	14.5 (.85)
Irrigation	10 (.78)	4 (.5)	2.5 (.83)	16.5 (.69)
Plant protection	-	-	-	-
Harvesting	2701(30.01)	2682.38 (30.14)	2657.25 (30.20)	8040.63 (30.11)
Threshing/post-harvest operations	1194.5 (13.73)	1173.88 (14.49)	1161.13 (14.51)	3488.51 (13.95)
All Activities	7634.25 (84.83)	7405.26 (82.28)	7268.26 (80.76)	22307.77 (82.62)

Source: Field survey. (Figures in the brackets indicate average mandays.)

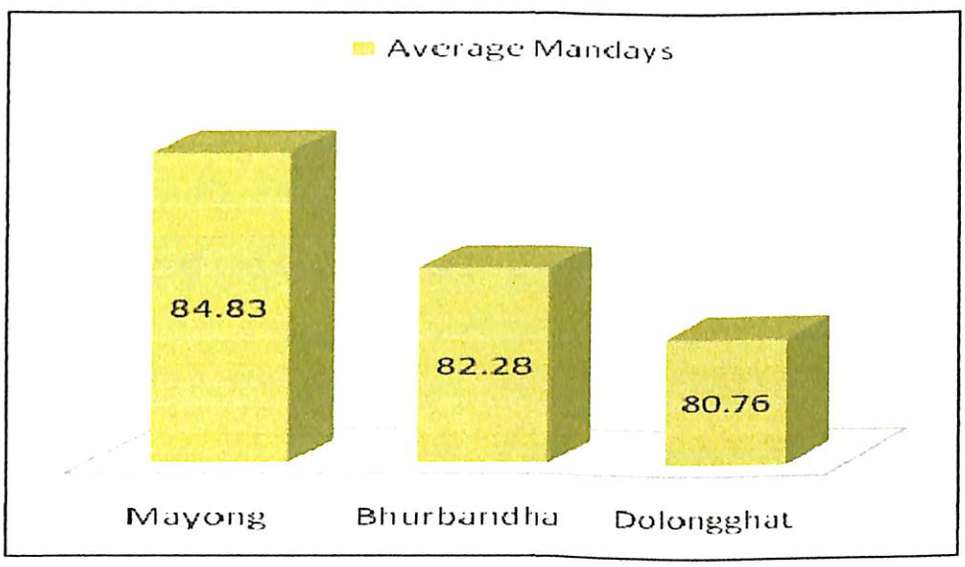
Activity wise participation of women workers in cultivation in sample blocks is shown by Table 4.4. The table depicts that mandays devoted by women in transplanting and harvesting are higher amongst all activities in all the blocks. The data in the table clearly shows that activities like land preparation and sowing are not common for the women of different blocks. Women neither participate nor help male members in land preparation in Dolongghat block and in sowing in Bhurbandha block. On the other hand, women in Mayong block participate more or less in all types of activities related to cultivation except ploughing and application of pesticides and insecticides. On average, in all activities taken together, mandays devoted by women irrespective of farm size is 84.83 in Mayong, 82.28 in Bhurbandha and 80.76 in Dologghat block. There is no observed significant difference in mandays worked by women workers of Bhurbandha and Dolongghat block compared to that of Mayong block.

Table 4.5: Farm Size Wise Total and Average Mandays Devoted by Women in the Sample Blocks

Farm size/Blocks	Mayong	Bhurbandha	Dolongghat
Landless	1018.25 (92.57)	1358.25 (97.02)	1388.5 (92.56)
Small	3225 (76.79)	2490.75 (73.26)	2112.63 (72.85)
Medium	2402 (92.38)	2385.38 (88.35)	2413.63 (86.20)
Large	989 (89.91)	1170.88 (78.06)	1353.5 (75.19)
All farms	7634.25 (84.83)	7405.26 (82.28)	7268.26 (80.76)

Source: Field survey. (Figures in the brackets indicate average mandays)

Fig 4.3: Block Wise Participation of Women in Cultivation



Variation in mandays contributed by women in cultivation is also calculated by the size of farms among the sample blocks. Table 4.5 presents farm size wise total and average mandays devoted by the respondents of the selected blocks.

It is found that the average mandays devoted by women is higher in case of landless households in all the blocks and among the blocks mandays worked by landless women of Bhurbandha block was the highest. In case of other farm sizes, women

workers of Mayong block devoted the highest mandays in crop cultivation activities. Thus, comparing the block wise mandays worked by women, women workers of Mayong block engaged in highest number of mandays in cultivation among the sample blocks.

4.1.3 Participation of Women Workers in Livestock Management

The activities related to livestock management are not seasonal and carried on for the whole season. These activities are performed by the farm women workers for the whole year as a part of their daily works. Almost all the activities of livestock rearing are performed regularly except some activities like milking and health-care which may be done at intervals. Sample farm households possess either livestock or poultry. Thus an attempt has been made to study the participation of women in activities related to livestock management including poultry. While calculating total hours spent on livestock management activities by the respondents, data have been collected on the basis of number of days engaged and average hour s spent daily in such activities.

Sample women workers of farm households actively participated in most of the activities related to livestock management. They are engaged in these activities in order to generate additional income to cultivation and provide food for their household consumption. To analyse women's participation in livestock activities, a total of nine activities have been identified and respondents are asked about their time devotion in these activities. Table 4.6 shows the number and percentage of women workers involved in different activities of livestock management.

Table 4.6: Number and Percentage of Women in Livestock Management Activities

Sl. No.	Activities	No. of Women participated	Percentage of participation
1.	Fodder collection	93	34.44
2.	Preparing food/ feeding	244	90.37
3.	Grazing of animal	53	19.63
4.	Offering water	216	80.00
5.	Cleaning animal	80	29.63
6.	Cleaning shed/utensils	244	90.37
7.	Health care	202	74.81
8.	Milking	134	49.63
9.	Caring of chicks/birds	197	72.96

Source: Field survey.

It has been observed that more than 90 percent of the sample women have participated in the activities such as preparing food and cleaning shed/utensils. Their participation has also found to be important in activities like offering water, health care and caring of chicks and birds where more than 70 percent of the respondents participate actively. But the participation of women is less in activities like fodder collection, grazing animals, cleaning animals and milking.

Table 4.7: Farm Size wise Participation of Women in Livestock Management

Activities	Landless (N=40)	Small (N=105)	Medium (N=81)	Large (N=44)	Total (N=270)
Fodder collection	18	41	20	14	93
Preparing food/ feeding	32	95	74	43	244
Grazing of animal	12	41	-	-	53
Offering water	21	87	74	34	216
Cleaning animal	28	42	10	-	80
Cleaning shed/utensils	32	95	77	40	244
Health care	28	83	57	34	202
Milking	15	54	46	19	134
Caring of chicks and birds	28	80	65	24	197

Source: Field survey.

The farm-size wise participation of women in livestock based activities shown by the table (Table 4.7) clearly reveals the nature of participation of women among different farm sizes. Maximum of the women of large farm size category participated occasionally in activities like fodder collection and milking whereas their participation was nil in activities of grazing and cleaning of animals. In case of medium farm category also, women mostly participated occasionally in such activities and their participation was zero in grazing animals. But the women from landless and small farm categories participated actively more or less in all the activities.

4.1.3.i Extent of Participation of Women Workers in Livestock Management

In the study region, livestock management is an integral part of farming activities. Generally, it is the women of the household who look after domestic animals and a considerable time is devoted daily by them in these activities. Extent of women's participation in livestock management is examined by the mandays devoted by them in these activities.

Table 4.8: Total and Average Mandays devoted by Women in Livestock Management

Activities	Landless (N=40)	Small (N=105)	Medium (N=81)	Large (N=44)	Total (N=270)
Fodder collection	325.46 (18.08)	551.41 (13.45)	273.80 (13.69)	130.86 (9.35)	1281.53 (13.78)
Preparing food/ feeding	973.44 (30.42)	3133.10 (32.98)	2627.28 (35.50)	1577.86 (36.69)	8311.68 (34.06)
Grazing of animal	100.36 (8.36)	246.37 (6.00)	-	-	346.73 (6.54)
Offering water	225.93 (10.76)	1137.07 (13.07)	1125.54 (15.21)	474.58 (13.96)	2963.12 (13.72)
Cleaning animal	267.80 (9.56)	386.39 (9.20)	109.56 (9.13)	-	763.75 (9.31)
Cleaning shed/utensils	729.92 (22.81)	2482.61 (26.13)	2342.28 (31.65)	1346.02 (32.83)	6900.83 (28.52)
Health care	301.32 (10.76)	951.35 (11.46)	787.17 (17.12)	488.26 (14.36)	2528.10 (12.52)
Milking	191.71 (10.09)	698.25 (12.93)	547.66 (11.91)	146.08 (7.69)	1583.70 (11.48)
Caring of chicks and birds	391.68 (13.99)	1216.80 (15.21)	880.73 (13.55)	304.24 (12.68)	2793.45 (14.18)
All Activities	3507.62 (87.69)	10802.35 (102.89)	8694.02 (107.33)	4467.90 (101.54)	27472.89 (101.75)

Source: Field survey. (Figures in the brackets indicate average mandays.)

The Table 4.8 shows the total and average mandays devoted by women in activities related to livestock management. Activity-wise variations of mandays of women are shown for different farm size groups. The sample women spend highest mandays in activities like preparing food/feeding and cleaning shed and utensils. Average mandays devoted by them in preparing food/feeding is 30.42 for landless, 32.98 for small, 35.50 for medium and 36.69 for large categories of farm households. Grazing, fodder collection and cleaning of animals are mainly done by male workers in the study area. Women are found to perform these activities only occasionally. On average, mandays engaged in livestock rearing activities is lowest for landless women and highest for medium farms' women. Women's participation in livestock management is higher than cultivation except for landless households. Women of land holding categories mainly work as family labour and prefer to rear animals and poultry birds throughout the year for additional source of employment and earnings instead of hiring out labour for seasonal employments.

Figure 4.4: Activity Wise Mandays Devoted by Women in Livestock Management

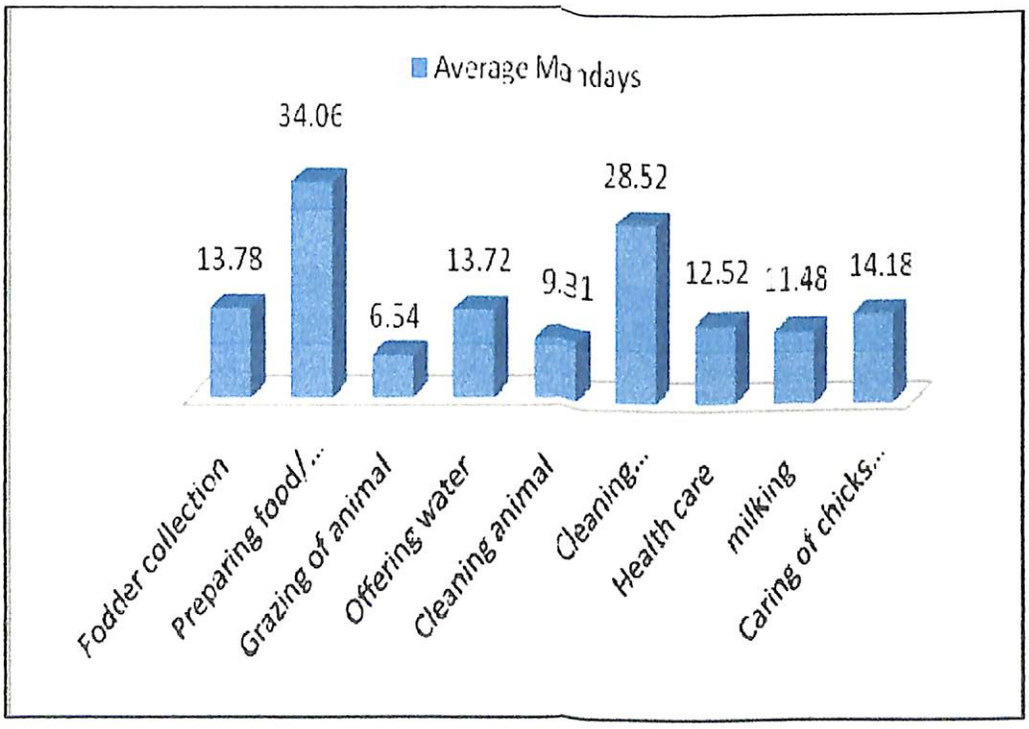
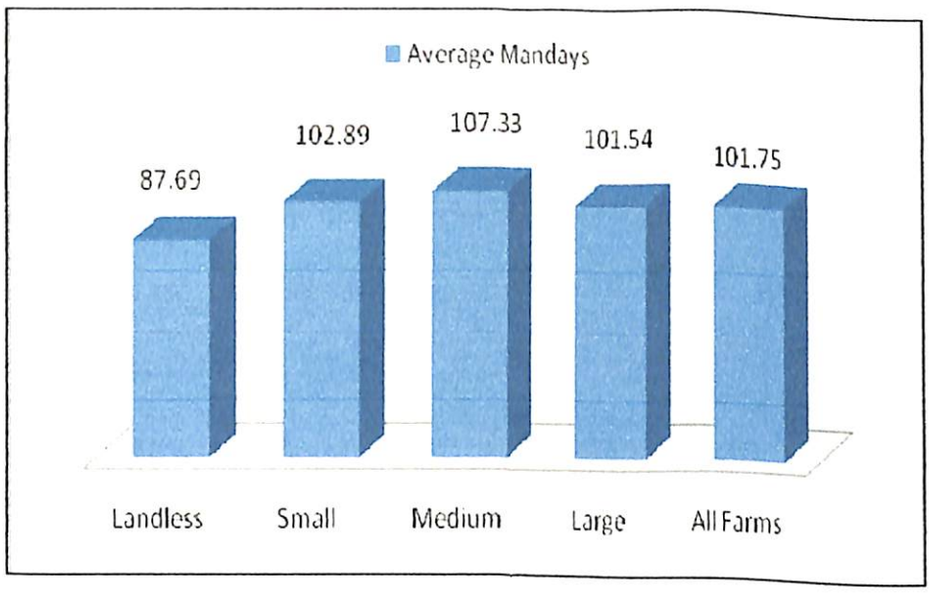


Figure 4.5: Farm Size Wise Average Mandays Devoted by Women in Livestock Management



Activity wise distribution of average mandays worked by women for all farm sizes taken together are 13.78 for fodder collection, 34.06 for preparing food and feeding, 6.54 for grazing animals, 13.72 for offering water to animals, 9.31 for cleaning animals, 28.52 for cleaning animal sheds and utensils, 12.52 for health care, 11.48 for milking and 14.18 for caring poultry birds. For all operations irrespective farm size, on an average, a woman devotes 101.75 mandays for livestock management activities (Table 4.8).

Average mandays worked by a woman in different farm size for all activities taken together are 87.69 for landless, 102.89 for small, 107.33 for medium and 101.54 for large farm households. Thus, mandays on an average, devoted by a women worker in animal rearing activities is highest for medium farm category and lowest for landless category among the farms. Participation of women in livestock management activities also increases with the increase in farm size except for large farms. This is mainly

because in large farms, hired labour (permanent or casual) are generally used for the activities which the women do not prefer to perform because of family status.

4.1.3.ii Participation of Women in Livestock Management in the Sample Blocks

In all the blocks women are mostly engaged in four main activities namely preparing food/feeding, cleaning shed/utensils, watering and poultry caring (Table 4.9). But in Dolongghat block, women are rarely engaged in grazing and cleaning animals as compared to other two blocks. Except it, pattern of labour use is similar amongst the blocks with little variations in mandays engaged in different livestock management activities.

Table 4.9: Total and Average Mandays Devoted by Women in the Sample Blocks

Activities	Mayong	Bhurbandha	Dolongghat	Total
Fodder collection	389.44 (12.17)	346.85 (11.96)	545.24 (17.04)	1281.53 (13.78)
Preparing food/ feeding	2745.2 (34.32)	2676.86 (32.25)	2889.62 (35.67)	8311.68 (34.06)
Grazing of animal	103.36 (5.17)	158.25 (9.31)	85.12 (5.32)	346.73 (6.54)
Offering water	1148.37 (14.91)	924.09 (13.39)	890.66 (12.72)	2963.12 (13.72)
Cleaning animal	304.32 (10.14)	275.4 (9.84)	184.03 (8.37)	763.75 (9.31)
Cleaning shed/utensils	2121.54 (26.19)	2345.85 (27.60)	2433.44 (31.20)	6900.83 (28.52)
Health care	931.42 (14.11)	823.89 (11.29)	772.79 (12.27)	2528.10 (12.52)
milking	584.13 (12.17)	508.15 (11.55)	491.42 (11.70)	1583.70 (11.48)
Caring of chicks and birds	987.15 (14.73)	889.85 (13.69)	916.45 (14.10)	2793.45 (14.18)
All Activities	9314.93 (103.5)	8949.19 (99.44)	9208.77 (102.32)	27472.89 (101.75)

Source: Field survey. (Figures in the brackets indicate average mandays.)

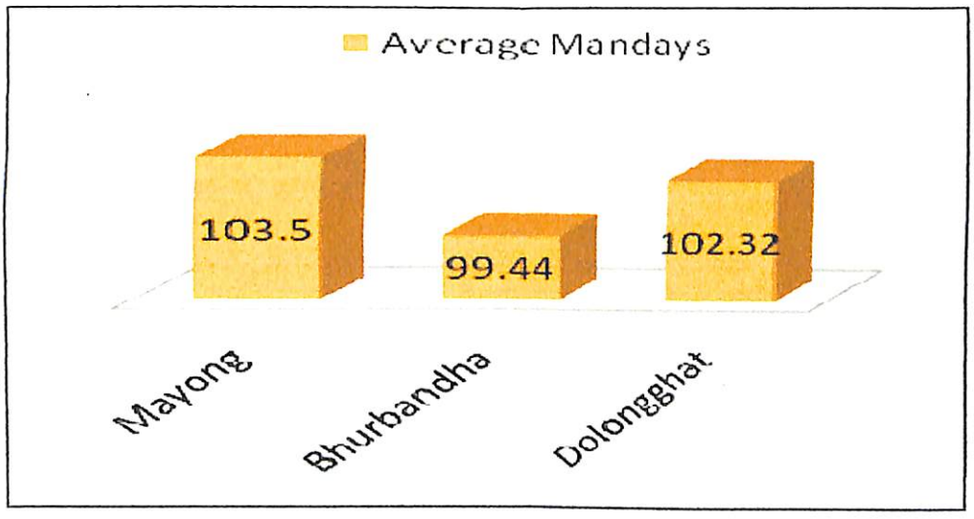
On average, in all activities taken together, mandays devoted by women irrespective of farm size is 103.5 in Mayong, 99.44 in Bhurbandha and 102.32 in Dolongghat block. No significant difference is observed in mandays worked by women workers of Mayong and Dolongghat block compared to that of Bhurbandha block.

Table 4.10: Farm Size Wise Total and Average Mandays Devoted by Women in the Sample Blocks

Farm size/Blocks	Mayong	Bhurbandha	Dolongghat
Landless	889.78 (80.89)	1279.30 (91.38)	1338.54 (89.24)
Small	4373.98 (104.14)	3445.92 (101.35)	2983.45 (102.88)
Medium	2821.50 (108.52)	2803.31 (103.83)	3069.21 (109.61)
Large	1229.67 (111.79)	1420.66 (94.71)	1817.57 (100.98)
All farms	9314.93 (103.5)	8949.19 (99.44)	9208.77 (102.32)

Source: Field survey.

Figure 4.6: Block Wise Participation of Women in Livestock Management



(Figures in the brackets indicate average mandays.)

Variation in mandays contributed by women in livestock management is also found by the size of farms amongst the sample blocks. It is found that the average

mandays devoted by women is highest in case of medium farm households in Bhurbandha and Dolongghat blocks and highest for large farm households in Mayong block. In case of landless category, women workers of Bhurbandha block devote the highest mandays, followed by Dolongghat block for medium farm category and Mayong block for small and large farm categories in livestock rearing activities. Thus, comparing the block wise mandays worked by women, women of Mayong block engage in highest number of mandays among the sample blocks.

4.1.4 Gender Division of Labour in Agriculture

Gender division of labour in the workforce is firmly rooted in socio-cultural tradition and is acquired through the process of socialization starting within the family. Gender is an important determinant of division of labour within the family as well as the community. In almost all the societies, women and men have been playing different role and responsibilities within the social structure experiencing different social realities and discrimination of power and resources. Gender division of labour is also influenced by the way society expects men and women to behave. Gender ideology reinforces the notion that women's work at home is not the work to be counted and for which men are reluctant to share domestic and child-care activities. But women devote a considerable portion of their productive time in such activities.

Gender plays a crucial role in the division of labour in productive and reproductive activities in almost all societies. Activities like care of family, food preparation, collection of fuel and water, cleaning and sanitation etc. are mostly carried out by women as unpaid labour. In contrast to these, productive works having remunerations and which are market oriented like selling of farm produce, buying of farm inputs are mostly performed by men. Sexual division of labour is a social

phenomenon rather than biological which is explained by social customs, conventions and practice which regulate the multifaceted relationship between women and men within the family as well as the society.

In agriculture, a strict division of labour on the basis of gender characterizes agricultural activities. Men generally undertake the activities which require physical strength, skill, technical knowledge and market related activities. On the contrary, women perform tedious, monotonous and low-paying jobs.

Division of labour on the basis of gender in the study area is also found to be prominent in agricultural activities. Some tasks are solely done by men and some by women. Some of the agricultural activities related to cultivation and management of livestock are predominantly performed either by male or female and some are done jointly.

Table 4.11: Gender Division of Labour in Agriculture

Category	Activities done by men only	Activities done by women only	Activities predominantly done by men	Activities predominantly done by women	Activities jointly done by men and women
Cultivation	Ploughing, crop carrying, application of chemical fertilizer and plant protection measures.	Threshing (manual) and husking (manual),	Field preparation, sowing, irrigation and threshing.	Transplanting, harvesting, winnowing and sun-drying.	Uprooting, weeding and storing.
Livestock management	Vaccination of animal.(modern method of healthcare)	Poultry rearing.	Grazing of animal, cleaning of animal and Fodder collection.	Preparation of food, feeding, offering water, cleaning of shed and cleaning utensils.	Healthcare (traditional) and milking.

Source: Field survey.

Table 4.11 indicates that in case of cultivation, four operations namely ploughing, crop carrying, application of chemical fertilizer and plant protection measures have been solely done by men whereas operations like threshing (manual) and husking (manual) are done solely by women. The operations namely transplanting, harvesting, winnowing and sun drying are predominantly performed by women while men predominantly perform the activities like field preparation, sowing, irrigation and threshing. The remaining operations are done by both men and women.

In case of livestock management, the activities related to vaccination of animal (not common for all the farm households) is performed by men only while poultry rearing is performed by women only in the sample villages. Activities namely grazing of animal, cleaning of animal and fodder collection are predominantly performed by men and preparation of food, feeding, cleaning of shed/ utensils and offering water are the operations that are predominantly performed by women. The activities like health care (traditional) of animals and milking are performed jointly by both men and women.

Thus activity wise analysis shows that there exists gender division of labour in agriculture in the study area. In case of cultivation more activities are dominated by men while more activities are dominated by women in case of livestock. It is observed that the activities which are more labour intensive, dedicated, time consuming and continuous in nature are predominantly performed by women and the activities which require physical strength and some skill and are directly related to income in agriculture are predominantly performed by men. It is reported by the respondents that they have been involved actively in cultivation and livestock activities, but their participation is marginal in managerial and skill needed activity.

4.1.5 Involvement of Men and Women in Cultivation

Activity wise involvement of men and women in agriculture is analysed on the basis of their extent of participation which is measured in terms of mandays engaged in different activities.

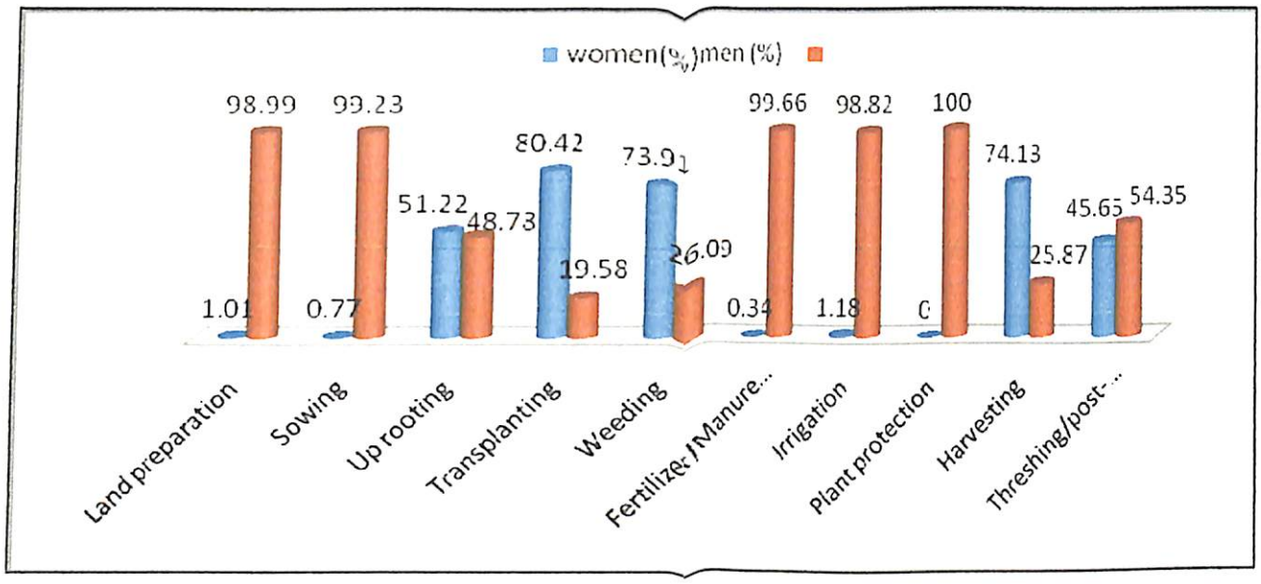
Table 4.12: Activities Undertaken by Men and Women in Cultivation in Terms of Mandays. (N=270)

Activities	Mandays devoted by Men	Percentage (%)	Mandays devoted by Women	Percentage (%)
Land preparation	9319.5	98.99	95	1.01
Sowing	837.5	99.23	6.5	0.77
Up rooting	412.25	48.78	432.88	51.22
Transplanting	2159.75	19.58	8870.25	80.42
Weeding	474	26.09	1343	73.91
Fertilizer/Manure application	4238	99.66	14.5	0.34
Irrigation	1381.25	98.82	16.5	1.18
Plant protection	965.25	100	0	0
Harvesting	2805.5	25.87	8040.63	74.13
Threshing/post-harvest operations	4153.38	54.35	3488.51	45.65
Total Mandays	26746.38	54.52	22307.77	45.48
Average Mandays	99.06		82.62	

Source: Field survey.

Table 4.12 shows total man days devoted by men and women in each activity related to cultivation of crops. Man days devoted by women in uprooting, transplanting, weeding and harvesting have been found to be more than the percentage devoted by men. Their participation in post harvest operations has also found to be significant. But in case of other activities of cultivation, women's participation is found to be marginal and insignificant. The figure 4.7 shows the percentage of man days devoted by men and women in each activity related to rice cultivation.

Figure 4.7: Percentage of Mandays Devoted by Men and Women in Cultivation



Percentage of man days devoted by women is more in transplanting, harvesting, weeding and uprooting than the percentage devoted by men and zero in application of plant protection measures. Their participation in threshing/ post harvest operation is found to be large and almost zero in remaining activities. It has been found that on average a woman devotes 82.62 mandays against 99.06 mandays devoted by men in cultivation of crops in the sample villages.

4.1.6 Involvement of Men and Women in Livestock Management

The involvement of men and women in livestock management activities is also analysed on the basis of their extent of participation which is measured in terms of man days devoted by an adult male and female in each activity. Here for each activity average hour spent by both male and female have been collected and then converted into mandays to measure their level of participation in these activities.

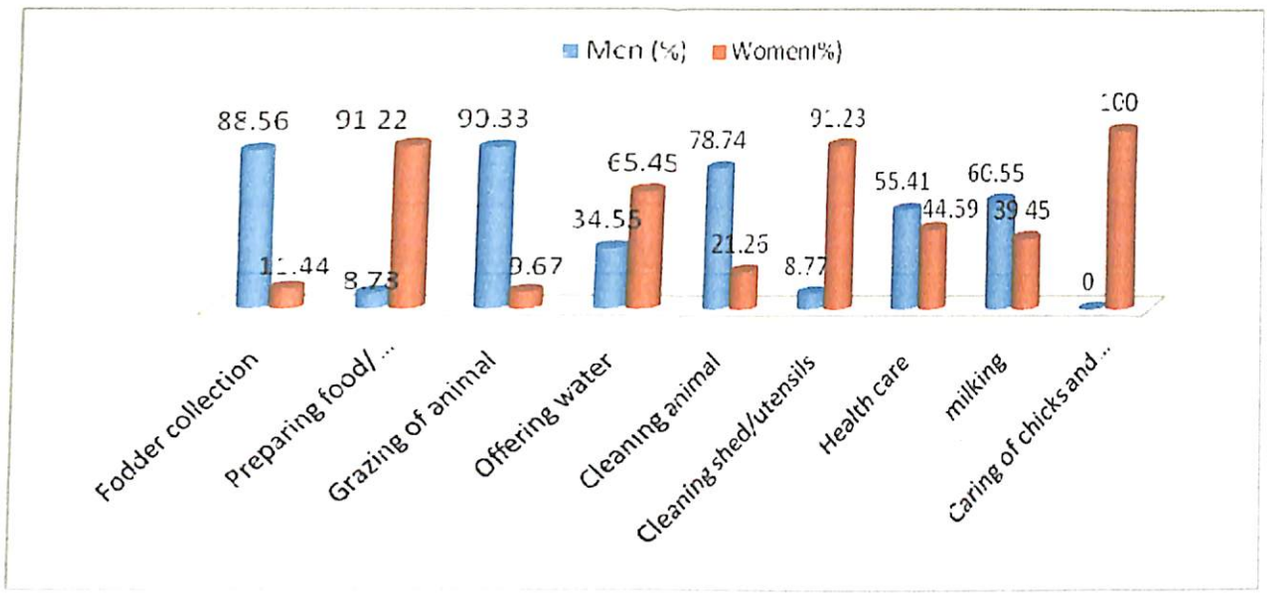
Table 4.13: Activities Undertaken by Men and Women in Livestock Management in Terms of Mandays

Activities	Mandays devoted by Men	Percentage (%)	Mandays devoted by Women	Percentage (%)
Fodder collection	9922.94	88.56	1281.53	11.44
Preparing food/ feeding	799.84	8.78	8311.68	91.22
Grazing of animal	3239.64	90.33	346.73	9.67
Offering water	1564.04	34.55	2963.12	65.45
Cleaning animal	2829.08	78.74	763.75	21.26
Cleaning shed/utensils	663.64	8.77	6900.83	91.23
Health care	3141.55	55.41	2528.1	44.59
Milking	2431.02	60.55	1583.7	39.45
Caring of chicks/birds	0	0	2793.45	100
Total Mandays	24591.75	47.23	27472.89	52.77
Average Mandays	91.08		101.75	

Source: Field survey.

Table 4.13 shows the extent of participation of men and women in livestock management activities. Involvement of women has been found to be widespread. Except the activities like fodder collection, grazing and cleaning of animals, extent of women's participation has been significant. In the activities like preparing food/ feeding and cleaning shed/utensils, more than 90 percent of the mandays are devoted by women.

Figure 4.8: Percentage of Mandays Devoted in Livestock Management



The figure 4.8 shows the percentage of mandays engaged by male and female family members of the sample households in different activities of livestock management. Percentage of mandays devoted by women in caring of poultry birds is 100 per cent and in activities like food preparation/ feeding, watering, cleaning shed, cleaning utensils used for animals has been found to be more than their male counterparts. But their participation has been found to be marginal in the activities like collection of fodder, grazing and cleaning of animals. It has been found that on an average, a woman devotes 101.75 mandays against 91.08 mandays devoted by men in livestock management activities.

Conclusion

From the forgoing analysis, it has been found that women's participation in agricultural activities is quite widespread and they devote a considerable time in these activities. In activities related to crop cultivation, on average, a woman devotes 82.62 mandays per farm household. In case of different farm sizes, on average, a woman

devotes 94.13 mandays in landless, 74.56 mandays in small, 88.90 mandays in medium and 79.85 mandays in large farm categories of households. Women's contribution, however, varies from activity to activity. Farm women are almost wholly responsible for transplanting, harvesting, winnowing and sun-drying and contribute more than 70 per cent of the total mandays devoted in these activities. They also participate extensively in activities like uprooting, weeding, cleaning and storing of grains and contribute about 50 per cent of the total mandays engaged in such activities. Women's share in activities related to land preparation, sowing, irrigation and application of fertilizer, pesticides and insecticides is very negligible. A total of 181.68 mandays are devoted on cultivation by the sample farm households. Out of this, 82.62 mandays are contributed by women and 99.06 mandays by men.

Regarding the block-wise participation of women in cultivation, women in Mayong block contributed the highest mandays compared to the other sample blocks in different activities of cultivation as a whole. The farm size wise participation of women in different blocks also shows that mandays devoted by women in Mayong block is higher in all size of farms except the landless category where mandays devoted by women of Bhurbandha block I s the highest.

The participation of women workers in livestock management is more than that of men in all the sample farm households. A total of 192.83 mandays are devoted by the sample farms in livestock management and out of this, 101.75 mandays are contributed by women and 91.08 mandays by men. In case of different farm sizes, on average, a woman devotes 87.69 mandays in landless category, 102.89 mandays in small, 107.33 mandays in medium and 101.54 mandays in large farm categories. While examining women's participation in livestock related activities in different blocks, it is found that

women in Mayong block engaged highest mandays in such activities. But based on farm size, participation of women varies among the sample blocks. Highest mandays is devoted by the women of Bhurbandha block in case of landless households while women of small and large farm categories of Mayong block devoted highest mandays and women of medium farm category of Dolongghat devoted highest mandays in livestock management. It has also been observed that in both cultivation and livestock rearing, farm women of Mayong block have devoted significantly higher time in terms of mandays in comparison to other two blocks. This finding also proves that tribal women participate more in agriculture as Mayong is a tribal dominant block and 65.5 per cent of sample households in the block is from schedule tribe.

From the study, it is also found that contribution of women increases with the increase in farm size except for large farm households. This is mainly because these households depend more on hired labour for farm activities compared to other farm households.

To sum up, from the analysis of labour use in agriculture, a clear segregation in agricultural activities by sex is observed. Though women share a large burden of agricultural activities, they are assigned with inferior role. Activities requiring use of machines and skill, new inputs and market related activities are operated and controlled by men. Women are mostly engaged laborious and monotonous work and not the work related to marketing activities. On the contrary, the burden of domestic activities which are regarded unproductive work is almost wholly on women workers of the farm households. During the field survey, respondents reported that on average a woman spends 6 to 8 hours daily on household chores whereas a man spends only 1 to 2 hours in such activities. If mandays engaged in domestic works are included in the total labour

use of the family members, women's share will be higher than men in the sample farm households. Thus women bear the double burden of household work and productive work, though their contributions as worker are often neglected and unrecognized.

PART-B

4.2 Income of Women Workers Derived from Agriculture

Women labour is an important component of the total labour inputs in agriculture. Agriculture as a large unorganized sector provides employment and income for a larger portion of women workers in rural Assam. Contribution of women workers toward agricultural production depends on the nature of participation of women workers in agricultural activities. The assessment of contribution made by women in agriculture is done on the basis of the mandays worked by them in farm and livestock based activities. This can be regarded as physical contribution. But the physical contribution can be converted into monetary or economic contribution. When the mandays devoted by women in agriculture is multiplied by the current agricultural wage rate for women prevailing in the study area, women's economic contribution or women's income from agriculture is derived. Such an assessment will reveal the proportion of income shared by the women in agriculture and also indicate the role of women workers in agriculture.

Therefore, an attempt has been made to assess the income of women workers derived from agriculture and their contribution to the family income by different farm sizes.

4.2.1 Physical Contribution of Women

To determine the total physical contribution of women workers in agricultural production, their work days in terms of mandays devoted to crop production and livestock management are aggregated and calculated in relation to the total labour inputs.

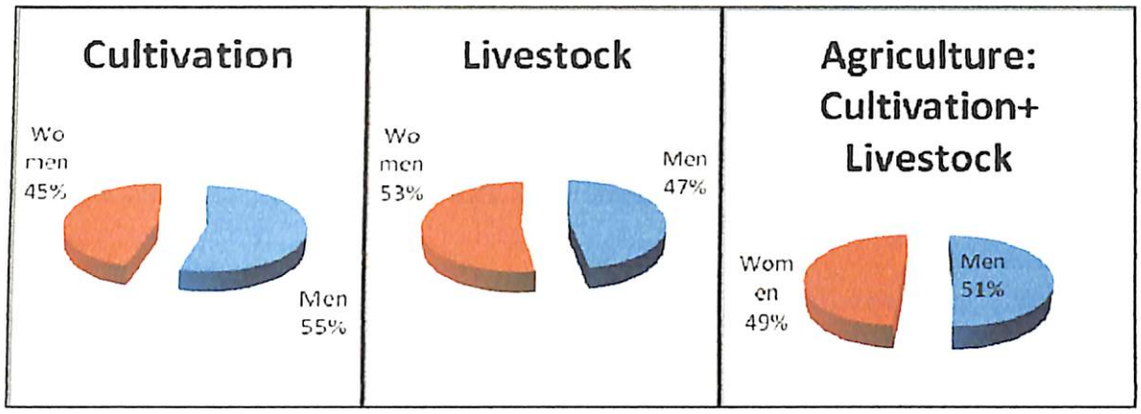
Table 4.14: Percentage Share Contributed by Men and Women in Agriculture

Category	Total Annual Labour Inputs (Total annual mandays worked by women and men)	Women's Role	
		Total annual mandays worked by women	Percentage share contributed by women
Crop cultivation	49054.15	22307.77	45.48
Livestock	52064.64	27472.89	52.77
Total (Agriculture)	101118.79	49780.66	49.23

The data in Table 4.14 reveals that the total annual labour inputs contributed by both men and women workers in crop production and livestock management is 101118.79 mandays. Out of this, 49054.15 mandays are for crop production and 52064.64 mandays for livestock management activities. Women workers of sample households have contributed annually a total of 49780.66 mandays in agriculture against 51338.13 mandays by men.

The percentage share of total labour contributed by sample women annually towards agriculture and allied activities is 49.23 percent. They contribute 45.48 percent in cultivation and 52.77 percent in livestock management. The percentage share of total labour contributed annually by men figures at 50.77 percent. They contribute 54.52 percent in cultivation and 47.23 percent in livestock management. Thus women workers play an important role in providing support to the male members of the farm family to carry on agriculture as their source of livelihood.

Figure 4.9: Percentage Share of Men and Women in Agriculture



During the personal interview with the respondents, it is reported that their contribution to the family income compared to male is less as they engage in unpaid domestic works. It is worth mentioning that if the labour time devoted by women in farm support domestic activities like preparing food, carrying tiffin to the field etc. is taken into account, their contribution to family income from agriculture would be higher.

The percentage share of total labour inputs in terms of mandays contributed by women workers in agriculture by farm sizes towards their family has been shown in Table 4.15. It is clear from the table that women of all farm sizes contribute a significant proportion of the total mandays devoted in agriculture.

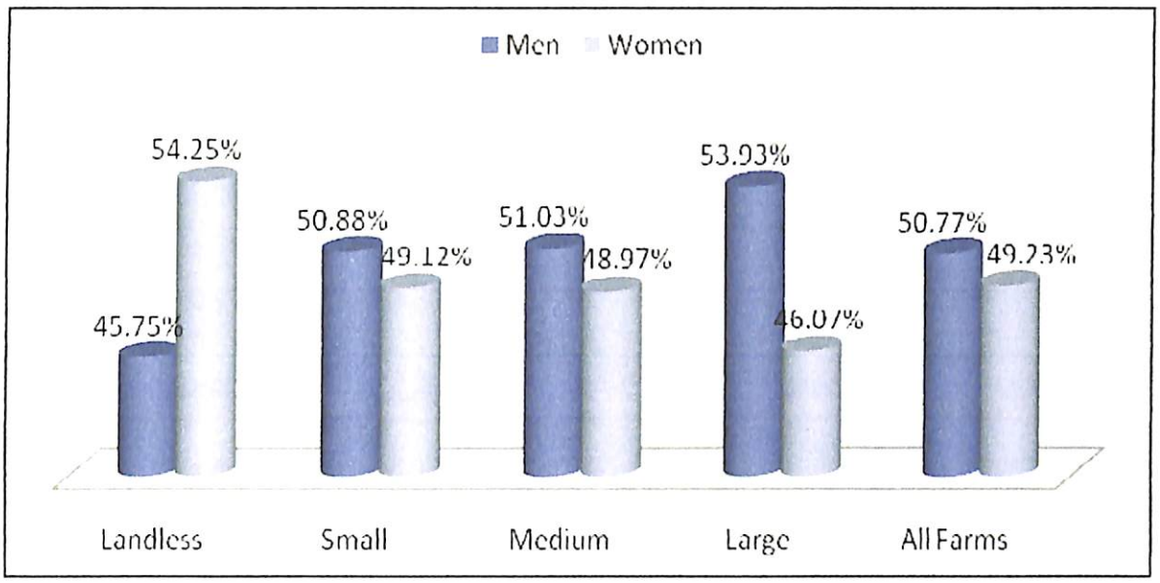
Table 4.15: Farm size Wise Contribution (Annual) of Women in Agriculture (in percentage)

Category	Landless (N=40)		Small (N=105)		Medium (N=81)		Large (N=44)	
	Total mandays	Women's share	Total mandays	Women's share	Total mandays	Women's share	Total mandays	Women's share
Cultivation	6756.25	55.73	16852.13	46.45	16299.26	44.18	9146.51	38.41
Livestock Management	6650.52	52.74	21076.15	51.26	16160.88	53.8	8177.09	54.64
Total (Agriculture)	13406.77	54.25	37928.28	49.12	32460.14	48.97	17323.6	46.07

(Total mandays consist of mandays worked by men and women in agriculture.)

Figure 4.10 presents farm size wise percentage of total mandays devoted by men and women in agriculture. Women's contribution to their respective farm households stands at 54.25 percent for landless category and 49.12 percent for small, 48.97 percent for medium and 46.07 percent for large farm categories respectively.

Figure 4.10: Farm Size Wise Percentage of total Mandays Contributed by Men and Women



4.2.2 Income of Women Workers Derived from Agriculture

The labour force in rural Assam is categorized as skilled, semi-skilled and unskilled classes. The skilled labour in rural area includes technicians, ploughmen, artisans, gardeners and managers of agricultural production by way of labour supervision and farm management whereas all other cultural operations performed by male workers are considered as semi-skilled labour. However the women workers performing farm activities are referred as unskilled labour and they are generally assigned with tedious farm works such as transplanting, weeding, harvesting, winnowing, fodder collection, milking etc. though working hours for all types of labour are similar which is 8 hours per

day. The wage rate prevailing in the district of Morigaon has an average of Rs.150 per day for unskilled or women workers.

The daily agricultural wage rate for women workers in the study area is Rs. 150.00 including mid-day meal whereas the rate range between Rs. 250.00 and Rs.300.00 in case of male workers which is much higher than that of female workers. It is observed that workers have to accept the wage rate including lunch whether they prefer it or not. Agricultural wage rate excluding meal is not popular or practicing in the study area.

The sample women workers consist of both unpaid family workers and paid agricultural workers. Some of the sample women work only in their family farms as unpaid workers, some work in both family farms as unpaid labour and in other's farm as paid or waged labour and landless women work only as waged agricultural workers. Consequently, economic contribution of women workers in agriculture is measured on the basis of total mandays worked by the sample women both as family and wage labour in agriculture and allied sector. However, hours spent in housekeeping are excluded in order to derive the income of women workers from agricultural and livestock activities. Thus the contribution of farm women workers to the family income is measured by multiplying their average annual working days (mandays) in agriculture and allied fields with the prevailing agricultural wage rate in the study area. The following table shows the income of sample farm women to their family income derived from agriculture. The average annual working days on the basis of mandays are multiplied by Rs. 150.00 which is the prevailing agricultural wage rate for women in the study area.

Table 4.16: Income of Women Workers in Agriculture (per worker per household)

Category	Average annual mandays contributed by women	Prevailing agricultural wage rate for women (in Rs.)	Average annual income of women (in Rs.)
Cultivation	82.62	150.00	12393.00
Livestock	101.75	150.00	15262.50
Total Contribution	184.37	150.00	27655.50

From Table 4.16, it is clear that the average annual income of women workers of farm households from agriculture (cultivation + livestock) becomes Rs. 27655.50. They derive income from crop cultivation is Rs.12393.00 and from livestock management is Rs.15262.50. The share of women's income from livestock management is higher than that of crop production. But unfortunately most of the activities related to livestock rearing are unaccounted and considered as domestic work. The following table shows contribution of sample women by different farm sizes.

Table 4.17: Contribution of Women Workers to the Family Income by the Farm Size

Category/Farm size	Landless		Small		Medium		Large	
	Average annual mandays	Average annual income	Average annual mandays	Average annual income	Average annual mandays	Average annual income	Average annual mandays	Average annual income
Crop production	94.13	Rs.14119.50	74.56	Rs.11184.00	88.90	Rs.13335.00	79.85	Rs.11977.50
Livestock Management	87.69	Rs.13153.50	102.89	Rs.15433.50	107.33	Rs.16099.50	101.54	Rs.15231.00
Total contribution in agriculture	181.82	Rs.27273.00	177.45	Rs.26617.50	196.23	Rs.29434.50	181.39	Rs.27208.50

Source: Field survey.

Table 4.17 reveals that as a whole, contribution of women workers to total agricultural income of the family in medium farm households is the highest followed by landless, large and small farm households. Due to large size of holding compared to small farms, but financially not strong as large farms to hire in labour, women of medium farms have to perform various farm activities in their own farms. This was the main reason of high contribution of women of medium farm households to the family income. Among the different farm size, contribution of women to the family income from cultivation was the highest for landless category. Mainly due to poor economic condition, landless women prefer to work in another person's farms as a source of their livelihood.

The present study thus concludes that women workers of all farm size groups contribute significantly from agricultural income towards their family income in contrast to the popular belief that women workers help only marginally in agricultural activities. **Thus the findings prove the first research question.**

Conclusion

Women's contribution to the family income compared to male is less as women are engaged in unpaid domestic works. Similarly if the wage rate for women and men would be equal or if there is no discrimination in wages by sex, women's contribution to the family income of farm households would be much higher than the present contribution. However, as women in most cases are themselves not aware of their contribution towards agricultural production and domestic requirements, many productive activities performed by them are not taken into account because of under reporting. It has been observed that with the increase in household income, the sample women of high income group devote more time in household chores. The share of

women workers to their family income will be higher than men if their domestic activities are measured in terms of market prices.

Thus, from this study it is proved that farm women workers play a key role in the maintenance of family budget. They devote quite a good time and efforts in attending farm activities and caring the livestock in addition to the household responsibilities.

CHAPTER V

PROBLEMS IN AGRICULTURE

Introduction

Having discussed the participation of women in agriculture in the previous chapter, the present chapter analyses the various problems faced by women workers engaged in agriculture in the study area. Women workers in agriculture and allied activities face various problems, which act as the main obstacles in their path of progress and hinder the growth of the agricultural sector also. These problems are mainly responsible for the women workers staying at subsistence level and having a low status.

5.1 Problems Faced by Women Workers in Agriculture

Broadly, the problems of farm women workers can be classified into three groups viz. social, economic and technical problems. Social problems stem from the low status of women workers in the rural hierarchy. The economic problems arise due to poor economic condition, lack of access to credit, inadequacy of employment opportunities and inadequate diversification of economic activity in rural areas. The technical problems are mainly created due to low literacy level, lack of mobility and lack of technical know-how of modern technology. Women workers are dispersed, unorganized and generally have poor bargaining power. They are one of the exploited sections of the society. Many of the farm women workers do not have land holdings for cultivation of crops. But they are involved in homestead gardening where they grow various vegetables and livestock management activities from where they get many poultry and dairy products.

In the present study, constraints faced by women workers in agriculture have been identified in consultation with the farm women in the pilot survey and also with the male household heads and the agricultural extension officers of the district. After identifying the problems, they are ranked following the Garret ranking technique. Henry Garret's ranking technique is fitted in this research problem to rank the problems faced by farm women workers. At the first step, respondents are asked to the rank the enlisted factors. The enlisted factors are those factors which were identified in the pilot survey. Respondents are asked to rank the listed constraints. Garret's ranking method is appropriate in this study because it provides the change of orders of constraints and advantages into numerical scores. The orders of merit assigned by the respondents are then constructed into percentage position using the formula.

$$\textbf{Percentage position} = 100 \times (Rij - 0.5)/Nj$$

Where, **Rij** = Rank given for i^{th} factor by the j^{th} individual

Nj = Number of factors ranked by j^{th} individual.

The percentage position of each rank is converted into scores referring to the table given by Garrett and Woodworth (1969). For each factor, the scores of individual respondent is then added together and divided by the total number of the respondents for whom scores are added. These mean scores for all the constraints are arranged in descending order and the constraints are accordingly ranked. The prime advantage of this technique over simple frequency distribution is that the constraints are arranged based on their severity from the point of view of respondents. Hence, the same number of respondents on two or more constraints may have been given different rank.

The set of 15 constraints faced by women workers in agriculture which influence their participation have been identified in the pilot survey. In this regards, in-depth interview method was also conducted with the respondents to share their experience and to get qualitative information regarding their problems. The identified problems on the basis of qualitative information have been discussed below.

1. Women's Reproductive Role and Child Care Practices

A major constraint faced by rural farm women workers is their reproductive role and child care practices which effect the extent of their involvement in agricultural activities. Some respondents reported that reproductive and child care activities are so labourious and time consuming that they are unable to fully engage in agricultural activities. Sometimes in case of women having babies, one has to leave the field early or hardly work for two to three hours to feed and take care of their babies. Thus, it is observed that culturally stereotyped portrayal of women as mother or homemaker rather than worker or individual who contribute to agricultural development still continues in the study area.

2. Dual Responsibility at Home and Farm

Family and work are two main domains in women's life. Balancing family and work has become the prime liability for them. Women's economic and domestic workloads impose severe burden on them. Playing dual role of a homemaker and working women is perceived as a very important problem as reported by most of the respondents. In spite of the constitutional provision, gender role and gender bias create obstacle in performing women's role as worker. In many of the households in the study area, farm women play a secondary role in agriculture. They support their husbands in

farm operations. Another problem of sample women working in the fields is excess workload. Some respondents expressed that over involvement in both farm work and domestic work affect their health and they feel psychologically depressed.

3. Social Customs, Cultural Norms and Traditional Beliefs

Social customs, cultural norms and traditional beliefs affect the duration of working hours and days in a year for women workers in agriculture. Many socially accepted habits like social ceremony, recreation, festivals, rituals etc. and also the monthly cycle of women restrain them to work on fields. During my survey and interactions with the respondents, the most influencing social taboo is that during the period of menstruation, women are not allowed to do any work on fields and also in kitchen and worship place. Patriarchal social set up together with cultural norms and traditional beliefs hinders women's participation in farm activities. Some respondents revealed that whether and to what extent they will be available for work outside the home is decided by the social and economic consideration of their family and the serving community. Some also reported that not only their husbands, their in-laws also decide their type of work and time of working. Again laws and customs impede women's access to production inputs. The traditional and social custom in the study area is that the key resources like land cannot be owned by women. If a woman happens to have land by any means, the power to decide what to do with that land is vested on her husband or in-laws. Thus, women workers in agriculture face problems in performing their works due to unique circumstances created by cultural and social norms applied to gender discrimination.

4. Poor Economic Condition

Poor economic condition of the farm household is one of the major constraints confronted by farm women workers. Most of the respondents express that they are not able to finance farming practices due to lack of money and credit and some even have not enough money for proper diet. Women with poor diet are not energetic enough to get involved in farming activities and usually suffer from malnutrition. As farming requires strength and determination, poverty has been a major problem in the study area in particular and rural areas of Assam in general. During the interview with the respondents, it is revealed that they often have low productivity as they cannot afford to apply improved agricultural inputs in agriculture like chemical fertilizer, pesticides etc. The discrimination in wages for farm women labourers and their poor purchasing power do not allow them to get the necessary inputs. The high price of these inputs in the market and the poor economic condition of farm women has a very detrimental effect on agricultural activities.

5. Health and Mal-nutrition Problem

In most of the rural areas of Assam, women's health is a matter of concern. The case is not different with the women of the study area. More than 50 percent of the respondents are of the opinion that they often do not receive proper nutritive diet which results in their low health status. This makes them more prone to diseases. When they work as labourer in agriculture, it negatively affects their productivity which is automatically low. Almost all the respondents are of the opinion that they suffer from some health problems like back-pain, headache and fatigue due to awkward position of performing farm activities and monotonous nature of works. Some respondents reported that their foods are not proper nutritive and healthy. In majority cases, women workers

with long working hours, restlessness, household responsibility and high workload along with malnutrition face serious health problems.

6. Non Recognition of Women's Contribution

The problem of non-recognition of women's contribution to agricultural development is another constraint faced by the women workers of farm households. It is observed that in the study area women's participation is considered to be low in agricultural development not because of their lower participation than man, but because of their contribution goes unrecognized and unrecorded mostly. They are primarily responsible for cultivating and harvesting food crops needed for their household livelihood, though their efforts go unpaid and unrecorded. These works are considered primarily as women's responsibility though there is no tangible monetary value for their work. During the personal interview, one of the respondents said, "Our contribution is rarely recognized and income from non-farm employment of men is relatively more recognized".

7. Natural Environment

As natural climate or environment is unpredictable and farm women workers coupled with illiteracy are unable to foresee weather trends. So any unexpected change badly affects their work. Climate change has brought unexpected situations in the form of flood, drought, temperature fluctuation etc. which disturb cropping season. These things create hardships for farming activities and create problems for women workers in agriculture.

8. Low Level of Women's Literacy

Low literacy level among farm women and drop-out of school is a major factor that hindered their growth as workers in agriculture. Education is not only a basic right but also helps in bringing new opportunities and scope for improving one's circumstances in life. More women than men are illiterate and the lower a country's literacy rate, the wider the gap between the two sexes.

From the discussion with the respondents, it came to know that due to lack of education women are unaware of how and why modern means of technology should be used in agriculture for more production. They often hesitate and feel reluctant to participate in public meetings and also play an insignificant role in decision making because of their illiteracy or low literacy. Women's low educational qualification determines the extent and manner of their participation in economic activities. Much of the economic activities performed by women are an extension of their household duties. The activities are low paying and unskilled which do not provide wide economic opportunities to women, but just to improve the welfare of their households.

9. Lack of Family Support

Lack of family support is another main problem faced by women workers in agriculture. Lack of emotional support and lack of time for husband are common problem faced by them. In case of women agricultural labourers, after a day work outside home, they are so tired in the evening that they sometimes cannot involve in household work. Imbalance between family and work roles leads to occupational or job stress. During interaction with the farm women, some of them informed that their family head (husband or sometime in-laws) did not support them to work on fields without

completing their household works. They also resisted them from working according to their will. Thus, working in such circumstances inevitably put stain on farm women to a great extent making them less interested in agricultural works.

10. Lack of Access to Credit

Lack of credit and indebtedness is a major financial constraint for women workers in performing agricultural practices. According to the respondents, loans from financial institutions are not easily available to them and not at cheap interest rate for agricultural development and livestock farming. They also face hurdles in obtaining credit from agricultural development projects for farm development. Socio-cultural, legal and institutional constraints restrict farm women's access to credit including their low educational level, lack of knowledge regarding credit programmes and opportunities, lack of collateral (such as land) and also the complex procedures of securing credit. In the study area, rural farm women do not have easy and direct access to agricultural credit from institutional sources. They, however, have formed Self Help Groups (SHGs) for micro finance and have availed loans in time of their need.

11. Lack of Technical Know-how

The introduction of new technology in agriculture for productivity and efficiency development is indispensable now-a-days. Use of technology requires education to handle and operate them. But low level of education among the respondents including illiterate and functionally literate restrict them to handle and use modern machines and tools in farming activities. In livestock management practices also, respondents mainly adopt traditional methods. Farm women disclose that they still prefer traditional heath care practices in spite of going to veterinary department. They hardly vaccinate their

animals. In addition to this fact, the access to training and extension service on the use of new technology and other means of productivity enhancement are mainly for the male members with little or almost no training for women. One respondent said, "The high price of fertilizers and water shortage are some of our major problems. But due to lack of training on how to use the available fertilizers and water more efficiently, we cannot increase our productivity per acre." Men and women are differently affected by the change in technology. It is observed that since women are considered as secondary workers, hence they are not found to be actively involved in the dissemination of knowledge about new technology given by extension workers. As a result they remain confined to their traditional package of practice.

12. Lack of Access to Land and Other Productive Resources

One of the major problems that women face in agriculture is the problem of access to patta or title on land. Farm women workers in the study area still do not have ownership of land and because of which they cannot take independent decision on various aspects of agricultural development. Women work on the land owned by either their husbands or other male head of the family. This triggers the problem of accessing credit facilities offered to those only who have the ownership rights of land. Ownership of land is strictly held by male farmers of the society. Moreover, the society being patriarchal, women have been controlled by men for long and have been denied the right to access to productive resources. Many respondents of the study area are of the opinion that traditions and social norms prevent women from inheriting and having control over land and other productive resources.

13. Migration

In recent times, women workers in agriculture have been put into more complex and demanding life style because of accelerated rate of male migration to urban areas in search of jobs or better earning opportunities in non-agricultural sector. This trend affects rural farm families in terms of out-migration of the male members and leaving behind all farming responsibilities upon women, particularly farm activities. As a result, farm women are left behind with an extensive load of farm works as paid or unpaid family labour.

14. Secondary Status in Decision Making

During the interaction with the respondents, it is known that they have little control over decision making process either inside or outside home. One of the respondents said, "The decision about selection of crop varieties, irrigation, fertilizer and plant protection are taken by our males. Our duty is to share our labour with male members at farm". Another woman revealed, "We are taught always to be submissive in front of elders as well as with in-laws. My husband seldom discusses the matters related to crop cultivation with me, but discusses them generally with their male colleagues during social gatherings at evening".

Women's secondary status in decision making hinders the growth of women as a farmer. Farm women workers are mostly unpaid family workers and poor in decision making. They face more constraints than men in receiving productive resources, land, training and also excess to market. Without access to decision making abilities in household and agricultural matters, women lack the resources that are necessary for their labour stability.

15. Lack of Mobility

Lack of mobility of women in male dominated patriarchal social set up is another constraint faced by women workers in the study area. During the field survey, it is reported by some respondents that due to restriction in their mobility, they cannot approach the agricultural extension services or participate in skill enhancement programmes even if the programmes are organized in their villages. There is also less availability of vehicle or transport facilities for rural women to access these agricultural extension services which impact negatively on their productivity in agriculture.

The identified problems faced by farm women in agriculture are listed in the table below.

Table 5.1: Problems Faced by Women Workers in Agriculture

Sl. No.	Problems / Factors	
1	F_1	Women's reproductive role and child care practices
2	F_2	Dual responsibility at home and farm
3	F_3	Social customs and traditional belief
4	F_4	Poor economic condition
5	F_5	Health and mal-nutrition problem
6	F_6	Non- recognition of women's contribution
7	F_7	Natural environment
8	F_8	Low level of women's literacy
9	F_9	Lack of family support
10	F_{10}	Lack of access to credit
11	F_{11}	Lack of technical know-how
12	F_{12}	Lack of access to land and other productive resources
13	F_{13}	Male out migration
14	F_{14}	Secondary status in decision making
15	F_{15}	Lack of mobility

Garret ranking technique has been used to rank the problems faced by women workers engaged in agriculture and allied activities in the study area. The percentage

position is calculated by using the Garret's formula for percentage position and shown in Table 5.2.

Table 5.2: Percentage Position and their Corresponding Garret's Table Values

Rank	Percentage Position		Garret Table Values
1	100(1-0.5)/15	3.33	85
2	100(2-0.5)/15	10	75
3	100(3-0.5)/15	16.66	70
4	100(4-0.5)/15	23.33	64
5	100(5-0.5)/15	30	60
6	100(6-0.5)/15	36.66	57
7	100(7-0.5)/15	43.33	53
8	100(8-0.5)/15	50	50
9	100(9-0.5)/15	56.66	47
10	100(10-0.5)/15	63.33	43
11	100(11-0.5)/15	70	40
12	100(12-0.5)/15	76.66	36
13	100(13-0.5)/15	83.33	31
14	100(14-0.5)/15	90	24
15	100(15-0.5)/15	96.66	15

Percentage position = 100 (Rij – 0.5) /Nj Where Rij =1st, 2nd, 3rd, ... up to 15th rank and Nj = Total ranks given by 270 respondents = 15.

The respondents were asked to rank listed fifteen factors as 1st, 2nd, 3rd, 4th .....15th in order to know their preference in the selection of constraints. The calculated percentage position for the rank 1st, 2nd, 3rd.....15th and their correspondent Garret table values are shown in Table 5.3. For each factor, the total score is calculated by multiplying the number of respondents ranking that factor as 1st, 2nd, 3rd ..... and 15th with the respective Garret table values of the ranks.

Table 5.3: Preference-wise Ranking of Problems faced by Women Workers in Agriculture

Sl. No.	Factors/ Problems	Rank															Total No. of respondents	Total score
		1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th		
1	F_1	157	35	18	12	10	10	16	12	0	0	0	0	0	0	0	270	20616
2	F_2	52	33	25	22	15	24	6	22	12	7	15	9	9	5	14	270	16137
3	F_3	11	45	44	30	35	5	13	5	8	9	8	12	21	14	10	270	12986
4	F_4	12	30	29	20	51	9	20	8	5	6	7	20	10	18	25	270	14423
5	F_5	8	32	30	43	48	11	4	12	9	19	18	5	13	12	6	270	15127
6	F_6	0	5	24	11	9	18	20	17	19	22	21	20	28	28	28	270	11657
7	F_7	0	4	6	16	13	17	19	16	40	14	25	26	27	23	24	270	11467
8	F_8	12	5	22	12	8	24	22	23	25	21	20	15	20	19	22	270	12691
9	F_9	0	8	25	9	12	13	18	20	23	13	27	25	24	27	26	270	11743
10	F_{10}	0	6	9	19	7	29	26	27	24	43	23	19	13	11	14	270	12555
11	F_{11}	0	15	7	18	8	28	24	25	22	26	33	18	18	16	13	270	12582
12	F_{12}	9	13	5	12	20	15	17	18	16	20	17	28	25	29	26	270	11875
13	F_{13}	0	21	6	9	13	26	25	24	28	27	20	17	11	27	16	270	11051
14	F_{14}	9	6	13	19	12	25	23	26	21	24	22	16	21	15	18	270	12761
15	F_{15}	0	12	7	18	9	16	17	15	18	19	15	40	30	26	28	270	11322

Source: Field survey.

The mean scores for all the factors are arranged in descending order (Table5.4), revealing the rank of the various factors/problems faced by the farm women in the study area.

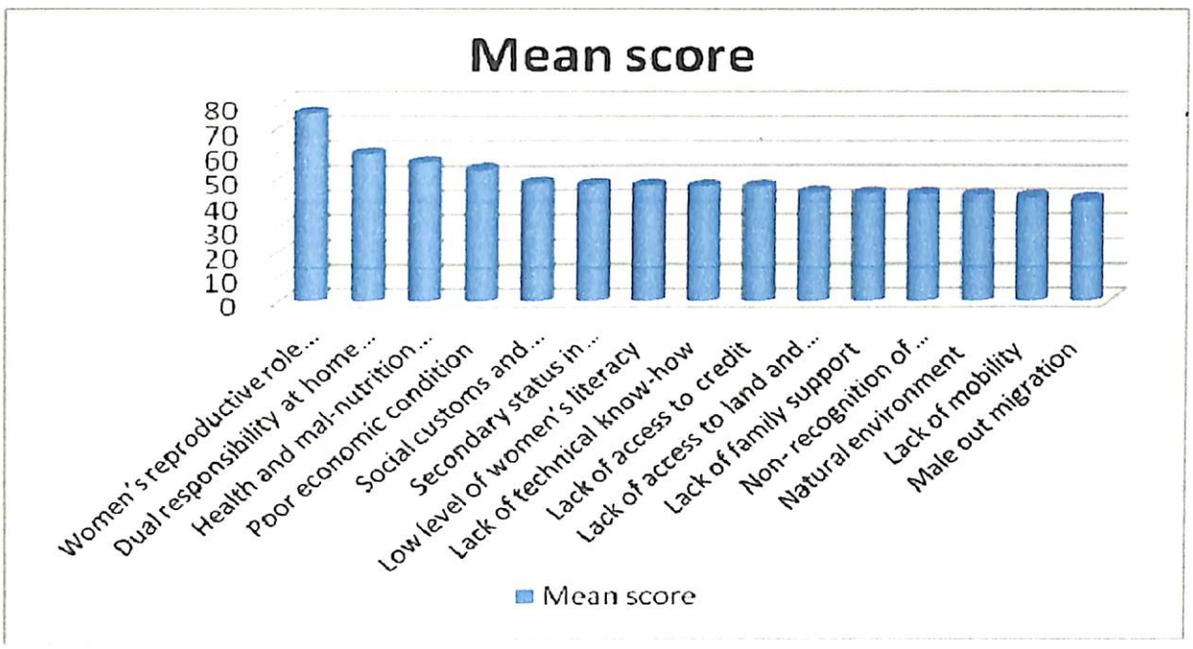
Table 5.4: Rank of Problems faced by Women Workers in Agriculture

Sl. No.	Factors/Problems	Total	Mean score	Rank
1	Women's reproductive role and child care practices	20616/270	76.36	1st
2	Dual responsibility at home and farm	16137/270	59.77	2nd
3	Health and mal-nutrition problem	15127/270	56.19	3rd
4	Poor economic condition	14423/270	53.42	4th
5	Social customs and traditional belief	12986/270	48.10	5th
6	Secondary status in decision making	12761/270	47.26	6th
7	Low level of women's literacy	12691/270	47.00	7th
8	Lack of technical know-how	12582/270	46.6	8th
9	Lack of access to credit	12555/270	46.5	9th
10	Lack of access to land and other productive resources	11875/270	43.98	10th
11	Lack of family support	11743/270	43.49	11th
12	Non- recognition of women's contribution	11657/270	43.17	12th
13	Natural environment	11467/270	42.47	13th
14	Lack of mobility	11322/270	41.93	14th
15	Male out migration	11051/270	40.93	15th

The result from Table 5.4 indicates that among various problems experienced by the women workers in agriculture in the study area, women's reproductive and child care practices gets the uppermost rank (76.36). This is because of gendered social norms that view unpaid care work as a female prerogative and women spend an important part of their day on meeting the expectations of their unpaid care work and reproductive roles. This is in addition to their paid activities, thus creating the "double burden" of work for women. Dual responsibility of women at home and farm occupies the second position (59.77). Women in the study area perform a range of duties at farm and home. Gender stereotypes regarding women's roles both at work and at home constrain their work opportunities and perpetuate the socio-economic model of a male breadwinner. The study reveals that health and malnutrition is another major problem experienced by farm women workers which is ranked third (56.19). Farming activities require manual labour, working with unnatural posture and excessive use of hands, shoulders, back muscles and joints which lead to muscular stress in the neck, shoulder, arms and hands. Many workers suffer from severe pain in shoulder and lower back due to adoption of awkward posture during transplanting, harvesting and weeding. Due to improper time management accompanied by poor economic condition majority of women workers suffer from mal-nutrition in the study area. The other major problems facing farm women are poor economic condition (53.42), social customs and traditional belief (48.10), secondary status in decision making (47.26), low level of women's literacy (47.00), lack of technical know-how (46.6), lack of access to credit (46.5) and lack of access to land and other productive resources (43.98) which are ranked as fourth, fifth, sixth, seventh, eighth, ninth and tenth problems respectively. Similarly, the problems ranked as eleventh, twelfth, thirteenth, fourteenth and fifteenth are lack of family support (43.49), non- recognition of women's contribution (43.17), natural environment (42.47), lack of

mobility (41.93) and male out migration (40.93) respectively. Above problems are identified as serious problems confronted by women workers practicing agriculture which hinder agricultural development in the study area. The mean distribution of various problems faced by women workers in agriculture is shown in the figure 5.1.

Figure-5.1: Mean Score of Problems



Source: Field survey.

5.2 Suggestions

In the study area, most of the farm women workers are married and play a important role in agriculture, though they participate actively in farm works. They support their men-folk in agricultural operations. Lack of time for husbands, over burden of work and lack of emotional and family support are the common problems faced by these women. Feminine and masculine stereotype do not emerge from psychological differences between female and male but from social accounting. A woman's socialization poses obstacles in her self-assertion. Women workers have to fight their own war by coming on the front line to accept their challenges.

In the light of the above identified problems faced by women workers in agriculture in the study area, the following are some suggestions to mitigate their suffering and as well as for their improvements.

1. Illiteracy and low level of educational status force women to play a secondary role almost in all spheres of life. So there is an urgent need for better educational facilities especially for women in rural areas. Programmes for adult education should be arranged for farm women who have lost the opportunity or crossed the age of formal education. There is the need for education including basic education and vocational education for skill development. This can strengthen gender equality in the study area. These programmes must be combined with basic skill training with enhancing livelihood strategies.

2. Though the state government has already established many primary health centres and has appointed concerned medical staff in rural areas, but health centres in the study are not sufficient in number and the existing centres also lack proper infrastructure. Therefore proper functioning and sufficient infrastructural facilities of the health centres with health and nutritional facilities to rural masses are necessary. Monitoring of these centres at regular intervals is highly suggested.

3. It is suggested that better housing, water supply, sanitation facility and electricity should be provided in the rural areas especially for weaker or economically poor section of the society. Though these facilities are already provided by the government to the villages of Assam, but unfortunately they are not reaching the deserving section of the society. A number of rural households are without the facility of electricity, safe drinking water and proper sanitary facility. So there is

an urgent need of the government to provide the basic facilities to these areas so that the health and standard of living of the rural women of those areas improve.

4. Establishment of common public recreation and entertainment facilities especially for farm women workers for improving their physical fitness and work efficiency is necessary. Setting up of Yoga centres and arranging periodic yoga programmes in rural areas where women can practice yoga for better life, can improve the mental and physical health of the women workers. It will help them to get relief from mental tension and many physical problems without using medicine and also make them fit and fresh for work.

5. Steps should be taken in fixation of minimum wages for different works separately depending upon the importance of work. Eight hours of works should be fixed including lunch and rest breaks. Equal wages for similar work for men and women should be maintained. There should be Working Women's Association where women can express their grievances and also for providing support to farm women workers against exploitation from their employers. Such associations should take steps for enhancing bargaining power for hours of works and sufficient wages.

6. Both the central and the state governments should provide sufficient and additional employment opportunities in agricultural and non-agricultural sector in the field of vegetable and fruits processing, horticulture and medicinal plants growing, poultry farming, rope and coir making from jute and especially in the area of handloom and weaving. There is much scope in the above enterprises in the study area which augment opportunities of works for women. Such works

will create additional employments for farm women and remove their seasonal unemployment in agriculture.

7. Right to property should be enjoyed by both male and female. This should be done through the execution of legal provisions. Therefore government should take steps to implement right to parental property to be owned by the members of the family irrespective of gender.

8. There should be minimum social common facilities like toilet, drinking water, common shade and protection from adverse climatic condition at the work place or nearby the workplace for women workers and also for all the agricultural workers.

9. Although farm women workers are found to be involved very much in agricultural and allied activities, they do not have adequate knowledge about modern technology associated with crop production and livestock management. They should know the essential technologies in the thrust areas like raising of nurseries, seed production, post harvest technologies, storage of farm produce, crop and animal waste recycling, poultry and dairy management etc. Several technologies have been developed but there is urgent need to disseminate them for strengthening and exploiting the hidden potential of women.

10. Demonstration and training camps for dissemination of new farm technology should be held monthly for women in all the villages. Women workers in agriculture should be aware of the new agricultural implements and tools which can help to increase their productivity and at the same time reduce drudgery. Some implements like improved sickles, transplanters have been tried out by

agricultural engineers and found suitable for women. For reducing work-load of farm women, work-simplification methods and instruments should be introduced by the agricultural scientists which are simple to operate. If such aids are expensive, they can be socially owned or subsidized or used with mutual agreements.

11. The health and nutritional status of working women should be given more importance in the family. Women themselves should be conscious about their proper diet so as to keep them healthy and strong. To make women aware about balanced and nutritional diet, some awareness campaign programmes on health and nutrition should be organized in rural areas especially for women. Free health check-up camp should also be organized by the medical department of the district for rural women in particular and the rural masses in general.

12. The most important and urgent need of the hour is to make both men and women gender sensitive. Generally rural society or community is very much orthodox and patriarchic in nature. The male members of rural households should come out of their traditional belief that women are subordinate to men. They should recognize women's contribution and position both in the family and the society. Contribution of women in cultivation and livestock rearing along with domestic chores should be accounted for smooth running and survival of the family. Men should support and share the domestic work burden of women so that women workers can maintain their work in agriculture and allied fields along with household duties and proper maintenance of their health.

CHAPTER VI

WOMEN WORKERS IN DECISION MAKING

Introduction

Decision making power is perceived as fundamental to women's empowerment. Empowerment is the process of enhancing the capacity of individuals or groups to make choices and to transform those choices into desired actions and outcomes. In its broadest sense, empowerment is the expansion of freedom of choice and action. It means increasing one's authority and control over the resources and decisions that affect one's life (World Bank 2002). Empowerment as a concept was introduced at the International Women's Conference in 1985 at Nairobi. The conference defined empowerment as a redistribution of social power and control of resources in favour of women (Varghese 2012). Empowerment of the deprived, especially of women, begins with the ability to voice their opinion through their participation in decision making, backed up by access to education. Women's empowerment and their full participation on the basis of equality in all spheres of society, including participation in the decision-making process and access to power, are fundamental for the achievement of equality, development and peace (Beijing Declaration 1995).

Gender equality and women's empowerment are integral to human development (UNDP 2015). Women's position and the degree of their empowerment are governed by gender and the gender relations in the society. Gender represents not only the biological sex of an individual, but includes different roles, rights and obligations those are attached by the society to the individuals born as male or female. Although, the sex differentiated

roles, rights and obligations vary according to class and the lifecycle stages, practically they do exist in every sphere of human functioning. This makes gender a fundamental dimension in social stratification. The roles assigned for women are subordinated to those set apart for men and the rights given to women are fewer and less emancipating than those given to men (Rosita 2014). Unequal gender relations imply that men not only can exercise greater power than women in almost all the spheres of human functioning but they have also culturally and often legally more sanctioned power over women and have a greater control of and access to resources and information. Hence there is a need to find ways and means to empower women.

Empowerment and development are closely related. Empowerment leads to development. Without the active participation of women and the incorporation of women's perspective at all levels of decision making, the goals of equality, development and peace cannot be achieved (Beijing Report 1995). In recent years, empowerment of women has been recognized as a central issue in determining the status of women. Women's empowerment is a process in which women gain greater share of control over resources (productive, financial, intellectual etc.) and control over decision-making in the home, community, society and nation to gain power. To promote gender equality and empower women is one of the thrust areas of the MDGs, as they are usually excluded from the development process. Generally, the low or lack of participation of women in decision making process affects the nation in improving the legal and regulatory environment for promoting gender equality. In this process, women should be empowered socially, economically, educationally and politically. Women empowerment also means improvement of status of women in the family as well as in the society as a whole.

The present chapter deals with the empowerment of farm women workers through their decision making ability in agriculture. The chapter also analyses the constraints associated with farm women workers in decision making process and the factors affecting the decision making power or capacity of women in agriculture and allied activities.

6.1 Women Empowerment in Agriculture

Empowerment of women is very much essential to achieve sustainable development. It is prerequisite to gender equality and development (Rathiranee 2013). In India, most of the rural women are involved in agriculture sector. The number of female cultivators in India was 21.5 million in1991 and increased to 29.5 million in 2011. Similarly in case of agricultural labourers, number of female was 28.2 million in 1991 which increased to 38.24 million in 2011. Farm women in India are extensively involved in agricultural activities. It is also observed that number of female agricultural labourer is more than that of cultivators. At present there is an emphasis on planned and desirable change, especially in rural areas of developing countries. But the success of the programmes of planned change largely depends on the rational decisions of the rural farm women. Generally in our society male play an active and dominant role in decision making in different agricultural activities because the influence of women in agriculture development has been undervalued and unrecognized.

Farm women, from landless labourers to managers play a significant role in agriculture. They contribute in almost all the operations related to crop production and livestock management. But their decisions are still dependent on their husbands or other male members and elder women of the family. These women are mostly their mother-in-law and sometimes the unmarried elder sister-in-law. Farm women are not able to take

the decision independently and enjoy the pleasure from their works on the farms and daily household chores. Women manage and handle livestock farming, but the sale of animal or meat is in the hands of men. The social set up of rural economy still does not allow farm women's access to any cash or wages. They are generally unpaid or paid in kind. Thus, women in rural areas lack the authority to decide even about the activities they are extensively engaged in. Therefore empowerment of women and gender equality are vital tools to achieve sustainable agricultural development. Farm women are needed to be empowered in the sphere of socio-cultural, economic, legal and political spheres. This would make them equal partners in the development processes. The process of women empowerment in decision making should start from one's own home. Decision making is the foremost step to the ladder of empowerment. Empowerment of farm women refers to giving decision making power to women in different areas of agriculture and its allied activities along with other aspects of life. Therefore it is worthwhile to examine whether they can decide about household as well as economic matters. Empowerment of farm women in decision making determines their position in the family. The exclusion of women in decision making results in unequal distribution of power and resources which leads to their marginalization (Rasid and Islam, 2011). From ancient times, usually males take an active part in decision making in agriculture. In recent times women are playing pivotal role in agricultural occupation as a manager, decision maker and skilled worker (Chaudhary et al., 2003). In the modern age, the decision-making of the farm enterprises and family affairs should be done by all economically active family members in a democratic spirit (Wasnik, 2006). In order to increase the role of farm woman in decision making for agricultural production, dairy and other allied activities of technical nature, it is necessary to equip them with latest

information so that they can play a vital role in decision making in the family (Sethi 1991, Wasnik 2001, Kaur 2008).

6.2 Pattern of Participation of Women in Agricultural Decision Making Process

The contribution of farm women in agricultural production has also been studied with respect to their participation in agricultural decision making process. The pattern of their participation in decision making differs in level for different agricultural activities. In some activities they might take decision of their own and in some other cases they might not be involved at all. Farm women are asked to indicate who take decision in each farm activity. Some of them are found to take decision independently while some make decisions jointly with their husbands and some decisions are taken collectively with other family members or relatives/friends. In many cases farm women are found not to take part in decision making and their husband solely take the final decision regarding matters related to agriculture. Similarly in case of female headed households, decisions are either taken independently or collectively. In such situation, women are the main decision makers though they consult often with others.

6.3 Extent of Participation of Women Workers in Agricultural Decision Making

To examine farm women's empowerment through their participation in agricultural decision making, a total of 18 agricultural activities are selected. The agricultural activities also include the allied livestock activities. The respondents were personally approached and explained about the purpose of this study. They were asked to mention their participation and the degree of involvement in decision making in those activities and the responses were recorded in the interview schedule. Their responses were worked out separately to find out their capability in decision making leading to empowerment in selected agriculture activities by examining their extent of involvement.

To examine women's decision making capacity, a Decision Making Index (DMI) is constructed covering the selected 18 activities on which respondents were asked to indicate the extent of their participation in decision making. It was measured on a four point scale as no participation, only consulted, opinion considered and actively involved in the final decision. The corresponding scores assigned for each response were 0, 1, 2 and 3 respectively. The constructed Decision Making Index is as follows:

$$\textbf{Decision Making Index (DMI)} = N_0\times0+N_1\times1+N_2\times2+N_3\times3$$

Where, N_0 = Number of farm women with no participation in decision making.

N_1= Number of farm women who were only consulted about the decision.

N_2 = Number of farm women whose opinions were considered for decision making.

N_3= Number of farm women who were actively involved in final decision.

Decision Making Index (DMI) of any decision making item can range from 0 to 810, where 0 indicates no participation in decision making and 810 indicates high participation in decision making. Based on the extent of participation in decision making indices, rank order has also been done for each selected decision making item and presented in Table 6.1.

Table 6.1: Extent of Participation of Women Workers in Agricultural Decision Making

Sl. No.	Decision making areas/items	No participation (0)	Only consulted (1)	Opinion considered (2)	Actively involves in final decision (3)	DMI Score	Rank
1.	Preparation of land	146	52	38	34	230	18th
2.	Crops and varieties to be sown	86	55	81	48	361	9th
3.	Proper time and method of sowing	95	58	65	53	347	11th
4.	Uprooting and transplanting of seedlings	32	24	92	122	574	3rd
5.	Means of irrigation	127	47	60	36	275	14th
6.	Use of fertilizer and insecticides/pesticides	124	70	46	30	252	16th
7.	Intercultural operations	30	36	108	96	540	4th
8.	Harvesting of crop	51	47	62	110	502	5th
9.	Hire in/hire out of labour	86	66	75	53	375	8th
10.	Purchase or sale of land	96	73	58	46	317	12th
11.	Storage of farm produce	0	48	94	128	620	1st
12.	Sale of farm produce	124	67	43	36	261	15th
13.	Farm credit	95	47	75	53	356	10th
14.	Taking or giving land on lease	75	50	83	62	402	7th
15.	Purchase of agricultural machinery/implements	83	44	51	92	422	6th
16.	Buying or selling of animals/animal produce	114	53	55	48	307	13th
17.	Buying or selling of poultry birds/eggs	38	25	41	166	605	2nd
18.	Treatment of livestock	152	35	40	43	244	17th

Source: Field survey.

It is evident from the table (Table 6.1) that DMI score of farm women on 18 selected items ranges from 230-620 against the possible range of 0-810. The higher the index score, greater is the indication of empowerment of respondents in decision making. The scores are above 500 in five decision making aspects. Two aspects show more than 400 and six aspects are above 300 and the remaining are above 200. Regarding their extent of participation in agricultural decision making, storage of farm produce is ranked

1st which scored 620 followed by buying or selling of poultry birds/eggs (605), uprooting and transplanting of seedlings (574), intercultural operations (540) and harvesting of crops (502) which ranked 2nd, 3rd, 4th and 5th respectively. However, decisions on purchase of agricultural machinery/implements (422), taking or giving land on lease (402), hire in/hire out of labour (375), crops and varieties to be sown(361) and farm credit (356), women are ranked 6th , 7th , 8th , 9th and 10th respectively. Respondent's participation was negligible in decision making areas like proper time and method of sowing (347), purchase or sale of land (317), buying or selling of animals/animal produce(307), means of irrigation (275), sale of farm produce(261), use of fertilizer and insecticides/pesticides (252), treatment of livestock (244) and preparation of land (230) are ranked accordingly as 11th, 12th, 13th, 14th, 15th, 16th, 17th and 18th among 18 selected agricultural decision making areas.

Thus the data shows that women are relatively empowered in decision making in the non-skilled areas of agricultural activities than the skilled and economic areas as they are male or husband dominated areas as reported by the respondents.

6.4 Level of Empowerment of Women Workers in Agriculture

The level of empowerment has been calculated on the basis of arithmetic mean (X) and standard deviation (σ) of the total empowerment scores of the respondents as followed by Rasita (2014). Decision making index scores of each respondent in all the items are summed up to get the empowerment score of the respondent. In this way, empowerment scores of all the respondents are calculated to examine their level of empowerment in agriculture. Respondents obtaining score above $X+\sigma$, below $X-\sigma$ and in between $X\pm\sigma$ are considered to have high, low and medium level of decision making empowerment respectively as shown in Table 6.2.

Table 6.2: Level of Empowerment Based on Mean and Standard Deviation

Categories	Score
Low Empowerment	Below (X-σ)
Medium Empowerment	Between (X±σ)
High Empowerment	Above (X+ σ)

N.B.: X= Arithmetic mean, σ = Standard deviation.

The distribution of respondents according to their decision making index scores in agricultural decision making process is presented in Table 6.3.

Table 6.3: Decision Making Index (DMI) Scores of the Respondents

DMI Scores	Frequency	Percent	Cumulative Percent
17	3	1.1	1.1
18	14	5.2	6.3
19	9	3.3	9.6
20	17	6.3	15.9
21	18	6.7	22.6
22	9	3.3	25.9
23	3	1.1	27.0
24	13	4.8	31.9
25	5	1.9	33.7
26	19	7.0	40.7
27	11	4.1	44.8
28	22	8.1	53.0
29	9	3.3	56.3
30	21	7.8	64.1
31	5	1.9	65.9
32	11	4.1	70.0
33	4	1.5	71.5
34	14	5.2	76.7
35	7	2.6	79.3
36	15	5.6	84.8
37	9	3.3	88.1
38	12	4.4	92.6
39	4	1.5	94.1
40	6	2.2	96.3
41	4	1.5	97.8
42	4	1.5	99.3
43	2	.7	100.0
Total	270	100.0	

The decision making index (DMI) scores of the respondents in all the items (empowerment score) indicating minimum and maximum score, their mean and standard deviation are presented in Table 6.4. It is found that the empowerment score for a respondent in 18 selected items ranges from 17- 43 against the possible range of 0 – 54 for each respondent. A score of '0' means that a respondent is not participating in decision making of any area/item of agricultural activities while the score of '54' implies high or full empowerment of women in regard of decision making in agricultural operations.

Table 6.4: Range of Empowerment Scores, Mean and Standard Deviation

No. of respondents	Minimum Score	Maximum Score	Mean	Std. Deviation
270	17	43	28.51	6.828

The level of empowerment of the sample women workers are calculated on the basis of mean and standard deviation of their empowerment scores and shown in Table 6.5.

Table 6.5: Level of Empowerment of Women Workers in Agriculture

Category	No. of Respondents	Percentage (%)
Low (below 22)	61	22.59
Medium (between 22 - 35)	153	56.67
High (above 35)	56	20.74
X= 28.51 σ =6.83 (calculated from empowerment scores)	270	100.00

The data presented in Table 6.5 shows that out of 270 respondents, 61 respondents have low level, 153 have medium level and the remaining 56 of the respondents have high level of decision making empowerment. Thus it is found that

56.67 percent or majority of the respondents have medium level empowerment as against 22.59 percent who has low level and only 20.74 percent has high level empowerment in agricultural decision making areas.

6.5 Constraints faced by Women Workers in Agricultural Decision Making

The constraints faced by sample farm women in decision making related to agricultural operations are shown by the data in Table 6.6. The constraints reported by the respondents are presented on the basis of their responses. The frequencies are worked out on percentage basis and ranked accordingly.

Table 6.6: Constraints in Agricultural Decision Making

Sl. No.	*Constraints*	**Frequency**	**Percentage**	**Rank**
1.	Poor educational level	208	77.04	I
2.	Multi-dimensional role of women	198	73.33	II
3.	Lack of knowledge about improved technology	170	62.96	III
4.	Male dominance	163	60.37	IV
5.	Traditional belief system/ cultural norms	158	58.52	V
6.	Farm women's age	141	52.22	VI
7.	Poor access of women to farm information	136	50.37	VII
8.	Lack of women's self-confidence	128	47.41	VIII
9.	Lack of women focused on agricultural extension activities	122	45.19	IX
10.	Shortage of agricultural extension services	116	42.96	X

Source: Field survey. **Multiple responses were allowed.**

The result reveals that 77.04 percent of respondents reported poor educational level as the major constraint responsible for secondary status or lower level of empowerment of women in decision making process. Respondents reported that due to illiteracy, they hesitated and failed to take part in agricultural decision making process.

This problem is ranked first. The second major problem reported by the respondents is multi-dimensional role of women. Around 73 percent of them are of the opinion that lack of time due to multiple work roles inside and outside home acts as a hindrance in taking active part in agricultural decision making. The third important constraint reported by 63 percent respondents is lack of knowledge about improved technology. It is observed that respondents depend largely on traditional methods of production and are very poorly equipped with mass media sources and knowledge about improved farm technology which acts as a constraint in farm decision making. Around 60 percent of respondents reported male dominance as one of the hurdle in the decision making process which rank fourth. The findings of the study report of a male dominated society where many of social restrictions go against the interest of farm women workers. Some of the respondents reveal that they were not allowed to give their opinions or suggestions before the elderly male members. Traditional belief and cultural norms set by the rural society for women acts as another constraint for farm women in farm decision making as reported by 59 percent of respondents and is ranked fifth. During the field survey, one of the respondents reported that at times even the suggestions of well-informed farm women were ignored or not taken seriously because men considered it disgraceful to accept the decision of women. This is so because traditionally men have been the lawmakers of society. However, some respondents were of the opinion that their husbands assumed their wives were unable to complete any task without their help in spite of the women being the breadwinners. The traditional division of labour in rural society most often situates women in roles based on providing emotional support and maintenance whereas men are as primarily responsible for economic support and productive activities. The sixth problem reported by 52 percent respondents is their age. According to them, greater the age, greater is the power of decision making regarding

agricultural activities. Farm women's age and experience stands as a quality for decision making even though they are illiterate. Many of the young or middle aged women though they are literate and active working members are debarred from decision making process. Poor access of women to farm information is seventh important hurdle in farm women's decision making. It is found that 50 percent of respondent suffered from poor excess to farm information which restricts them from farm decision making. They depend largely on informal sources of information like neighbours, relatives and friends. Radio is found to be used occasionally by the respondents for obtaining certain information. Lack of farm women's self-confidence is ranked as eighth major constraint by 47 percent of respondents associated with them in farm decision making process. In addition to socialization process, due to low education level and lack of information about technologies, the respondents lack self confidence that results shyness, hesitation and fear of doing the farm activities which is another hindrance in taking farm decisions. The ninth and tenth major constraints as recognized by the respondents in regards to farm decision making are lack of women focused on agricultural extension activities and shortage of agricultural extension services respectively. It is seen that 45 percent of respondents reveal that inadequate exposure to agricultural extension activities is one of the important hindrances for them in participation of agricultural decision making process. A sufficient or adequate agricultural extension service especially for farm women is a necessary prerequisite for enhancing their knowledge and skill in different aspects of agricultural production. This will help them to gain their self confidence and help in decision making regarding activities related to agriculture. But in the study area, respondents suffered from shortage of agricultural extension services which is another major constraint in agricultural decision making faced by them reported by 43 percent of the sample farm women.

6.6 Factors Affecting Decision Making Power of Women Workers in Agriculture

There are many factors associated with the socio-economic background of farm women which affect their decision making power. Eight factors namely, age of women, education level of women, caste, marital status, family size, farm size, income of the family and farming experience of women have been selected to analyse their influence on farm decision making power. Farm decision making has an important association with the size of land holdings and the age of women that affect the decision making power of women. Farm women's decision making power is observed to be higher in small farmers' households as compared to large farm households. It is expected that if a woman is aged or head of family as grandmother, mother-in-law, mother, her advice is taken, but daughter-in-law or daughters are not expected to exercise independent decision making. Size of family and type of family also affect women's decision making power. It is found that in small or nuclear families, mostly men and women jointly take decisions, but for large or joint families, decisions are taken mostly by male members of the households. Level of education also affects women's decision making power in agriculture. If a woman is educated and she is economically active in any work then her decision making power is higher as compared to illiterate or non working women. It is also found that farming experience and family income of women has a positive impact on women's decision making power in agricultural activities. The influence of these variables on the decision making power of sample respondents is analysed with the help of the average value of their decision making index (DMI).

6.6.1 Age of Women and Decision Making

Age of farm women workers is an important factor which influences their decision making power in family and farm activities. During the field survey, when

respondents are personally interviewed, they report that older women are likely to play more important role in farm decision making as compared to younger farm women workers. It is found that age of farm women workers is positively related to their decision making power. This implies that the higher the age of farm women, the more they partook in farm and family decision making. The reason found behind this is that it is expected that older women possess higher farming experience and also a higher position or status in the family than the younger women. This relationship is brought out by analyzing the collected data. In this study, it is found that farm women belonging to older group had actively participated in decision making than younger and medium farm women workers.

Table 6.7: Age of Women and Decision Making Index

Age of Women (Years)	Average Value of DMI
Young (up to 30)	25.77
Middle (31-50)	27.93
Old (above 50)	34.60

6.6.2 Education Level of Women and Decision Making

It is generally believed that educational status of a woman is also likely to influence her participation in decision making. The data of the study reveal a different but significant relationship between education of farm women workers and their decision making power. The data shows that there is a strong relationship between higher education and higher participation in decision making; but illiterate and functionally literate women also enjoy high autonomy in decision making. The DMI value is higher for higher level literate women. The average value of DMI is also high for illiterate women. This result reflects the inverse relationship between age and education level. It

reveals the fact that in the study area, most of the illiterate and functionally literate women are elderly women and they enjoy greater power in farm decision making process. But it is also found that as education level is upgraded, DMI value also increases which implies that sample women's participation in farm decision making becomes higher with higher level of education. Thus the decision making of sample farm women is also positively associated with their level of education.

Table 6.8: Level of Education and Decision Making Index

Level of Education of Women	Average Value of DMI
Illiterate	33.86
Functionally literate	30.21
Primary	25.79
Middle	25. 42
High school	30.53
Higher Secondary and above	37.07

6.6.3 Caste of Women and Decision Making

Caste factor plays an important role in rural society which has an impact on decision making power of farm women. It stratifies the society into higher and lower categories. It is generally believed that women of schedule tribe (ST) category have a higher autonomy in decision making as compared to women of other castes. The findings of the study support this. It is well observed that respondents belonging to low caste group have high decision making power compared to women of high caste or general category. Respondents belonging to ST category enjoyed higher decision making power followed by respondents of Other Backward Caste (OBC), Schedule Caste (SC) and

General category. The findings reveal that woman belonging to general category have low decision making as compared to the one belonging to ST, SC, and OBC category. Hence caste still plays an important role in the villages surveyed and the general community restricts their wives and daughters-in-law from indulging in decision making process so as to ensure protection of their tradition and culture.

Table 6.9: Caste of Women and Decision Making Index

Caste of Respondent	Average Value of DMI
ST	30.68
SC	28.20
OBC	29.16
General	26.43

6.6.4 Marital Status of Women and Decision Making

The marital status of a woman also influences her power of decision making in the family. It is hypothesized that the farm women who occupy a higher status as a head of the family enjoy greater power in decision making as compared to younger women in the family. It is found from the study that the female headed farm households mostly belong to widows and separated women who have a distinctly higher score of DMI as compared to married women in the families where father in law, husband or son is head of the household.

Table 6.10: Marital Status of Women and Decision making Index

Marital status	Average Value of DMI
Unmarried	-
Married	28.25
Widow	35.28
Separated	36.41

6.6.5 Family Size and Decision Making

The size of family here refers to the total number of persons having relations and living under a common roof. An individual from a small family obtains more chances to take decisions. However, in case of large size families, responsibility is divided among a large number of members in the family, thus they get limited chance to play their role in a particular aspect. The field survey data observation reveal that the farm women belonging to small size families have higher participation in decision making when compared to the farm women in the large size families. The DMI value of the sample women workers is found to be higher in case of small families as compared to medium and large families in the study area. The study finds that the decision making of farm women workers is negatively associated with the size of family.

Table 6.11: Size of Family and Decision Making Index

Size of Family	Average Value of DMI
Small	30.88
Medium	28.07
Large	27.54

6.6.6 Farm Size and Decision Making

It is believed that farm women from the large farm-size families participate to a lesser extent in agricultural work and their participation in decision making is also expected to be lower. The data of the study also reveal the same that there is an inverse relationship between the farm size and decision making power of farm women. This implies that the higher the farm size of the women, the less they take decisions. This is true because women farmers with large farm size are engaged less in agricultural activities which results in their low participation in farm decision making.

Table 6.12: Size of Land Holdings and Decision Making Index

Size of Land Holdings	Average Value of DMI
Landless	30.24
Small farms (up to 1hectare)	31.02
Medium farms (1-2 hectare)	28.48
Large farms (above 2 hectare)	28.27

6.6.7 Family Income and Decision Making

The study reveal that family income of the farm women also has an effect on their decision making power. The sample women of higher income families participate more in decision making as compared to that of lower income families. The average value of DMI increases with the increase in family income. This implies that higher the family income of farm women, the more they participate in farm decision making. In the study area it is found that most of the farm women of higher income groups are educated, service holders and also elderly women. These factors increase their involvement in decision-making than the lower income categories. Finding of the study reveals a positive relationship between family income and the decision making of farm women.

Table 6.13: Monthly Income of the Family and Decision Making Index

Monthly Family Income (in Rs.)	Average Value of DMI
Below 5000	26.30
5000-10000	26.19
10000-15000	30.05
15000-20000	30.76
Above 20000	33.41

6.6.8 Farming Experience of Women and Decision Making

The farming experience of sample women workers is positively related to their farm decision making power. This means that the higher the farming experience of the respondents, the more they participate in farms and family decision making. Experienced farm women seem to be more knowledgeable in family and farm management and thus make useful contributions in farm decision making process.

Table 6.14: Farming Experience of Women and Decision Making Index

Farming Experience	Average Value of DMI
Low	25.96
Medium	27.41
High	33.21

Thus the analysis shows that decision making power or capacity of women depends upon a number of socio-economic factors. It has been found that age of women, education level of women, status of women in the family, family income and farming experience of women show a positive relationship while caste, family size and farm size show a negative relationship with their decision making power. From the personal interview and discussion with the respondents during field survey, it is known that farm women do not enjoy a high degree of autonomy in decision making in the family in spite of their significant contribution to economic activities. Only in purely domestic matters like decoration of house, purchase of domestic goods, preparation of food, marriage of children, caring and management of poultry etc. women are given freedom to take their own decisions. But in matters related to children's education, occupation, production and money related matters they enjoy limited freedom. The movement of women outside home is also restricted for some families. The study also reveals that farm women in the surveyed villages play a secondary role in decision making related to agricultural

matters. Mostly decision in agriculture related matters are taken by male members. Women are relatively empowered in decision making in domestic and non-skilled areas than the skilled and economic areas which are mainly male dominated areas as reported by the respondents.

Conclusion

The patriarchic forms of decision making and dominance over farm women still continue in the study area. Farm women are the major working force of farming activities in the study area. Despite their important role in agricultural sector, their participation in decision-making regarding farming operations still seem questionable. Most of farm women did not have any role in decision making regarding purchase/sale of land, sale of farm produce, application of irrigation method, use of fertilizer and plant protection measures. Farm women's empowerment in agricultural decision making is quite minimal. Thus there is a need for special programmes that empower and recognize women especially through education, finance and information. Education and improvement in their economic independence will help in increasing women's involvement in decision-making in the family. Integrated awareness creation strategy should also be designed and facilitated by stakeholders to minimize the social, cultural and economic barriers that affecting farm women's decision making. The change of attitude of women and men is very important to empower women by giving decision making authority to them. The family relation training is needed to the rural people and which is not only for women participants but to their male partners also. Gender workshops and training programmes will bring women and men together to discuss responsibilities and decision making. Thus, to conclude that if only the attitude of both farm women and men is being changed, the farm women will be empowered.

CHAPTER VII

FINDINGS, CONCLUSION AND POLICY IMPLICATIONS

This chapter summarizes the major findings of all the earlier chapters and extracts the policy implications thereof. The first part of the chapter gives a brief but comprehensive background of the study. The second part summarizes the principal findings of the study. The last part looks into overall conclusion and policy implications of the study.

7.1 Summary

Agriculture is regarded as the largest sector of economic activities in India. More than half of the population of the country depends on agriculture directly or indirectly for their livelihood. Women workers in agriculture often called 'farm women' are the backbone of agricultural workforce. As large as 81 percent of the total female workforce in India are rural female workers. Out of the total rural female workers, 28.8 percent are cultivators and 48.5 percent are agricultural labourers contributing a major proportion of the farm production as well as household income. Farm women perform almost all the activities in agriculture like seeding, uprooting seedlings/ transplanting, fertilizer application, irrigation, weeding, plant protection, thinning, harvesting, threshing, processing, selling farm products, storage etc. There is hardly any activity that women are not involved in agriculture except ploughing. They are also engaged in allied activities like animal rearing, poultry farming, fodder collection, milking etc. and in some skilled jobs like embroidery, knitting and weaving along with their domestic chores.

Statement of the Problem

Agriculture being a labour intensive activity, the availability of workers in Assam for sustaining agricultural production is crucial. The economy of Assam is predominantly agrarian and women's participation in agriculture sector is significant. According to census 2011, about 49 percent of the total women workers in Assam are engaged in agriculture as cultivators and agricultural labourers. Majority of women works in the family farms as unpaid family labour and a smaller percentage of them as agricultural labour. They have a long tradition of doing various agricultural and livestock management activities along with their household duties.

The present study has analysed participation of women in agriculture and their contribution to family income. It has also identified various problems that influence their participation in agriculture and examined their autonomy in agricultural decision making.

Objectives

The present work has been carried out with the following objectives.

1) To study the socio-economic background of women workers in agriculture in the study area of Assam.
2) To study the nature and extent of participation of women workers in agriculture and allied activities in the study area.
3) To assess the contribution of women workers to the family income from agriculture and allied activities in the study area.
4) To examine the decision making capacity of women workers in agricultural activities.
5) To identify the problems faced by women workers in agriculture.

Research Questions

On the basis of the objectives mentioned above, the study seeks answers to the following research questions:

1) Do women workers of all farm size contribute from agricultural income towards their family income?

2) Does the participation of women in agriculture empower them to take decisions regarding agricultural activities?

Methodology

The study has been conducted in Morigaon district of Assam. Three blocks of the district namely Mayong, Bhurbandha and Dolongghat where percentage of women workers are higher compared to other blocks have been selected purposively for the study. From each block, 3 villages have been selected at random. 30 farm households from each sample village and further 30 farm women, one from each household, have been purposively selected on the basis that the women of those households are involved in agriculture activities. Thus the total sample consists of 270 farm women workers as sample respondents.

To fulfill the objectives and to answer the research questions of the study, both qualitative and quantitative approaches have been used. Qualitative analysis is based on in-depth personal interview and quantitative analysis is based on data obtained through structured interview schedule and various statistical tools like SPSS (Statistical Package of Social Sciences) 20.0 version, Microsoft Office Excel have been used to draw the result. Field survey to provide the primary data was carried out during agricultural year July 2014- June 2015.

To study the socio-economic background of women workers, socio-economic indicators are investigated. To analyse the participation of women workers in agriculture, their involvement in different agricultural and allied activities has been investigated. Total hours spent by them on these activities have been collected and converted into mandays assuming one manday consists of 8 hours of work a day. To assess the contribution of farm women workers to the family income, their average annual mandays in agriculture are multiplied with the prevailing agricultural wage rate in the study area. To identify the problems faced by women workers in agriculture, Henry Garrett ranking method has been adopted. Qualitative analysis has also been done that based on personal interview with the respondents. To examine women's participation and capacity or power in agricultural decision making, a decision making index has been constructed covering 18 types of agricultural activities. The decision making empowerment level is calculated on the basis of arithmetic mean (X) and standard deviation (σ) of the total decision making index scores.

7.2 Summary of Principal Findings

7.2.1. Findings from Secondary Data

An overview of the study-area has been presented on the basis of secondary data. Morigaon is a rural district of Assam covering only 2.02 per cent of the total area of the state. The district is located in the Central Brahmaputra valley of Assam. The total geographical area of the district is 1551 sq.km. consisting of 98.36 percent rural and only 1.64 percent urban area. It has one Head Quarter sub-division, five Revenue Circles, seven Development Blocks, 85 Gaon Panchayats and 632 villages. According to Census 2011, out of the total population of Morigaon, the rural and urban population respectively constitute 92.34 percent and 7.66 percent. Regarding the distribution of total

workforce, rural workers constitute as large as 92.9 percent against only 7.1 percent urban workers. Rural female workers account as high as 95.57 percent of the total female workers of the district.

Agro-economic features of Morigaon reveals that the economy of it is rural agrarian with low rate of urbanization. Agriculture is the predominant economic activity and paddy is the dominant crop followed by rape and mustard, black gram, winter vegetables, wheat and jute. The total cropped area and net area sown are 127811 hectares and 92011 hectares respectively and cropping intensity is 138.90 percent. In the district, the preponderance of small and marginal type of land holding is increasing due to fragmentation and nuclearization of farm families which affects the land use pattern. Agricultural labour market shows that in all the seven blocks, percentage of male workers is much higher than female workers as rural main workers. But as rural marginal workers, women outnumbered men in all the blocks. Out of 239563 rural main workers, 84.49 percent is male and only 15.51 percent is female whereas out of 86641 rural marginal workers, 59.86 percent is female against 40.14 percent of male workers. This indicates that female workers in the district mainly occupy their status as rural marginal workers.

Regarding power and connectivity, the district is lagging behind. Out of 598 total inhabited villages only 484 are electrified leaving more than 100 villages without electricity. The total road length is 1150 km out of which 909 km is rural road and only 86 km is major district road and 142 km state highway. The district has only one civil hospital, 23 primary health centres (PHCs), 2 community health centres and 123 sub centres. Regarding higher education, it has 36 higher secondary schools, 16 junior colleges, 6 degree colleges and one college of B. Ed. (Bachelor of Education). Thus

social infrastructure in terms of increase in the number of health centres and educational institutions is yet to register a satisfactory trend.

The district is educationally and industrially advancing slowly due to lack of proper infrastructure. It has been suffering from various deficiencies related to almost all the areas of socio-economic progress. Proper assessment of the deficits is needed for assuring smooth growth process in the district.

7.2.2. Findings from Primary Data

7.2.2.i Profile of Women Workers

The socio-economic conditions of the respondents have an influence on their attitude, behavior and activities. Keeping this in mind, socio-economic background of sample women like age, education, caste, family type, family income, land holdings etc. have been investigated which provide an insight into their pattern of labour use in agriculture. The findings of the chapter are summarized below.

- Findings show that majority of the respondents (57.04 %) belong to the middle age group (31- 50 years), followed by 26.30 percent and 16.66 percent of the respondents are in young (up to 30 years) and old age (above 50 years) categories respectively. It is found that aged women are less energetic than the other age groups and they prefer to remain at home to look after the household and their grand-sons or daughters. The data indicates that major portion of the sample women belong to the active working age category fulfilling the objective of the study.

- Educational status of the respondents was not satisfactory. Majority (29.26 %) of the respondents is educated up to middle school, 14.07 percent are illiterate,

15.19 percent are functionally literate, 22.96 percent are up to primary level and 13.33 percent are up to high school. Only 14 respondents (5.19 %) are matriculate and 4 of them completed higher secondary level education. It is found that nobody possessed any graduate, post-graduate or technical education degree in the study area. Thus, education status of respondents is confined only to the lower level of education.

- 87.41 percent of respondents are married while only 11.85 percent are widows and 0.74 percent is separated. Among the respondents there are no divorced or unmarried women. The finding is that maximum of the sample women are married playing the dual role of home maker and worker.

- The average size of the family is 6.12 which indicates high dependency ratio. The highest number of respondents is found to have a family size of 5-7 members which constitute 44.81 percent. 27.04 percent of respondents are from normal family size (up to 4 members) and 28.15 percent are from large family (above 7 members) size.

- 35.93 percent of respondents have joint family system while 64.07 percent are under nuclear family system. As reported by the respondents, the percentage of nuclear family has been increasing and joint family system has been losing its importance mainly due to the fragmentation of family land holdings among its members.

- Among the respondents, 45.93 percent are schedule tribe (ST), 17.41 percent are schedule caste (SC), 24.07 percent are other backward classes (OBC) and only 12.59 percent belongs to the general caste category. Analysis reveals more

involvement of tribal women in farming activities in the study area and majority of them belong to Mayong block.

- More than half (58.15%) of the family heads are farmers whereas 14.81 percent are agricultural labourers, 14.07 percent have subsidiary occupations like small shop, sericulture, bamboo/ cane works etc. besides agriculture and 12.96 percent are job holders in private, semi-government and government establishments along with cultivation. This shows that agriculture is still a major sector of employment and more than 70 percent of respondents as cultivators and agricultural labourers entirely depend on agriculture.

- The data on family income reveals that most of the respondents are financially not well off. 37.78 percent of respondents have monthly family income less than Rs.5000.00 and 28.15 percent in the range of Rs. 5000.00-Rs.10000.00. Only 9.63 percent of respondents have monthly income in between Rs 15000.00-Rs.20000.00 and 9.26 percent above Rs.20, 000.00.

- Being economically poor, largest portion i.e. 53.70 percent of the respondents live in katcha house and 5.55 percent reside in the houses provided under the scheme of Indira Awaas Yojana (IAY). Only 15.56 percent and 25.19 percent of the respondents live in pucca and semi-pucca houses respectively.

- 50.74 percent of sample women work as family labour followed by 14.81 percent as agricultural labour, 30.37 percent as both family and agricultural workers and only 4.07 percent as family worker along with doing job mainly as teachers in primary schools, Asha Kormi, Anganbadi workers and Mid-Day meal cooks in the primary schools. Thus, employment pattern of majority of the respondents is family farm labour in agriculture.

- The average size of operational land holdings is 1.36 hectares and the areas operated by small and medium farm categories are very low as compared to large farm category. 14.81 percent of respondents belong to landless category, 38.89 percent belong to small, 30 percent from medium and only 16.30 percent from large farm categories.

- During the survey, it is found that 57.04 per cent of the farm women are indebted while the remaining 42.96 percent have not availed credit from any source during that period. Out of the total indebted respondents, majority (52.60%) avail credit from friends and relatives followed by money lenders (27.27%), SHGs (24.03%), landlords (7.79%) and banks (5.19%). Farm women generally approach informal credit sources such as village moneylenders, landlords and friends or relatives. It is to note that only few women, mainly from medium and large farm households have availed loan from institutional sources along with other sources.

- Main purpose of availing credit by the respondents is to meet their household consumption and to perform ritual functions. 41.56 percent have availed loan for household consumption and 25.32 percent availed for ritual functions. 14.94 percent of respondents have received loan for maintaining the cost of agriculture or to cover loss in agriculture. A small number of women from medium and large farms (7.14%) has accepted loan to purchase agricultural materials and machinery, farm land etc. who wanted to contribute their men-folk investing in agriculture.

- More than half of the respondents (52.96%) have no social participation followed by 33.70 percent and only 13.33 percent of respondents' participation in one

organization and in two organizations respectively and no one was in the position of office holder of any organization and member of more than two organizations.

- Only 20 percent of sample women are having farming experience less than 10 years, 45.93 percent between10 to 20 years and others had more than 20 years. It indicates that most of the farm women practiced agriculture as their source of livelihood from a long time.

- The average number of livestock possessed by per sample household is 5.2. The average number is highest in poultry birds (2.09 for fowls and 1.40 for ducks) and lowest in case of bullock (0.09). Respondents mainly involve in poultry farming and rearing of cows and goats.

7.2.2.ii Women Workers in Agriculture

Part-A: Participation of Women in Agriculture

Participation of women workers in agriculture and allied activities includes their participation in crop cultivation and livestock management activities. To analyse their participation, a total of 10 activities in cultivation and 9 activities in livestock management have been identified. Sample women were asked about the hours they spent in these activities and then converted them into mandays. They participate in seasonal and specific agricultural operations. But the activities related to livestock management are not seasonal and carried on for the whole season. Sample households possess either livestock or poultry. The livestock management activities are performed by the women for the whole year as a part of their daily works in the study area.

- On average, a sample woman devotes anually a total of 184.37 mandays in agriculture consisting of 82.62 mandays in cultivation and 101.75 mandays in livestock management activities.

- In case of mandays devoted by different farm sizes in crop cultivation activities, on average, a woman devotes 94.13 mandays in landless households followed by 74.56 mandays in small, 88.90 mandays in medium and 79.85 mandays in large farm households.

- In case of mandays devoted by women of different farm sizes in livestock management activities, on average, a woman devotes 87.69 mandays in landless, 102.89 mandays in small, and 107.33 mandays in medium an101.54 mandays in large farm households.

- Per farm annual average mandays spent in agriculture is 374.51. Out of this, 181.68 mandays are engaged in cultivation and 192.83 mandays in livestock management.

- Out of total 181.68 mandays in cultivation, 82.62 mandays are contributed by women and 99.06 mandays by men. Similarly, in case of livestock management, out of 192.83 mandays, 101.75 mandays are contributed by women and 91.08 mandays by men.

- No women workers are engaged in activities like harrowing, ploughing, and plant-protection in the study area. Women have not participated in these activities not only due to higher physical labour and technical knowledge involved in these activities but also due to social taboos against women's participation in such

activities. Except these activities, they are found to be engaged in all other activities with variation in mandays.

- Women's participation varies from activity to activity.

- Participation of women workers in livestock management is more than that of men in all the sample farm households.

- Participation of women increases with the increase in the farm sizes except for large farm category. This is mainly because these households depend more on hired labour for farm activities as compared to other farm categories.

- A clear segregation in agricultural activities by sex is observed. Though women share a large burden of agricultural activities, they are assigned with inferior role.

- Activities requiring use of machines and skill, new inputs and market related activities are operated and controlled by men. Women are mostly engaged in labourious and monotonous works. On the contrary, the burden of domestic activities which are regarded unproductive work, almost wholly on the women workers of the farm households.

- During the field survey, respondents reported that on average, women spend 6 to 8 hours daily on household chores whereas a man spends only 1 to 2 hours in such activities. If mandays engaged in domestic works are included in the total labour use of the family members, women's share will be higher than men in the farm households.

Thus women bear the double burden of household and productive works, though their contributions as worker are often neglected and unrecognized.

Part-B: Income of Women from Agriculture

The women workers performing farm activities in the study area are referred to as unskilled labour and they are generally assigned with tedious farm works such as transplanting, weeding, harvesting, winnowing, fodder collection, milking etc. though working hours for all types of labour are similar which is 8 hours per day. The daily agricultural wage rate for women workers in the study area was Rs. 150.00 including mid-day meal whereas for men, it ranges between Rs. 250.00 and Rs.300.00. The average annual working days of women on the basis of mandays are multiplied by Rs. 150.00 to find out the contribution of sample women to the family income from agriculture.

- Average annual income of women workers of sample farm households derived from agriculture becomes Rs. 27655.50. Income derives from cultivation is Rs.12393.00 and from livestock management is Rs.15262.50.

- In case of contribution of women workers to the family income from agriculture by different farm size categories, landless households contribute Rs. 27273.00 followed by contribution made by small, medium and large farm households are Rs. 26617.50, Rs. 29434.50 and Rs. 27208.50 respectively.

- The contribution of women to family income is highest in medium farm households followed by landless, large and small farm households.

- Among the farm sizes, income of women from cultivation is the highest for landless category (Rs.14119.50) and income from livestock management is highest for medium farm category (Rs.16099.50). Due to meager size of holding

and poor economic condition, landless women prefer to work on another person's farm as a source of their livelihood.

- Women workers of sample households as a whole have contributed annually a total of 49780.66 mandays in agriculture as against 51338.13 mandays by men.

- The percentage share contributed by sample women annually in terms of mandays towards agriculture and allied activities is 49.23 percent and men's contribution is 50.77 percent.

- There is discrimination of wage rate between men and women. Men's wage is almost double to women's wage rate. If the wage rate for women and men would be equal, women's contribution to the family income would be much higher than the present contribution.

- It is also observed that the sample women of high income group devote more time in household chores and hence they contribute less to the family income.

From this study it has been found that farm women play a key role in the maintenance of family budget. They devote time and efforts in attending farm activities and caring for the livestock in addition to the household responsibilities.

Answer to the First Research Question

The foregoing analysis has resulted that women workers of all farm size groups have contributed significantly to their family income in contrast to the popular belief that women workers help only marginally in agricultural activities. **Thus the findings prove the first research question.**

7.2.2.iii Problems in Agriculture

A total of 15 problems faced by farm women in agriculture have been identified from pilot survey and after identifying the problems, Garret ranking technique has been done to rank the problems faced by women in agriculture. Respondents are interviewed personally to share their experiences regarding their problems as worker in agriculture.

- Among the problems, women's reproductive and child care practices has got the uppermost rank. This is because of gendered social norms that view unpaid care work as a female prerogative and they have to spend an important part of their day on meeting the expectations of their unpaid care work and reproductive roles. This shows that higher the time spend on unproductive care work, lesser is the time for productive work on agriculture.

- Dual responsibility of women at home and farm occupies the second position. Gender stereotypes regarding women's roles both at work and at home constrain their work opportunities and perpetuate the socio-economic model of a male breadwinner.

- Health problem ranks third with most of respondents reporting health problems of illness, injuries and disorders related to muscular stress in the neck, shoulder, arms and hands. Maximum pain is reported due to adoption of unnatural posture during transplanting, weeding and harvesting. During harvesting, severe pain in shoulder and lower back has been reported by the women.

- According to respondents, poor economic condition accompanied by discrimination in male and female earnings, work under unfavorable condition

for long hours develop their health problems and malnutrition which affect their work performance negatively. Poor economic condition is ranked fourth.

- The other major problems faced by the women are social customs and traditional belief, secondary status in decision making, low level of women's literacy, lack of technical know-how, lack of access to credit, and lack of access to land and other productive resources which ranked as 5^{th} , 6^{th} , 7^{th} , 8^{th} , 9^{th} and 10^{th} problems respectively.

- Lack of family support, non- recognition of women's contribution, natural environment, lack of mobility and male out migration are ranked 11^{th}, 12^{th}, 13^{th}, 14^{th} and 15^{th} respectively.

- Many respondents are of the opinion that traditions and social norms prevent women from inheriting and having control over land and other productive resources. This triggers the problem of accessing credit facilities offered to those only who have the ownership rights of land.

7.2.2.iv Women Workers in Decision Making

Women's decision making capacity in agriculture is measured by constructing a decision making index covering 18 types of agricultural activities. Respondents are asked to indicate the extent of their participation in decision making in the selected items which are measured on four point scale as no participation, only consulted, opinion considered and actively involved in the final decision. The corresponding scores assigned for each response were 0, 1, 2 and 3 respectively. On the basis of scores obtained, women's empowerment through their participation in agricultural decision making has been examined. Following are the major findings.

- Decision making index (DMI) scores of women on 18 selected items ranged from 230-620 against the possible range of 0-810. The higher the index score, greater is the indication of empowerment of respondents. Women's power to take decision regarding storage of farm produce is ranked 1st which scored highest (620). Buying or selling of poultry birds/eggs, uprooting and transplanting of seedling, intercultural operations and harvesting of crops are ranked 2nd, 3rd, 4th and 5th respectively.

- Respondents are less empowered in decision making areas like proper time and method of sowing, purchase or sale of land, buying or selling of animals/animal produce, means of irrigation, sale of farm produce, use of fertilizers and insecticides/pesticides, treatment of livestock and preparation of land which occupy ranks 11th, 12th, 13th, 14th, 15th, 16th, 17th and 18th respectively.

- Women's power to take decision is relatively high in non-skilled areas of agricultural activities like storage of farm produce, uprooting and trasplanting, harvesting of crops, decision regarding poultry care etc. than the skilled and economic areas like use of fertilizer or insecticides and pesticides, application of irrigation, sale or purchase of land, sale of farm produce, sale or purchase of animals etc. as they are male or husband dominated areas, reported by the respondents.

- Poor educational level, multi-dimensional role of women, lack of knowledge on improved technology, male dominance, traditional belief system/ cultural norms, farm women's age, poor access to farm information, lack of women's self-confidence, lack of women focused on agricultural extension activities and

shortage of agricultural extension services are the major constraints which limit women's decision making power in agriculture.

- Age of women, education level, status of women in the family, family income and farming experience of women show a positive relationship while caste, family size and farm size in agriculture show a negative relationship with their decision making power.

- Out of 270 respondents, 61 respondents had low level, 153 had medium level and the remaining 56 respondents have high level of decision making empowerment calculated on the basis of mean and standard deviation of their DMI scores.

Answer to the Second Research Question

The study results that despite their important role in agricultural sector, sample women play a secondary role in decision making related to agricultural matters. During personal interview, it is reported that only in purely domestic matters like decoration of house, purchase of domestic goods, preparation of food, caring and management of poultry etc. women are given freedom to take their own decision. But in matters related to occupation, production and money related matters they enjoy limited freedom. Thus, the findings of the present study result that the work participation of women in agriculture does not lead to their empowerment in agricultural decision making and **hence answers the second research question.**

7.3. Conclusion

Women's participation in agricultural activities is quite widespread and they devote a considerable time in these activities. Women in the study area are actively involved in agricultural activities. The study reveals that their participation is higher in

livestock management activities in comparison to men in terms of man days. In cultivation, their participation is also found to be significant in activities like transplantation, harvesting, weeding and winnowing.

The findings of the study prove that farm women workers play a key role in the maintenance of family budget. They devote a good time and effort in attending farm activities and caring for the livestock in addition to the household responsibilities .Illiteracy or low literacy level, poverty, feminine stereotypes and secondary status, ignorance, traditional social attitude -all these pose as obstacles in their work performance. The patriarchic forms of decision making still continue in the study area. Despite their important role in agricultural sector, their participation in agricultural decision-making is very poor. The present study concludes that in the study area, majority of farm women workers are married and playing a significant role in agriculture and support their men-folk in agricultural operations. They contribute significantly to the family income participating in agriculture and also reducing labour cost in agricultural operations.

7.4. Policy Implications

Based on the findings of the study, following policy implications are drawn for effective and productive participation of farm women in agricultural development and increasing their decision making capacity.

- It has been found from the present study that illiteracy and low level educational status of farm women restrict them to adopt and accept technology in cultivation and livestock management. Women often hesitate and feel reluctant to participate in public interaction and play an insignificant role in decision making due to their low literacy level which also results in lack of skill in conducting farming

activities. The problem of non-recognition of farm women as a decision maker in agricultural activities is faced more by less educated women. Therefore, the vital importance is to arrange non-formal educational programmes for farm women who have lost the opportunity or crossed the age of formal education. There is the need for education covering basic education and vocational education for skill development aiming increasingly at imparting technical literacy.

- Farm women workers are extensively involved in agriculture to help their male counterparts reducing the labour cost of production and contributing to their family income. In spite of their valuable contribution, their participation in agricultural decision making process has found to be very poor. Most of farm women do not have any role in decision making regarding purchase/sale of land and application of technology in farming. Again they enjoy limited freedom in case of production and money related matters like marketing of agricultural inputs and produce which is directly related to farm income. Thus there is a need of special programmes that empower and recognize women especially through education, finance and information. Technical empowerment of farm women should be ensured through infrastructure for dissemination of improved technology giving use and benefits of them in a package of know-how and supporting aids. Integrated awareness creation strategy should also be designed and facilitated by stakeholders to minimize the social, cultural and economic barriers that affecting farm women's decision making.

- It is also found that women workers receive lower wages compared to male workers for equivalent work. To bring about an improvement in the status of farm women workers, step should be taken to raise their wages to improve their

economic condition. To achieve this, the government should enforce the fixation of minimum wages for different works separately depending upon the importance of work and equal wages for similar work for men and women should be maintained. Government policy for eight hours of works should be fixed including the lunch and rest break.

- The study finds that absence of ownership of land triggers the problem of accessing credit facilities offered to those only who have the ownership rights of land. Due to absence of patta or title of land they lack independent decision on various aspects of agricultural development. Therefore government should take steps to implement right to parental property to be owned by the members of the family irrespective of gender. Public legal awareness campaign and advocacy through different mass media are necessary for implementation of the parental property right specially land right.

- Negative stereotype images of rural working women should be changed with the help of mass media. Both the central and the state governments should provide sufficient and additional employment opportunities in agricultural and non-agricultural sector in the field of vegetable and fruits processing, horticulture and medicinal plants growing, poultry farming, rope and coir making from jute and especially in the area of handloom and weaving.

- Demonstration and training camps for dissemination of new farm technology should be held on regular intervals for women in all the villages especially in the afternoon when they get free from their household chores. Strength and physical structure of women should be considered in developing farm technology by the agricultural engineers. Easy and light to handle technology

should be developed for women workers so that their drudgery be reduced. Female agricultural agents and extension officers should be appointed with a special focus on farm women so they can be easily contacted.

- The government, community of scientists and policy makers responsible for designing agricultural development policies and programmes of the future must begin with viewing rural farm women, their roles, their lives, their problems and their experiences which have generally been overlooked. Efforts should be made to help the farm women to be a part of mainstream development. Being an important segment of agricultural labour market, their contribution should be visible and recognized.

7.5 Scope for Further Research

- Studies can be undertaken in future on the impact of farm mechanization on women workers in agriculture.

- Studies may be undertaken to investigate government funding and programmes and their implementation to mainstream women in the process on agricultural development.

- Studies on gender issues particularly in agriculture and rural social set-up can be undertaken to identify the gaps as well as challenges to gender equality along with possible areas for improvement.

BIBLIOGRAPHY

Afzal, A. (2009) 'Identification and Analysis of Factors Hampering Women Empowerment in Agricultural Decision Making and Extension Work in the Punjab, Pakistan: A Case Study of District Okara', Ph.D. Thesis, University of Agriculture, Faisalabad, Pakistan.

Agarwal, B. (1994) *'A Field of One's Own: Gender and Land Right in South Asia'*, Cambridge University Press.

Agarwal, B. (ed.) (1988) *'Structure of Patriarchy'*, New Delhi, Kali for Women.

Agarwal, H., Sharma S. and Sharma R. (2013) 'A Study of Agricultural Activities Performed by Rural Women and Problems Faced by them in Jammu District of J&K State', *International Journal of Scientific and Research Publications,* Volume 3, Issue 1, pp.1-3.

Al-Haik, H. S. (2015) 'Exploring Women Farmers' Experiences: A Case Study of Gender Inequality on Small Turkish Farms', A Dissertation submitted to the faculty of the Virginia Polytechnic Institute and State University.

Arku, E. and Arku, F.S. (2009) 'More money new household cultural dynamics: Women in micro finance in Ghana', *Development in Practice*, Vol. 19(2): 200 - 213.

Barik, B. B. (2008) *'Invisible Works and Income of Indian Farm Women'*, S. R. Scientific Publishers.

Behera, B. S. and Behera, A. C. (2013) 'Gender Issues: The Role of Women in Agriculture Sector in India', *International Journal of Marketing, Financial Services & Management Research,* Vol. 2(9), pp.134-145.

Bharathamma, G.U., Angadi, J.G., Hirevenkanagoudar and Natikar, K.V. (2006) 'Empowerment of Rural Women Through Income Generating Activities', *Karnataka J. Agric. Sci.,* Vol. 9(3), pp. 600-602.

Bhati, J. P. and Singh, D. V. (1987) 'Women's Contribution to Agricultural Economy in Hill Regions of North-West India', *Economic and Political Weekly,* Vol.22 (7), pp. 7-11.

Bora, L., Hazarika, P., Borgohain A. and Hazarika, M. (2000) 'Role performance of farm women in animal husbandry practices in Arunachal Pradesh', *Indian J. Soc. Res.,* Vol.41(1), pp. 71-76.

Boserup, E. (1970) *'Women's Role in Economic Development'*, New York: St. Martin's Press.

Butt, T.M., Hassan, Z. Y., Khalid Mehmood, K. and Sher Muhammad, S. (2010) 'Role of Rural Women in Agricultural Development and Their Constraint', *Journal of Agriculture & Social Sciences*, Vol.6, No.3, pp. 53-56.

Census of India 2011, District Census Handbook, Morigaon, Assam. [Online] http://censusindia.gov.in

Census of India 2011, Primary Census Abstract (PCA), Morigaon, [Online] http://www.censusindia.gov.in

Chauhan, S. K. (1999) 'Women Participation in Tribal Economy', *Indian J. Agric. Econ.*, Vol. 54(3), pp.320.

Chawhan, S.K. and Oberoi, R.C. (1990) 'Role of Tribal Women in Farm Operations', *Indian J.Home Sci.,* Vol. 20(2), pp.33-36.

Chayal, K. and Dhaka, B. L. (2010) 'Analysis of Role Performance of Women in Farm Activities', *Indian Res. J. Ext. Edu.,* Vol. 10 (2), pp.109-112.

Chayal, K., Dhaka B. L., Poonia, M. K., Tyagi, S. V. S. and Verma S. R. (2013) 'Involvement of Farm Women in Decision making in Agriculture', © *Kamla-Raj, Stud Home Com Sci*, Vol. 7(1), pp. 35-37.

Connelly, M. P., Parpart, J.L. and Barriteau, V.E. (ed.) (2000) '*Theoretical Perspectives on Gender and Development'*, International Development Research Centre, Ottawa. [Online] https://www.idrc.ca/sites/default /files/ openebooks/272-4/index.html

Cornheil, S. L. (2006) 'Feminization of Agriculture: Trends and Driving Forces', Background Paper for the World Development Report 2008. [online] siteresources.worldbank.org/INTWDRS/.../LastarriaCornhiel _Feminization ofAgri. Pdf

Dak, T.M. and Sharma, A. (1986) 'Social and institutional framework of female participation in agriculture', *Indian journal of Social work*, Vol. 47(3), pp.285-291.

Danielsson, L.and Jacobson, H. (2008) '[GADering WID Boserup] Three perspectives on women and the gender impasse in the Mozambican district of Nacala Porto', Master Thesis in Peace and Development Studies Spring 2008, Vaxjo university, School of Social Science. [Online] www.diva-portal.org/smash/get/diva2:206165/FULLTEXT01.pdf

Das, J. K. (2014) 'Empowering Farm Women through Income and Livelihood Generation', *International Journal of Bio-resource and Stress Management,* Vol. 5(1), pp. 74-77.

Debnarayan, S. (2006) 'Development theory and gendered approach to development: some theoretical issues in the Third World's perspective', [Online] https://mpra.ub.uni-muenchen.de/.../Development Theory_and_Gender_Approach.pdf

Devi, A. L. and Reddy, S. V. (1984) 'Role Expectation and Role Performance of Rural Women in Farm Activities', *Indian Journal of Extension Education*, Vol. 20 (3 & 4), pp. 176-179.

Dixon, R.B. (1982), 'Women in Agriculture: Counting the Labour Force in Developing Countries', *Population and Development Review*, Vol.8 (3):5339-56.

Dommati, D. and Chittedi, R. K. (2011) 'Socio- Economic Conditions of Agricultural Women Labour in Andra Pradesh Case Study of Karimnagar District', *International Journal of Business Economics & Management Research,* Vol. 2(3), pp.115-134.

Due, J. M., Mudenda, T., Miller, P. and White, M. (1985) 'Women's Contributions to Farming Systems and Household Income in Zambia', Working Paper, May, 1985, The Women in International Development Publication Series, Editor: Rita S. Gallin.

Fabiyi, E. F., Danladi, B. B., Akande, K. E. and Mahmood, T. (2007) 'Role of Women in Agricultural Development and Their Constraints: A Case Study in Biliri Local Government Area, Gombe State, Nigeria', *Pakistan Journal of Nutrition,* Vol. 6(6), pp.676-680.

Fao (2011) 'The State of Food and Agriculture 2010-2011: Women in agriculture', FAO, Rome. [Online] http://www.feedtheFuture.gov/... Clinton%20women%20 and the agriculture report...pdf.

FAO (2014) 'The State of Food and Agriculture: Innovation in family farming', Food and Agriculture Organization of the United Nations, Rome, [Online] http://www.fao.org/3/a-i4040e.pdf

Fourth World Conference on Women (1995), Beijing Declaration. [Online] www.un.org/women watch/ daw/beijing/platform/declar.htm

Garrett, H. E. (1961) '*Statistics in Psychology and Education*', Vakil, Ferrer and Simons Ltd., Tenth Indian Reprint.

Girade, S., and Shambharkar, S. (2012) 'Profile Of Farm Women And Constraints Faced by Them In Participation Of Farm And Allied Activities', *Indian Journal of Applied Research*, Vol.1 (12), pp. 69-71.

Gogoi, B. C., (1989) 'A Study on Women's Knowledge and Their Participation in Farm Operations with Special Reference to Rice Production', M. Sc. Thesis, Assam Agricultural University, Jorhat, Assam.

Goswami, C. (2013) 'Female Agricultural Workers in Assam: A Case Study of Darrang District', *International J. Scientific and Research Publications*, Vol. 3 (2), pp.1-5.

Goswami, N. (2016) 'Feminization of Agriculture in Assam: Dimension and Trend', Ph. D. Thesis, Gauhati University, Guwahati.

Government of Assam (2013) 'Economic Survey 2012-13', Directorate of Economics and Statistics, Assam.

Government of Assam (2015) 'Statistical Handbook 2014', Directorate of Economics and Statistics, Assam.

Government of Assam (2016) 'Economic Survey 2015-16', Directorate of Economics and Statistics, Assam.

Government of India (2001), Census data 2001 [Online] http// www.censusindia.gov.in

Government of India (2012) 'Statistical Profile on Women Labour 2009-2011', Labour Bureau Ministry of Labour & Employment, Government of India.

Government of India (2014) 'Statistical Profile on Women Labour 2012-2013', Labour Bureau Ministry of Labour & Employment, Government of India.

Government of India (2016) 'Economic survey 2015-16', CSO, New Delhi.

Hendricks, J. (2010) '*Dependency Theory*' Encyclopedia of Sociology, edited by E.F. Borgatta. January 5, 2012, [Online] http://edu.learnsoc.org/Chapters/3%20theories%20of%20sociology/5%20dependency%20theory.htm

Hirway, I. and Roy, A. K. (1999) 'Women in Rural Economy: The Case of India', *Indian Journal of Agricultural Economics*, Vol.54, No.3, pp. 251-271.

Iftikhar, N. (2010) 'The Role of Rural Women in Agriculture and Their Training Needs: A Case Study of District Bahawalpur, Pakistan', Ph. D. Thesis, University of Agriculture, Faisalabad, Pakistan.

Jamali, K. (2009) 'The Role of Rural Women in Agriculture and It's Allied Field: A Case Study in Pakistan', *European Journal of Social Sciences*, Vol. 7, No. 3, pp. 71-77.

Kachroo, J. (2005) 'Rural Farm Women's Contribution to Family Income in Jammu District', *J. Rural Dev.*, Vol. 24 (4), pp. 481-500.

Kanj, N., Tan Su Fei and Toulmin, C. (2008) '*Women's Role in Economic Development, Ester Boserup*', A New Introduction, Earthscan, London. Sterling, VA.

Kaur, R. (2008) 'Gender and Social Analysis of Dairy Farming: a Case Study of Punjab', *Journal of Rural Development*, Vol. 27(1), pp.129-147.

Khan, M., Sajjad, M., Hameed, B., Khan, M. N. and Ullah Jan, A. (2012) 'Participation of Women in Agriculture Activities in District Peshawar', *Sarhad J. Agric.*, Vol. 28(1), pp. 121-127.

Kiran, Dipak D., Gupta, B. K., Pandey, D. K. and Upadhaya, A. D. (2012) 'Empowerment of Rural Women in Agriculture:A Socio-psychological Analysis', © *Kamla-Raj 2012, Stud Home Com Sci.*, Vol. 6(3), pp.139-144.

Kishore, R., Gupta, B., Yadav, S. R. and Singh, T.R. (1999) 'Role of Rural Women in Decision Making Process in Agriculture in district Sitapur (U.P.)', *Indian Journal of Agricultural Economics,* Vol.54, No.3, pp. 282-286.

Krishnaraj, M. and A. Kanchi (2008) '*Women Farmers of India'*, National Book Trust.

Kumar, N. (2006) '*Role and Status of Women in Agricultural Development'*, Akansha Publishing House, New Delhi, 2006.

Kumar, R. and Kumar, M. (2009) '*Women Health, Empowerment and Economic Development: Their Contribution to National Economy'*, Encyclopedias of Women Health and development-12, *Deep & Deep Publication*, Pvt Ltd, New Delhi.

Mamatha, T.G. and Hiremath, G. K. (2000) 'Season Wise Employment and Income of Farm Women from Farming Activities in Karnataka', *Karnataka J.Agric. Sci.,* Vol. 13 (2), pp. 480-82.

Matunhu, J. (2011) 'A critique of modernization and dependency theories in Africa: Critical assessment', *African Journal of History and Culture,* Vol. 3(5), pp. 65-72.

Meti, S. K., (2013) 'Social and Economic Empowerment of Farm Women in Agro Based Entrepreneurship for Sustainable Income', Proceeding of the International Conference on Social Science Research (ICSSR), 4-5 June 2013, Penang, Malaysia.

Miller, C. and Razavi, S. (1995) 'From WID to GAD: Conceptual Shifts in the Women and Development Discourse', Occasional Paper 1, United Nations Development Programme, United Nations Research Institute for Social Development.

Ministry of Water Resources (2013) 'Ground Water Information Booklet', Morigaon District, Assam.

Mishra, P.K., Sahu, R.M. and Agrawal, G.P. (1999) 'Extent and Proportion of Women's Participation in Paddy Cultivation – A Study of Kymore Plateau and Satpura Hill of Madhya Pradesh', *Indian J. Agric. Econ.* Vol. 54 (3). Pp. 321-322.

Mondal, M. (2013) 'The Role of Rural Women in Agriculture Sector Of Sagar Island, West Bengal, India', *The International Journal Of Engineering And Science (Ijes),* Vol. 2, No. 2, pp. 81-86.

Mulugeta, M. and Amsalu, T. (2014) 'Gender, Participation and Decision Making Process in Farming Activities: The Case of Yilman Densa District, Amhara Regio, Ethiopia', *Journal of Economics and Sustainable Development,* Vol.5, No.1, pp. 28-34.

Muyoyeta, L. (2004) '*Women, Gender and Development Women for Change*', Zambia and 80:20 Educating and Acting for a Better World, Ireland.

Narayan, U. (1989) 'The project of feminist epistemology', in Jaggar, Alison M.; Bordo, Susan R (eds.), '*Gender/Body/Knowledge: Feminist Reconstructions of Being and Knowing*', New Brunswick, New Jersey: Rutgers University Press, pp. 256–272.

Nisha, N. (2008) 'Women Labour in Agriculture-An Economic Analysis, M.Sc. Thesis, University of Agricultural Science, Dharwad, 2008.

Nosheen, F. (2010), 'Analysis of Gender Involvement in Agricultural Decision Making and Rural Development in Punjab: A Case Study of District Chakwal', Ph.D. Thesis, University of Agriculture, Faisalabad, Pakistan.

NSS 50th, 55th, 61st, 64th, 66th and 68th Rounds, Reports of Employment and Unemployment in India, Government of India.

Okafor, E. E., Akinwale, A. A. and Doyin –Hassa, A. (2007) 'Feminization of Underdevelopment in Nigeria: Some Theoretical Issues', *Kamla-Raj, Anthropologist,* Vol 9(3), pp. 237-245.

Parveen, S. and Leonhäuser, I. (2004) 'Empowerment of Rural Women in Bangladesh: A Household Level Analysis', Conference on Rural Poverty Reduction through Research for Development and Transformation, Berlin, 5-7 October.

Parveen, S., Hossain, M.R., Kausar, A.K.M.G., Shibli, M.M.A., Rahhan, M.M. and Ahmed, J. U. (2013) 'An Assessment of Women Participation in Farm Household Income: A Study in Some Selected Areas of Mymensingh District of Bangladesh', IRJALS, Vol. 2(4), pp.16-26.

Potential Linked Credit Plan (2015-2016), Morigaon District, Assam, National Bank for Agriculture and Rural Development (NABARD), Guwahati.

Radhika, K. (2008) '*Women in Agricultural Development*', Serials Publications, New Delhi, India.

Rais, M.N., Solangi, A.W. and Sahito, H.A. (2013) 'Economic Assessment of Rural Women Involved in Agriculture and Livestock Farming Activities', *Wudpecker Journal of Agricultural Research*,Vol. 2(4), pp.115 – 121.

Rathge, R.W. (1989) 'Women's Contribution to the Family Farm', *Great Plains Quarterly,* pp. 36-47, [Online] http://digitalcommons.unl.edu/cgi/ viewcontent. cgi?article=1542&context=greatplainsquarterly

Rathgeber, E.M. (1990) 'WID, WAD, GAD: Trends in research and practice', *The Journal of Developing Areas,* Vol. 24, No.4, pp. 489-502.

RehmanAlvi, T. U., Hanif, I., Feryal, I., Warraich, Ahmad, I. and Naveed, M. (2012) 'Women Participation in Socio-Economic Development in Agriculture Areas of Pakistan', *Universal Journal of Management and Social Sciences*, Vol.2(10), pp.9-20.

Roy, U. (1997) 'Status of Rural Women', M. Sc. (H. Sc.) Thesis, Assam Agricultural University, Jorhat, Assam.

Saikia, A. (1982) 'Female Participation in Agriculttural Operations In Assam-A Study in Sibsagar District' PhD Thesis, Gauhati University, Guwahati.

Saikia, A. (1999) 'Role of Farm Women in Agriculture and Their Involvement in Decision Making- A Study in Jorhat District of Assam', *Indian J. Agric. Econ.* Vol.54(3). Pp.301-302.

Saikia, P.D., Gogoi, K. and Lekharu, A. (1986) *'Indian Rural Women (A Study on Role and Status of Rural Women in Assam)'*, Mittal Publication, New Delhi-110035, India.

Sarungban, D. (2006) 'Gender Issues in Agriculture- With Special Reference to Rice Farming in Bishenpur District of Manipur', M. Sc. Thesis, Assam Agricultural University, Jorhat, Assam.

Sethi, R. M. (1991) *'Women in Agriculture: A Study of Himachal Pradesh'*, Rawat Publications, New Delhi and Jaipur.

Sharma, A., Singh, D. and Solanki, S. S. (2014) 'Role of Farm Women in Agricultural Operations and Decision Making Pattern', *Indian Res. J. Ext. Edu.* Vol.14 (2), pp. 60-63.

Sharma, D.K. (1992) 'Farm women's participation in agricultural activities in Madhya Pradesh' *Rural India*, 55(3). Pp. 74-78.

Sharma, S., Rao, P. K., and Sharma, R. ((2013) 'Role of Women in Decision-making Related to Farm: A study of Jammu district of J&K State', *International Journal of Scientific and Research Publications*, Vol.3(1),pp 1-4.

Sharma, S.K., Brijbala and Sharma. H.R. (1999) 'Contribution of Female Labour to Farm Income: A Study of Tribal Areas of Himachal Pradesh', *Indian J. Agric. Econ.,* 54(3), pp. 305.

Siddra, N., Khan, I. A., Babar S. and Farkhinda Anjum (2013) 'Rural women's participation and constraints in agricultural activities: a case study of district Nankana Sahib, Punjab', *Pakistan Journal of Agricultural Sciences,* Vol.50 No.2 pp.317-322

Singh, D.V. and Bhati, J.P. (1985) 'Manpower Utilization in Hilly Region of India', *Agricultural Situation in India,* Vol. 40(7), pp.611-616.

Slusser, S. (2009) 'Gender Empowerment and Gender Inequality, the Global Economy and the State: exploring the Relationship between Economic Dependency, the Political Order and Women's Status', A Dissertation Presented to The Graduate Faculty of The University of Akron.

Swaminathan, M. S. (1985) 'Imparting a Rural Women Users Perspective to Agricultural Research and Development', Report of the Project Design Workshop, IRRI, Philippines.

Tiwari, N. (2010) 'Economic and Technological Constraints facing Farm Women', *International Journal of Rural Studies (IJRS),* Vol.17(1) [Online] http://www.vri-online.org.uk/ijrs/April2010/economic-and-technological-constraints-facing-farm-women.pdf

Tuteja, U. (2000), 'Contribution of Female Workers in Haryana', *Indian Journal of Agricultural Economics',* Vol. 55(2), pp.136-148.

Umeh G. N. and Chukwu, V.A. (2014) 'Role of Women in Farm and Family Decision Making Process in Udi Local Government Area of Enugu State, Nigeria', *Journal of Biology, Agriculture and Healthcare,* Vol.4, No.7, pp.01-06.

UNDP (2015) 'Gender Equality in Human Development–Measurement Revisited' Issue Paper, Human Development Report Office, UNDP. [Online] http://hdr.undp.org/sites/default/files/hdro_issue_paper_on_gender_indices_with_cover.pdf

UNDP (2015) Issue Paper Prepared for the Expert Group Meeting on "Gender Equality in Human Development – Measurement Revisited" Human

Development Report Office, [Online] http://hdr.undp.org/sites/default/files/hdro_issue_paper_on_gender_indices_with_cover.pdf

United Nations (1995) 'Report of the Fourth World Conference on Women', Beijing, United Nations. [Online] http://www.un.org/womenwatch/daw/beijing/ pdf/Beijing%20full%20report%20E.pdf

Unnati, A., Ankush, G.S. and Mande, J.V. (2012) 'Extent of Participation of Farm Women in Decision Making', *j. dairying, foods & h.s.*, Vol.31 (1), pp. 72 – 74. [Online] www.arccjournals.com / indianjournals.com.

Unni, J. (1992) *'Women's Participation in Indian Agriculture - A Macro Changes in the Employment of Women'*, Oxford and IBH Publishing Co. Pvt. Limited, New Delhi, 1992.

Unni, J. (1997) 'Women Workers in Agriculture: Some Recent Trends', *The Indian Journal of Labour Economics*, Vol. 40, No. 3, pp. 453-469.

Varghese, M. (2012) 'Women Empowerment Through Kudumashree; A Study In Arnakulm District', Ph D Thesis, Mahatma Gandhi University, Kerela,

Verma, S. K. (1992) *'Women in Agriculture: A Socio-Economic Analysis'*, Concept Publishing Company, New Delhi.

Wood, J. T. (2005) 'Feminist standpoint theory and muted group theory: Commonalities and divergences', *Women and Language,* Vol. 28(2), pp. 61-64.

World Bank (2002) 'Empowerment and Poverty Reduction', A Sourcebook PREM World Bank May 1, 2002. [Online] siteresources.worldbank.org/INTEMPOWERMENT/Resources/486312.../draft.pdf

Appendices

Appendix I

CENSUS OF INDIA 2011
PRIMARY CENSUS ABSTRACT
FIGURES AT A GLANCE
INDIA

		2001	2011	Increase			
No. of States/UTs		35	35	-			
No. of Districts		593	640	47			
No. of Sub-Districts		5,463	5,924	461			
No. of Towns		5,161	7,933	2,772			
No. of Statutory Towns		3,799	4,041	242			
No. of Census Towns		1,362	3,892	2,530			
No. of Villages		6,38,588	6,40,930	2,342			
Total population		Absolute			Percentage		
		Total	Rural	Urban	Total	Rural	Urban
	Persons	1,21,05,69,573	83,34,63,448	37,71,06,125	100.0	68.8	31.2
	Males	62,31,21,843	42,76,32,643	19,54,89,200	100.0	68.6	31.4
	Females	58,74,47,730	40,58,30,805	18,16,16,925	100.0	69.1	30.9
Decadal change 2001-2011		Absolute			Percentage		
		Total	Rural	Urban	Total	Rural	Urban
	Persons	18,19,59,458	9,09,73,022	9,09,86,436	17.7	12.3	31.8
	Males	9,09,65,182	4,60,30,080	4,49,35,102	17.1	12.1	29.9
	Females	9,09,94,276	4,49,42,942	4,60,51,334	18.3	12.5	34.0
Sex Ratio		943	949	929			
Child Population in the age group 0-6 years		Absolute			Percentage to total population		
		Total	Rural	Urban	Total	Rural	Urban
	Persons	16,44,78,150	12,12,85,762	4,31,92,388	13.6	14.6	11.5
	Males	8,57,32,470	6,30,64,665	2,26,67,805	13.8	14.7	11.6
	Females	7,87,45,680	5,82,21,097	2,05,24,583	13.4	14.3	11.3
Child Sex Ratio		919	923	905			
Literates		Absolute			Literacy rate		
		Total	Rural	Urban	Total	Rural	Urban
	Persons	76,34,98,517	48,26,53,540	28,08,44,977	73.0	67.8	84.1
	Males	43,46,83,779	28,12,81,531	15,34,02,248	80.9	77.2	88.8
	Females	32,88,14,738	20,13,72,009	12,74,42,729	64.6	57.9	79.1
Scheduled Caste population		Absolute			Percentage to total population		
		Total	Rural	Urban	Total	Rural	Urban
	Persons	20,13,78,086	15,38,50,562	4,75,27,524	16.6	18.5	12.6
	Males	10,35,35,165	7,91,18,138	2,44,17,027	16.6	18.5	12.5
	Females	9,78,42,921	7,47,32,424	2,31,10,497	16.7	18.4	12.7
Scheduled Tribe population		Absolute			Percentage to total population		
		Total	Rural	Urban	Total	Rural	Urban
	Persons	10,42,81,034	9,38,19,162	1,04,61,872	8.6	11.3	2.8
	Males	5,24,09,823	4,71,26,341	52,83,482	8.4	11.0	2.7
	Females	5,18,71,211	4,66,92,821	51,78,390	8.8	11.5	2.9

Total Workers		Absolute			Work Participation Rate		
		Total	Rural	Urban	Total	Rural	Urban
	Persons	48,17,43,311	34,85,97,535	13,31,45,776	39.8	41.8	35.3
	Males	33,18,65,930	22,67,63,068	10,51,02,862	53.3	53.0	53.8
	Females	14,98,77,381	12,18,34,467	2,80,42,914	25.5	30.0	15.4
Main Workers		Absolute			Percentage to total workers		
		Total	Rural	Urban	Total	Rural	Urban
	Persons	36,24,46,420	24,57,49,270	11,66,97,150	75.2	70.5	87.6
	Males	27,31,49,359	17,80,34,713	9,51,14,646	82.3	78.5	90.5
	Females	8,92,97,061	6,77,14,557	2,15,82,504	59.6	55.6	77.0
Marginal Workers		Absolute			Percentage to total workers		
		Total	Rural	Urban	Total	Rural	Urban
	Persons	11,92,96,891	10,28,48,265	1,64,48,626	24.8	29.5	12.4
	Males	5,87,16,571	4,87,28,355	99,88,216	17.7	21.5	9.5
	Females	6,05,80,320	5,41,19,910	64,60,410	40.4	44.4	23.0
Marginal Workers (3-6 months)		Absolute			Percentage to total marginal workers		
		Total	Rural	Urban	Total	Rural	Urban
	Persons	9,70,44,107	8,30,31,670	1,40,12,437	81.3	80.7	85.2
	Males	4,85,79,387	4,00,34,385	85,45,002	82.7	82.2	85.6
	Females	4,84,64,720	4,29,97,285	54,67,435	80.0	79.4	84.6
Marginal Workers (Less than 3 months)		Absolute			Percentage to total marginal workers		
		Total	Rural	Urban	Total	Rural	Urban
	Persons	2,22,52,784	1,98,16,595	24,36,189	18.7	19.3	14.8
	Males	1,01,37,184	86,93,970	14,43,214	17.3	17.8	14.4
	Females	1,21,15,600	1,11,22,625	9,92,975	20.0	20.6	15.4
Total Cultivators		Absolute			Percentage to total workers		
		Total	Rural	Urban	Total	Rural	Urban
	Persons	11,86,92,640	11,49,68,498	37,24,142	24.6	33.0	2.8
	Males	8,27,06,724	7,98,39,098	28,67,626	24.9	35.2	2.7
	Females	3,59,85,916	3,51,29,400	8,56,516	24.0	28.8	3.1
Total Agricultrual Labourers		Absolute			Percentage to total workers		
		Total	Rural	Urban	Total	Rural	Urban
	Persons	14,43,29,833	13,69,94,451	73,35,382	30.0	39.3	5.5
	Males	8,27,40,351	7,79,30,236	48,10,115	24.9	34.4	4.6
	Females	6,15,89,482	5,90,64,215	25,25,267	41.1	48.5	9.0
Total Household Industry Workers		Absolute			Percentage to total workers		
		Total	Rural	Urban	Total	Rural	Urban
	Persons	1,83,36,307	1,19,47,619	63,88,688	3.8	3.4	4.8
	Males	97,75,635	58,63,891	39,11,744	2.9	2.6	3.7
	Females	85,60,672	60,83,728	24,76,944	5.7	5.0	8.8
Total Other Workers		Absolute			Percentage to total workers		
		Total	Rural	Urban	Total	Rural	Urban
	Persons	20,03,84,531	8,46,86,967	11,56,97,564	41.6	24.3	86.9
	Males	15,66,43,220	6,31,29,843	9,35,13,377	47.2	27.8	89.0
	Females	4,37,41,311	2,15,57,124	2,21,84,187	29.2	17.7	79.1

Appendix II

Block Wise Mandays devoted by Women in Cultivation

MAYONG

Activities	Landless	Small	Medium	Large	Total
Land preparation		22	12.25		34.25
Sowing		1.5			1.5
Up rooting	24.5	54.5	59.5	12.75	151.25
Transplanting	485	1222.5	892	372	2971.5
Weeding	32.5	275	232.75	64	604.25
Fertilizer/Manure application			2	5	7
Irrigation		4.75	5.25		10
Plant protection					
Harvesting	435	1147.25	788.25	330.5	2701
Threshing/post-harvest operations	41.25	497.5	410	204.75	1153.5
All Activities	1018.25	3225	2402	989	7634.25

BHURBANDHA

Activities	Landless	Small	Medium	Large	Total
Land preparation		32.25	28.5		60.75
Sowing	22.5	52	64	12.5	151
Up rooting	650	958.75	887.25	455.5	2951.5
Transplanting	45	110.5	185	38.25	378.75
Weeding		3			3
Fertilizer/Manure application			4		4
Irrigation					
Plant protection	570	886	818.38	408	2682.38
Harvesting	70.75	448.25	398.25	256.63	1173.88
Threshing/post-harvest operations	1358.25	2490.75	2385.38	1170.88	7405.26
All Activities					

DOLONGGHAT

Activities	Landless	Small	Medium	Large	Total
Land preparation					
Sowing			5		5
Up rooting	20	48.13	55	7.5	130.63
Transplanting	648	816.5	942	540.75	2947.25
Weeding	63.75	124.5	149.5	22.25	360
Fertilizer/Manure application			4.5		4.5
Irrigation		2.5			2.5
Plant protection					
Harvesting	572	766.25	824	495	2657.25
Threshing/post-harvest operations	84.75	354.75	433.63	288	1161.13
All Activities	1388.5	2112.63	2413.63	1353.5	7268.26

Appendix III: Block Wise Mandays devoted by Women in Livestock Management

MAYONG

Activities	Landless	Small	Medium	Large	Total
Fodder collection	76.04	182.56	91.28	39.56	389.44
Preparing food/ feeding	243.36	1300.36	821.28	380.2	2745.2
Grazing of animal	30.4	72.96			103.36
Offering water	68.46	577.98	349.83	152.1	1148.37
Cleaning animal	85.2	164.34	54.78		304.32
Cleaning shed/utensils	182.48	866.78	730.08	342.2	2121.54
Health care	36.52	433.29	304.2	157.41	931.42
milking	45.64	319.41	182.56	36.52	584.13
Caring of chicks and birds	121.68	456.3	287.49	121.68	987.15
All Activities	889.78	4373.98	2821.5	1229.67	9314.93

BHURBANDHA

Activities	Landless	Small	Medium	Large	Total
Fodder collection	91.26	159.74	68.46	27.39	346.85
Preparing food/ feeding	365.04	943.02	855.5	513.3	2676.86
Grazing of animal	39.56	118.69			158.25
Offering water	68.46	308.07	395.46	152.1	924.09
Cleaning animal	82.17	138.45	54.78		275.4
Cleaning shed/utensils	273.72	824.91	790.92	456.3	2345.85
Health care	127.88	308.07	239.61	148.33	823.89
milking	63.9	219.09	170.38	54.78	508.15
Caring of chicks and birds	167.31	425.88	228.2	68.46	889.85
All Activities	1279.3	3445.92	2803.31	1420.66	8949.19

DOLONGGHAT

Activities	Landless	Small	Medium	Large	Total
Fodder collection	158.16	209.11	114.06	63.91	545.24
Preparing food/ feeding	365.04	889.72	950.5	684.36	2889.62
Grazing of animal	30.4	54.72			85.12
Offering water	89.01	251.02	380.25	170.38	890.66
Cleaning animal	100.43	83.6			184.03
Cleaning shed/utensils	273.72	790.92	821.28	547.52	2433.44
Health care	136.92	209.99	243.36	182.52	772.79
milking	82.17	159.75	194.72	54.78	491.42
Caring of chicks and birds	102.69	334.62	365.04	114.1	916.45
All Activities	1338.54	2983.45	3069.21	1817.57	9208.77

Appendix III

Mandays devoted by Men in Cultivation

Activities	Landless	Small	Medium	Large	Total
Land preparation	890	3096	3118.5	2215	9319.5
Sowing	64	268	282	223.5	837.5
Up rooting	78	148.25	144	42	412.25
Transplanting	305.75	1012	738	104	2159.75
Weeding	84	190.25	134.75	65	474
Fertilizer/Manure application	374	1486	1476	902	4238
Irrigation	138	336	538.5	368.75	1381.25
Plant protection	58.5	294	316	296.75	965.25
Harvesting	544	1008.75	894	358.75	2805.5
Threshing/post-harvest perations	455	1184.5	1456.5	1057.38	4153.38
Total mandays	2991.25	9023.75	9098.25	5633.13	26746.38
Average mandays	74.78	111.40	112.32	128.03	99.06

Appendix IV

Mandays devoted by Men in Livestock Management

Activities	Landless	Small	Medium	Large	Total
Fodder collection	1095.04	4014.72	3178.32	1634.86	9922.94
Preparing food/ feeding	60.8	553.84	152	33.2	799.84
Grazing of animal	608.32	1460.16	867.16	304	3239.64
Offering water	319.5	684.6	346.94	213	1564.04
Cleaning animal	380.2	1095.12	1034.28	319.48	2829.08
Cleaning shed/utensils	109.52	438.12	78	38	663.64
Health care	313.88	1204.72	1034.28	588.67	3141.55
milking	255.64	821.52	775.88	577.98	2431.02
Caring of chicks/birds					
Total Mandays	3142.9	10272.8	7466.86	3709.19	24591.75
Average Mandays	78.57	97.84	92.18	84.29	91.08

Appendix V

WOMEN WORKERS IN AGRICULTURE- A STUDY IN MORIGAON DISTRICT OF ASSAM

INTERVIEW SCHEDULE

DATE- **BLOCK-** **VILLAGE-**

Name of the Respondent (optional):

A. SOCIO- ECONOMIC PROFILE:

1. Age of the respondent:
2. Education: a. Illiterate b. Functionally literate c. Literate

   If literate, please mention the level of education:-
3. Marital status: a. Unmarried / Single b. Married c.) Separated / Divorced d.) widow
4. Size of the family: Adult-- Male-- Female--

   Minor-- Boy-- Girls--
5. Type of family: a) nuclear b) joint
6. Caste: a. General b. OBC c. ST d. SC
7. Family heads' occupation of Farm Households: a) Agriculture b) Agricultural labourers c) Agriculture plus subsidiary business d) Agriculture plus service
8. Working Members in the Family (No.): Male:- Female:-
9. Monthly income of the family: a) Below Rs. 5000 b) Rs. 5000—Rs.10000 c) RS 10000—Rs.15000 d) Rs. 15000—Rs. 20000 e) Above Rs. 20000.
10. Type of housing: kacha/ pucca/ mixed or semi-pucca
11. Status as worker in agriculture: a) family labour b) agricultural labour 3) Both family labour agricultural labour d) Family labour and service holder e)Any other (Please Specify)-
12. Size of land holding :(In bighas or kothas):
13. Are you Indebted? ------- Yes/No

    If yes, name the sources:-

14. Purpose of availing credit:

a) Household consumption (e.g. treatment for illness, buying property like ornaments, television etc., education expenses of children, construction or renovation of house etc.

b) Ritual functions (e.g. marriages, death ceremonies and other such functions).

c) Maintaining cost of agriculture or to cover loss in agriculture.

d) Investment in agriculture (e.g. buying of agricultural implements and machinery, farm land etc.)

e) Any other.

15. Are you a member of social organizations? Yes/No

If yes, mention number and name of organization/organizations.

15) Farming experiences: a) Up to 10 years b) 10 years to 20 years c) Above 20 years.

16) Mention the dominant and other crops grown by your family. (Mention their season)

Dominant crop - Other crops-

(Area under the crops-) (Area under the crops

17) What is the method and process of cultivation of crops grown by your family? (Please mention the period of transplanting, harvesting and other important activities related to cultivation).

18)) Do you have area under double cropping? Yes/No

If yes, mention the area along with name of the crops:

19) Do you possess any land of your own? Yes/No.

If yes, mention with area:

20) What type of animals do you have, Please mention the no.

1) Buffalos- 2) Bullock- 3) Cows- 4) Goat - 5. Poultry Birds- 6. Any other

B. PARTICIPATION OF WOMEN IN AGRICULTURAL OPERATIONS:

1. Annual employment of men and women in agriculture:

A) Activities of Crop Cultivation	Men			Women		
	No of days engaged	Average hours spent per day	Total hours spent	No of days engaged	Average hours spent per day	Total hours spent
Land preparation						
Sowing						
Up rooting						
Transplanting						
Weeding						
Fertilizer/Manure application						
Irrigation						
Plant protection						
Harvesting						
Threshing/post-harvest operations						
B) Animal Husbandry Activities						
Fodder collection						
Preparing food/ feeding						
Grazing of animals						
Offering water						
Cleaning animal						
Cleaning shed/utensils						
Health care						
milking						
Caring of chicks/birds						

2. Gender division of labour in agricultural operations:

Category	Activities done by men only	Activities done by women only	Activities predominantly done by men	Activities predominantly done by women	Activities jointly done by men and women
Cultivation					
Livestock management					

3. You work in farm: a) Own farm b) Other's farm as hired labour c) Other's farm on mutual exchange of labour

If you work in more than one of the above categories, please tick accordingly.

4. What is the average daily agricultural wage rate around here for (a) Female: i) with lunch:- ii) without lunch:- b) Male: i)with lunch :- ii) without lunch:-

5. What do you do during agricultural off-season?

6. If you involve in any income generating activities during the off-season,

Please mention them-

7. Do you have any job cards? a) Yes/No

8. Are you a member of Self Help Groups (SHGs)? Yes/ No

9. What are the inputs used for production of crops?

10. Do you adopt improved practices in agriculture? If yes, name the practices.

C. PROBLEMS ASSOCIATED WITH WOMEN WORKERS PRACTICING AGRICULTURE

1. Rank the problems according to their severity from your viewpoint.

Sl. No.	Problems / Factors	Rank the problem
1	Women's reproductive role and child care practices	
2	Dual responsibility at home and farm	
3	Social customs and traditional belief	
4	Poor economic condition	
5	Health and mal-nutrition problem	
6	Non- recognition of women's contribution	
7	Natural environment	
8	Low level of women's literacy	
9	Lack of family support	
10	Lack of access to credit	
11	Lack of technical know-how	
12	Lack of access to land and other productive resources	
13	Male out migration	
14	Secondary status in decision making	
15	Lack of mobility	

2. Share your experiences regarding the enlisted problems faced by you in performing farm and livestock management activities.

D. WOMEN WORKERS IN AGRICULTURAL DECISION MAKING

1. Extent of participation of women in decision making in agricultural activities **(Scores in the bracket)**

Sl. No.	Decision making areas/items	No participation (0)	Only consulted (1)	Opinion considered (2)	Actively involves in final decision (3)
1.	Preparation of land				
2.	Crops and varieties to be sown				
3.	Proper time and method of sowing				
4.	Uprooting and transplanting of seedling				
5.	Means of irrigation				
6.	Use of fertilizers and insecticides/pesticides				
7.	Intercultural operations				
8.	Harvesting of crop				
9.	Hire in/hire out of labour				
10.	Purchase or sale of land				
11.	Storage of farm produce				
12.	Sale of farm produce				
13.	Farm credit				
14.	Taking or giving land on lease				
15.	Purchase of agricultural machinery/implements				
16.	Buying or selling of animals/animal produce				
17.	Buying or selling of poultry birds/eggs				
18.	Treatment of livestock				

2. Constraints in agricultural decision making:

Sl. No.	Constraints	Response of the respondents
1.	Poor educational level	
2.	multi-dimensional role of women	
3.	Lack of knowledge about improved technology	
4.	Male dominance	
5.	Traditional belief system/ cultural norms	
6.	Farm women's age	
7.	Poor access of women to farm information	
8.	Lack of women's self-confidence	
9.	Lack of women focused on agricultural extension activities	
10.	Shortage of agricultural extension services	

Multiple responses are allowed.

3. Share your opinion and suggestions regarding your participation in decision making process in agriculture and allied fields.