

**A STUDY OF SOME SELECTED
ECONOMIC ACTIVITIES OF RURAL WOMEN IN
BARPETA DISTRICT OF ASSAM**

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UNDER

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PREFACE

Woman's contribution which forms an integral part of any economy is often underestimated and discriminated in different forms in many respects. Many a time the contribution of women is either not given due attention or marginalized while formulating socio-economic development plans. Being characterized by tradition of sex discrimination and social stratification, the Indian women also occupy a place subordinate to men in many occasions, though they contribute lot in agriculture and allied activities either as cultivators or agricultural labourers. The situation in this respect in Assam in general and Barpeta District of Assam in particular is also no less true. Though female cultivators and agricultural labourers form the largest part of female main workers, their work force participation rate is low and their level of living is also very poor. In this work an effort is made to access the role of female cultivators and agricultural labourers in agriculture and allied activities and to present the various dimensions of their socio-economic conditions of Assam in general and Barpeta District in particular. With a logical research framework and based on secondary and primary data, the main six analytical chapters of this work are devoted to the analysis of socio-economic background of rural women of Assam, nature of economic activities of rural women of Assam, role of rural women in agriculture and allied activities, composition of income and consumption and economic conditions of female cultivators and agricultural labourers. The final chapter synthesizes the whole work along with an appraisal of the contemporary position of women population in Assam and a few suggestions for their quality improvement.

I have great pleasure in acknowledging the help, guidance and cooperation received by me from several individuals and institutions/organizations while carrying out the present research work. Firstly, I offer my gratitude and indebtedness to Dr

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At the end, I shall feel delighted if I learn that this work is useful to at least a few researchers. I sincerely look forward to constructive criticisms and suggestions from the learned scholars for necessary improvement in future.

May, 2012

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LIST OF ABBREVIATIONS

FWPR	=	Female Work Participation Rate
HDR	=	Human Development Report.
GDI	=	Gender Development Index.
WPR	=	Work Participation Rate.
FMR	=	Female Mortality Rate.
HYV	=	High Yielding Variety.
MHH	=	Male Headed Household.
FMM	=	Female Headed Household.
NSSO	=	National Sample Survey Organisation.
IRDP	=	Integrated Rural Development Programme.
FAO	=	Food and Agricultural Organisation.
DLHFS	=	District Level Household Facility Survey.
NFHS	=	National Family and Health Survey.
NER	=	North Eastern Region.
RGI	=	Registrar General of India.
SRS	=	Sample Random Sampling.
MOHFW	=	Ministry of Health and Family Welfare.
LEB	=	Life Expectancy at Birth.
MMR	=	Maternal Mortality Ratio.
GER	=	Gross Enrollment Ratio.
GEI	=	Gross Enrollment Index.
CV	=	Co-efficient of Variation.
SD	=	Standard Deviation.
SE	=	Standard Error.

CHAPTER – I

INTRODUCTION

1.01. Introduction

The productive capacity of an economy depends on the size of its labour force. In addition to the size of labour force, the sex and age structure, education, health, skills, experience, aptitudes of the labour force, are considered to be the primary determinants of the productivity of the labour force. For improved productivity and economic growth, the occupational structure of the labour force, its distribution among various sectors and its regional distribution within the economy are to be taken into consideration. All these aspects of the labour force assume greater importance when the process of economic development is in progress. Apart from these factors, participation of women in economic activities further contributes to the progress of economic development of a nation.

The supply of labour force is found to depend on the rate of participation. However, the factors influencing the male and female participation rates are not identical. Women labour force participation varies in high proportion depending upon various factors existing in various countries. Apart from the wage-rate, the factors influencing female participation rate are the level of technology, occupational pattern and income of the household. Women work force participation is higher among the lower economic and social groups particularly among the weaker sections of the society. Poverty is another factor where women work out of necessity irrespective of their age. Demographic features of female population like age composition, age at marriage, caste, health, fertility and child-care practices, rural-urban composition of the population, nature of migration, determine the potential labour force which can be utilized for productive purposes. Social status and prestige, customs and attitudes, tradition, religious beliefs too affect the volume of female labour supply in the society. Educational standard influences the nature of occupation for females. The stage of economic development through which the society has been passing determines the extent of women's employment outside the house. The stage of industrialization at which the agricultural sector starts to decline rapidly is one determinant of women's job opportunities. Cultural biases as to what constitutes a women's work and her place in society also affect the participation rate while in most

cultures men are expected to seek employment whatever be the level of family income. Literature shows that women's participation in the labour force depends not only on the economic decision of the women herself but to a great extent on her husband's or family's income and employment status.

It also appears from literature that the labour force participation rates for females vary tremendously from one country to another. Participation of women in economic activities is very high in Eastern and Western Europe and in North America and rather low in Latin America and in some Middle Eastern Countries. For example, female participation rate of Czechoslovakia was 61 percent in 1991 and hardly 6 percent in Algeria (UNO, Demographic Year Book, 1995). Female participation in the labour force is higher in the economically developed countries than in the economically backward countries. Female participation rate of Sweden and United States were 60.8 percent and 56.8 percent respectively in 1990 as against only 19.6 percent of Mexico and 39.2 percent of Indonesia during the same period (UNO, Demographic Year Book, 1995). Cultural influences are evident in the international picture of female labour force participation rates. In some African countries it is the responsibility of women to till the land, sow the seeds and harvest the crop. On the other hand, the custom of observing *Purdah* in some Muslim societies precludes the possibility of women engaging themselves in any activity outside their homes (Algeria 6.4 percent FWPR). Again, in the socialist countries (earlier USSR, Poland, Romania, etc.), where equal opportunity for both the sexes is emphasized, hardly any difference exists in the labour participation rates of the two sexes.

Several studies point out that due to social, cultural and economic factors, the demand for female labour is concentrated in some jobs and certain jobs are considered women specific. In USA, Canada, U.K., Australia, New Zealand, Norway, Sweden and Switzerland, women's participation in economic activity is concentrated in the non-agricultural sector. In some countries like Russia, Austria, Finland, Hungary, Japan, Poland, Denmark and Germany, although women's participation is high in agricultural sector it is also sizeable in the non-agricultural sector. Developing countries where agriculture is the dominant sector can be grouped into three categories. The first group of countries is where women's participation is very high and largely confined to agricultural occupation. Haiti, Nepal, Nigeria, Thailand and Turkey are examples of such countries. The second group of countries is where

female participation is at medium level and the concentration is also found to be in agriculture. Countries like India, Malaysia, Morocco, Tunisia fall in this group. The third group of countries is where rate of women's participation is low and restricted mainly to handicrafts and domestic services. Countries like Latin America, Iraq and Pakistan fall in this category. (Labour Bureau Pumphlet, Ministry of Labour and Employment, Govt. of India, 1995)

It is also evident from literature that there is variation from country to country regarding share of the benefit of economic development enjoyed by women. HDR 2001 presents GDI for 146 countries. Norway tops the GDI rankings. The second and third ranking countries are Australia and Canada. Several developing countries and areas do well in the GDI rankings: the Republic of Korea (29), Argentina (33), Poland (26), Uruguay (37), Chile (39), Bahrain (41) and Costa Rica (42). These countries have succeeded in enhancing the basic human capabilities of both women and men. The bottom five places are occupied by Niger, Burundi, Burkina Faso, Ethiopia and Mozambique in ascending order. Women in these countries face double deprivation: overall achievements in human development are low in these countries and women's achievements are lower than men's.

1.02. Statement of the Problem

Just like other developing countries of the world, the female labour force participation of India is low in comparison to male participation rate. The crude labour force participation rate for female (main + marginal) of India was 22.3 percent in 1991 as against 51.6 percent for males (Census Hand Book, 1998). In 2001, it however increased to 25.7 percent for females and 51.9 percent for males (Census of India, 2001, Website). Moreover, there is a good deal of variation regarding female labour force participation rate among the states. There is higher female labour force participation rate for Chhatisgarh (40 percent) followed by Andhra Pradesh (35.1 percent), Rajasthan (33.5 percent), Maharastra (32.6 percent), Himachal Pradesh (32.7 percent), Kranataka (31.8 percent) and Tamil Nadu (31.3 percent) as against lower participation rate for Kerala (15.3 percent), Uttar Pradesh (16.3 percent), West Bengal (18.1 percent), Punjab (18.7 percent), and Bihar (18.8 percent) for 2001 (Census of India, 2001).

It is evident from literature that the female labour force of India is concentrated mainly in low income, low skilled and low productivity jobs. Census of India, 2001 shows that in rural areas 42.2 percent of the males were cultivators, 27.5 percent were agricultural labourers, 2.8 percent were engaged in household industries and 27.5 percent were engaged in other work. When female workers were considered, it was found that 43.4 percent were agricultural labourers and 36.5 percent were cultivators. Thus a higher proportion of male workers were cultivators while a higher proportion of female workers were agricultural labourers. It has been reported that during the process of economic globalization in India (post 1990) there has been a decline in women workforce participation rate particularly in rural areas (India Development Report, 2004-05). In the last decade – between 1994-99 and 1999-2000, there has been near stagnation in the number of female workers in the country as a whole and an absolute decline in the number of female workers in rural areas leading to considerable decline of female WPR as a percentage of male WPR (ibid.). During that period the WPR ratio for females declined from 59.3 percent to 55.3 percent in rural India and from 29.8 percent to 26.8 percent in urban India (ibid.).

Over and above the declining tendency of FWPR in India, there are severe gender inequalities in human development. As per HDR (2001), although the gap between life expectancy of females (64 years) and males (62.8 years) is very small, but in other gender related development indicators, this gap is very wide. For instance, adult literacy of females was barely 46.4 percent as against 69 percent of males (HDR, 2001). Similarly, combined Gross Enrolment Ratio of females was 49 percent as against 63 percent for males (HDR, 2001). Likewise, Estimated Earned Income of females was \$1,531 as compared with that of males which is \$4070 in 2001 (ibid). This implies that female income was just 38 percent of male income. The above implies that either the females suffered from gender discrimination in wage income or they did not have regular employment and a big proportion was employed as casual labourers or a large proportion of female worked part time. There may be many more factors but it cannot be denied that females suffered from gender bias both in education and employment.

Literature also shows significant disparities in basic female capabilities among various states of India. The HDR, 1996 presented a study of disaggregated GDI for 16 Indian States. At the top of the list was Kerala with a GDI value of 0.597 where as

Uttar Pradesh was at the bottom with a GDI value of 0.310 indicating that the GDI value of UP is only half that of Kerala. An in-depth look at the components of the GDI shows some interesting results. Women's share of earned income in Himachal Pradesh is 38 percent and in Maharashtra 30 percent. In Andhra Pradesh, Madhya Pradesh, Gujarat and Karnataka, their share is more than 25 percent. Yet, Kerala ranks at the top because the disparity between its female and male adult literacy rates is the lowest among the 16 Indian states. The female literacy rate in Kerala is 81 percent – only 11 percent lower than for males, while in most of the 16 Indian states the gender disparity in adult literacy is more than 30 percentage points: States like Assam (0.347), Orissa (0.306), Madhya Pradesh (0.312), Rajasthan (0.309), Bihar (0.306) and Uttar Pradesh (0.293) have GDI values so low that they can be compared only with those in such impoverished countries as Haiti (0.354), Nepal (0.310) and Yemen (0.307) – indicating the extremely low level of female human development in large part of India (Kumar Shiva, 1996)

Taking the case of Assam, the state that the present study chooses to focus on, according to the population census of India 2011(P), Assam has 48.81 percent women population and its sex-ratio is 954:1000. Although women literacy of the state is at 67.27 percent, work force participation rate of women is only 20.79 percent as against 49.9 percent of male in 2001. Work force participation rate of rural women in Assam is only 22.3 for every 1000 persons (Anonymous, 2003). There are also district-wise variations of female work force participation rate of Assam. There are some districts where female work force participation rate is higher. It includes Lakhimpur (49.89 percent), Dhemaji (38.20 percent), Golaghat (30.89 percent), Tinsukia (29.90 percent), Karbi-Aglong (31.41 percent), Sibsagar (29.61 percent), Jorhat (29.39 percent), Dibrugarh (29.40 percent), Kokrajhar (25.27 percent), Sonitpur (24.34 percent) and N. C. Hills (24.4 percent). But the districts like Dhubri (8.03 percent), Karimganj (11.85 percent), Hailakandi (16.54 percent), Cachar (13.56 percent), Bongaigoan (15.22 percent), Goalpara (17.54 percent), Barpeta (14.01 percent), Nalbari (18.07 percent), Kamrup (14.77 percent) Morigaon (16.32 percent) and Nagaon (12.24 percent) have lower female workforce participation rate than the average rate for Assam (20.79 percent).

It is evident from literature that rural women in Assam are extensively engaged in agriculture and allied activities. In agriculture, they play active roles in

seed selection, processing, winnowing and threshing. Further, painstaking operations relating to crop production and processing like pre-harvest plantation and post-harvest operations of parboiling, drying, dehusking, storage of paddy and often marketing is a female responsibility. For the landless agricultural households, an important means of earning is husking and grinding. Thus, all the rigorous jobs are undertaken by the female workers. But with the large scale introduction of the milling system, female labour has mostly lost this job. Time spent in weaving and knitting is considered to be the time spent in leisure. In recent years, embroidery, knitting and cutting have made a room among the girls in the rural areas of Assam. Rearing silkworms viz. *endi* and *muga* and mulberry by women is found among the women of Bodos and other tribals. They also engage in sorting of seeds, uprooting of seedlings, transplanting, harvesting and rearing livestock and poultry birds. In the *char* areas, the Muslim women are extensively engaged in agriculture, fishing, livestock, poultry and some domestic industries in addition to household work, similar to women living in other parts of Assam. In Upper Brahmaputra Valley, where there are more than 850 small and large tea gardens, about 50 percent of the total tea garden workers are women (Saikia, 1992).

The nature and extent of involvement of female labour in Assam differ with the variations in agro-production systems. Studies have shown that the intensity of female labour utilization also varies according to agricultural operation and hence the demand for female labour increased sharply during transplanting, harvesting and post-harvest operations. Again, the employment of female labour in agriculture is characterized by peak and slack seasons and hence problem of seasonality arises. Women's participation in the farm activities is higher during July-August and December-January in a year, but they have very little farm activities in October-November and almost no farm activities from February to April.

Literature also shows that the economic reform policy adopted by the government in 1991 to boost the process of economic development has not improved the labour force participation rate of women in Assam. There has been a marginal decline in female workforce participation rate from 21.6 percent in 1991 to 20.8 percent in 2001. But the female labour engaged as 'main workers' have decreased while labour engaged as 'marginal workers' and 'agricultural labourers' have increased during the process of economic liberalization and globalisation. For

example, in 1991, around 58.15 percent of the total female workers were main workers and 41.84 percent were female marginal workers. Cultivators among the female main workers were 50.93 percent, 12.01 percent were female agricultural labourers and 37.05 percent were in other workers group (Census Report, 1991). This picture had changed in 2001. As per Census Report, 2001, it is clear that the percentage of female 'main workers' had declined to 47.42 percent and percentage of marginal workers had increased to 52.5 percent. 41.11 percent of the total workers were female cultivators, 16.15 percent were female agricultural labourers, 7.9 percent were household industrial workers and 34.82 percent were in other workers group. Thus, female labour market is increasingly being marginalised and casualised during the process of economic globalization. It also signifies that full time wage employment is gradually being replaced by flexible and casual forms of employment in the process of economic globalization. Further, the employment opportunities of female labour in the organized sector are becoming limited due to reduction of public investment and low technical knowhow.

In addition to the above problem, the Human Development Report 1996, indicated lower GDI for Assam. It also indicated vast gender inequalities in providing education, health care and other welfare measures. The GDI of Assam was 0.347 as against 0.565 for Kerala, 0.492 of Maharashtra and 0.437 of Gujarat. Share of earned income for females is 23.7 percent as against 76.3 percent of males. Life expectancy at birth for females is 53.8 percent as against 54.8 percent of males in Assam. Although female literacy rate for the state is at 56.03 percent, the literacy rate of rural women is lower at 52.25 percent as against the high rate of the urban women which is 81.09 percent.

Hence, Assam experiences not only low female workforce participation rate, gender segregation in agriculture, variation of WPR in different seasons and agro-production systems but also has experienced casualisation of women's work in the process of economic globalisation. There also exist vast gender inequalities of opportunities and choice distorting social justice and development. The present study will make an attempt to identify the major activities of rural women in Barpeta district of Assam particularly female cultivators and agricultural labourers, their nature and extent during post 1990s against the backdrop of existing gender inequalities. It will also attempt to capture the various dimensions of the productive activities that involve

women and measure their works in terms of labour hours used in agriculture and allied sectors in the Barpeta district of Assam.

Thus, briefly, few studies have attempted to capture the labour force participation of rural women in terms of time contribution and their socioeconomic dimensions in the post 1990s, in both agriculture and allied activities in the economy of Assam, especially in Barpeta District. The proposed study will be an attempt to make an in-depth analytical study in this direction for the chosen area.

1.03. The Profile of the Study Area

The chosen study area is the Barpeta District of Assam. The Barpeta district of Assam is located between 26°5' and 26°51' North latitude and 90°38' east longitude. The district boundary is demarcated by Kamrup and Goalpara districts in the South, Nalbari district in the East, Kokrajhar and Bongaigaon districts of Assam in the West; while the kingdom of Bhutan lies in the North. The district occupies a geographical area of 3245 sq. k.m. For administrative and revenue purposes, the district has two sub-divisions-- Barpeta and Bajali. Further, the district has 12 Development Blocks, 8 revenue circles, 150 Gaon Panchayats, 1073 villages and only 7 small towns. The district headquarter is situated at Barpeta town.

Out of the total population, 93 percent were lived in rural areas and only 7 percent lived in urban areas in 1991. In 2001 there were marginal decreases of people lived in rural areas. 92.29 percent of total population lived in rural areas and only 7.70 percent lived in urban areas.

Out of the total population of 16467201 persons, 798623 are females showing a low FMR. In Barpeta district the FMR in 1991 was 936 females per 1000 males. In 2001, the picture is more or less the same with a marginal increase to 941 females per 1000 males which is marginally higher than Assam (932:1000). However, 6.2 percent of the total female population of Assam belongs to this district and thus the study is an attempt to capture their level of work force participation amidst restricted work opportunities. The district is inhabited by 13,85,659 persons (1991 census) of which 7,06,686 (51 percent) were male and 6,78,973 (49 percent) were females. The total population of the district increased to 1,647,201 persons in 2001 which was about 6.1 percent of the total population of Assam.

Majority of female workers are engaged in agriculture and allied activities. As per 2001 census as many as 50.1 percent of female workers were engaged in agriculture and allied activities where 30.86 percent were cultivators and 19.24 percent were labourers. But, their literacy rates are low in comparison to males. 34 percent of the people were literate in 1991. But female literacy rate was only 26 percent as against 48 percent of male literacy rate. In 2011, the literacy rate increased to 64.88 percent with female literacy rate increasing to 59.04 percent and male literacy rate to 70.72 percent.

There are only 9.49 numbers of primary and middle schools and 1.62 numbers of high schools per ten thousand population. Further, there are 0.93 numbers of colleges and 0.43 numbers of hospitals, dispensaries, per lakh population. Infant mortality per one thousand birth is 66 which is much above the Indian figure. About 82.4 percent of habitations are provided with drinking water facilities, which mean that 17.6 percent of the population are deprived from accessing safe drinking water.

The GDI of the District was 0.249 as against 0.347 of the State as a whole pointing to the fact that gender disparities and discrimination is very high. The present study will also attempt to throw light on this gender disparity and discrimination while valuing women's work vis-à-vis men's work in terms of time. Share of earned income for females was 18.3 percent as against 67.4 percent of males. Life expectancy at birth for females is 51.2 years as against 53.8 years of males in the district. (Hazarika, 2005)

Again, the District has vast 'Char areas' where gender differentials in access to all forms of amenities and work opportunities are noticeable from *a priori* information sources. In the changing scenario of economic globalisation, micro level studies become necessary to provide policy prescriptions for the uplift of the marginalized. The study of the female work force participation and the circumstances under which they are working will thus be able to shed some light on the issues relating to the basic socio-economic status of women in Assam.

1.04. A Profile of the Female Workforce in Barpeta District of Assam

The female labour force participation rate is low in this district. In 1991, the FWPR was only 15.97percent as against 56.59percent of male participation rate. In

2001, the FWPR decreased to 14 percent with also a marked decline in male participation rate to 47.69 percent.

Agriculture is the mainstay of both male and female population. But the pattern of female employment is different from the male. As per 'Statistical Handbook of Assam' 2002, out of total male workers, 98.18 percent were main workers and only 1.81 percent were marginal workers. But in case of female only 33.72 percent of total female workers were main workers and 66.27 percent were marginal workers. 28.51 percent of main workers were female agricultural labourers, 34.93 percent were female cultivators and 36.54 percent of female were in other workers group as against 17 percent of male agricultural labour, 51.77 percent of male cultivators and 31.19 percent males in other workers group. But, this picture changed in 2001. Out of total male workers, 89.5 percent were main workers and 10.5 percent were male marginal workers as against 41.19 percent of female main workers and 58.8 percent of female marginal workers. 43.27 percent of the total workers were male cultivators, 14.90 percent were male agricultural labourer, 2.60 percent of male were engaged as household industrial workers and 39.22 percent of male were in other workers group as against 30.86 percent of female cultivators, 19.24 percent of female cultivators, 15.04 percent of female in household industries and 34.84 percent of female in other workers group.

The economy of the district is basically agrarian. As mentioned earlier, agriculture is the mainstay of the people and therefore is the largest enterprise. Agriculture is mainly rice dominated, which occupies 63.84 percent of the gross cropped area. Besides, oilseeds, pulses and vegetables are also largely cultivated.

The district is poor in industrial development. There is no big or medium size industry in the district. Industrialization is mainly dependent on small cottage, village and agro-based industries which are dependent on agro-products and forest products as their raw materials. Among the traditional cottage industries, bell metal works in Sarthebari, ivory works and cracker works in Barpeta are prominent. These sectors are yet to be modernized. Supari and Chakni-Supari units are coming up in a big way in Howly, Pathsala and Barpeta Road area of the district.

Fishery, animal husbandry, weaving and sericulture are among the subsidiary economic activities. Sericulture is one of the most important agro-based labour

intensive traditional rural industries of the district comprising culture of different varieties of silkworm. Rearing of Eri, Muga and Mulberry silkworm are playing an important role in the economic development of a large section of rural population of the district. About 3859 families of 132 numbers of sericulture villages are directly or indirectly involved with this culture. The handloom industry in the district has a long tradition in the socio-economic life of the people for supplementing the family income to a great extent and self-employment opportunities to lakhs of people of poor and down-trodden section of the society. Almost in every rural household there is weaving activities. It may be mentioned that both sericulture and handloom rural industries are mostly run by women and thus will receive adequate attention within the present study frame.

1.05. Objective of the Study

The present study is planned to be undertaken for Barpeta District in the state of Assam, with the following objectives.

1. To study the socio-economic background of rural women.
2. To analyse the nature of economic activities of rural women in which majority of females are found to be engaged.
3. To assess the role of female cultivators and agricultural labourers in agriculture and allied activities in terms of labour hours. For this, a detailed analysis of seasonal and operation-wise of women's work will be attempted.
4. To access the relative share of the different sources in the income and consumption expenditure of the female cultivators as well as of the agricultural labourers.
5. To analyse the economic conditions of female cultivators and agricultural labourers.
6. To provide suggestions for a gender friendly policy for the betterment of women particularly female cultivators and agricultural labourers of the region.

1.06. Significance of the Study

In Assam, rural women particularly cultivators and agricultural labourers are engaged significantly in food production and other allied activities and household affairs. But women in Assam face discrimination and marginalisation in the labour market. Major part of their labour inputs in many activities is not recognized. They are also paid lower wages than what they actually deserve. It appears from observation that women in most part of India are assigned for less paid work and barred from high paying jobs. They also have little access to new technology. The activities mostly performed by women are not under the purview of minimum wage rule and social security benefits. All these go against women and their children and due to this they fail to cross the poverty line.

The main purpose of the proposed study would be to identify the economic activities where women particularly cultivators and agricultural labourers are mostly found to be employed and to make an assessment of the socio-economic factors that compel them to take up these activities in existing Indian situation in general and that of Barpeta district of Assam in particular. Identification of such activities as well as socio-economic factors that render women's involvement in these activities for a substantive number of work hours would help in suggesting measures for policy making authorities.

1.07. Brief Review of Literature

Studies conducted and literature available related to the chosen area of research enables the researcher to identify issues that may be considered relevant or closely akin to the subject or region under study. The following section is an endeavour towards this end.

FWPR and Segmentation of the Labour Market

Wage Disparities

Because of the segmentation of the labour market in terms of gender, the female workers are paid less than the male workers even for the same work. Sundar's (1981) study explored that women workers are paid less than men for the same agricultural operations, but the gap has narrowed down. Each state has a minimum

wages legislation whereby wages are statutorily fixed. However, in the early seventies, after much deliberation, some state governments deliberately fixed differential rates for men and women, e.g. in Tamilnadu, Kerala and Andhra Pardesh. However, in some states like Gujarat, Maharashtra and Madhya Pradesh, 'equal wages' were prescribed for men and women. By 1980-81, these differentials were narrowed down and this change was perhaps not a real one as he concluded. Despite all such legislations, including the Equal Remuneration Act., women are paid less than men and for both males and females, the rates that prevail are lower than the prescribed ones. Malik and Giri (1986) in their study compared the wage and output of female labour vis-à-vis male labour. They have found that wages paid to female labourers for different operations were lower as compared to male labourers. However, the wage difference paid to male and female workers for operations like paddy as transplantation to harvesting and threshing was very marginal, i.e., Rs. 12 per day taking a day of 8 hours, as against Rs. 13 per day for males. They opined that female labourers are paid in commensuration with their work efficiency. However, the percentage declined absorption of female labour due to the introduction of mechanical threshers was more pronounced than in case of male labour. Sharma (1989) conducted a study and examined the wage differential for women as agriculture labourers at Mathura District of Uttar Pradesh and based it upon the primary survey. Findings show that women as agricultural labour is discriminated on sex basis. The difference between male and female wage rate was Rs. 3.89 in agricultural operations and it varied from Rs. 2.84 to 4.83 across the entire district. Social prejudice, imperfection bottlenecks, lack of mobility and family compulsion are some of the important reasons responsible for wage discrimination. Rajesh and Kombairaju (2000) study of technological change in Dryland Agriculture of Tamil Nadu explained marked gender-based differentials in wages: during the lean season, male casual wages, at Rs.50, are twice that was paid to women. During peak seasons, daily wages are much higher, but the differential persists. Thus the prevailing wage rate during peak season was Rs.75 per day for men and Rs.40 per day for women. Several factors contribute to this disparity. Restrictions placed on the mobility of women outside the home environment limit their ability to travel in search of higher wages. Second, bearing a disproportionate burden of domestic chores also places restrictions on time available for paid work, and the ability to seek remunerative work. Furthermore, prevalent attitudes label women's earnings as merely secondary to

that of men. Haffis and Reddy (2000) surveyed 180 households of three villages in Andhra Pradesh: Toorpupalli village where extension efforts have successfully transmitted information about new dryland technologies and they termed it 'High awareness' village, Mangalithanda; a tribal village, where farmers were not exposed to new dryland crop production technologies was termed 'Low-awareness' village and Tandra village, where farmers had partial knowledge about the new dryland farming technologies through a source of extension education was termed as 'Partial-awareness' village. They analysed that gender disparities in wages are quite marked in all the sample villages, with female wages being 70 percent of male wage rates in Toorpupalli, and as little as 50 percent of male wages in the Mangalithanda. The wages differentials are highest in low-awareness village Mangalithanda and lowest in high-awareness village Toorpupalli. In fact, wage differential is negatively correlated with awareness levels. That wage differentials are lower in Toorpupalli is attributable both to the higher demand for female labour (especially during transplanting and harvesting) and also to the better awareness of women workers about the new dryland farming technologies as compared to other villages. Saikia's study (2000) in Jorhat district of Assam also analysed that wage differentials across the sample villages (Chakial, Baruagaon and Sensoah). She selected 138 households by applying stratified random sampling from the stratum marginal, small, medium and large farmers based on operational holding. She found that female wage rates were lower than those of males for similar type of work, in each stratum in sample villages. Casual wage rates vary from Rs.50 to Rs.60 per day for men and Rs.40 to Rs.45 for women. Piece rates were common for land preparation where male labour were engaged at Rs.150 – 180 per bigha; for transplanting, women were hired at Rs.120 per bigha. In each case, women were paid less than men. The wages paid to permanently hired labourers varied from Rs.500 per month in Chakial village to Rs.600 in Sensoah village alongwith a share of the crop, the quantum of which was based on agreements between the labourers and the farmers.

On the other hand Shiyani and Vekariya's (2000) study about women in groundnut and wheat production in South Saurashtra, Gujarat did not find any wage differences between men and women for a given operation, and especially during times of peak labour demand. They surveyed 60 groundnut growers of Una and Visavadar village under Junagadh district and 48 wheat growing talukas of districts

Junagadh and Amreli to arrive at their conclusion after analyzing cross tabulation of labour used in operations by gender and type.

However, Sarmah (2000) noted that the slowdown in the growth rate of female agricultural wages was much sharper than that in male agricultural wages through the mid – 1990s. Sundaram (2001) reported however that the rate of growth in male and female agricultural wages between 1993-94 and 1999-2000 was approximately in the same order of magnitude. Nevertheless, the fact of persistence of wage differentials – whatever the magnitude – cannot be disputed. That wage differentials across gender are endemic in the agricultural labour market all over India is a well-established fact.

Gender Discrimination and FWPR

Inequality between men and women is one of the most crucial disparities in many societies, and this is particularly so in India (Sen and Dreze, 1998). This is reflected not only in such matters as education and opportunity to develop talents, but also in the more elementary fields of nutrition, health and survival. To them the female-male ratio in India has steadily declined since the beginning of this century. In fact, there has been an almost monotonic decline from 1901 to 1991, when the female-male ratio in India reached its lowest-ever recorded value of 927 females per 1000 males. India's female-male ratio of 0.96 in the 0-29 age group suggests some considerable anti-female discrimination (ibid.).

The report of the South Commission (1990:128) also noted that women do not have the right to own land in some countries. They have less access than men to credit, and limited access to such productive resources as irrigation, water, fertilizer and technologies. It was also revealed that health services and educational facilities were not equally available to them. For these and other reasons women suffer disproportionately from poverty, illiteracy and malnutrition (ibid.).

Report submitted to Ministry of Education by National Committee on status of women in India (1974) says that despite the constitutional guarantee of women's equality, the status of Indian women is low. They suffer from severe under-employment, broken marriages, widowhood, desertion and abandonment. The environment they live in is that of hostility, thus making them helpless and insecure. The Committee understands that outdated religious, familial and cultural norms have influenced socio-economic life of India (ibid.).

The Human Development Report of 1995, also draws attention to the persistence of severe gender disparities in human development. The report constituted a gender-related development index (GDI) for 130 countries. Using GDI Shiva (1996) analysed that there are only 13 countries in the world that have a lower value of GDI than Bihar (GDI value of 0.306) and Uttar Pradesh (GDI value of 0.293) which indicates serious problem of human development that the country faces. Again, alongwith Rajasthan (GDI value of 0.312), these four states account for 365 million people, or close to 40 percent of the country's population. The GDI value of Assam is 0.347 as against 0.388 of all India level. Such low values of GDI reflect not only the achievements in human capabilities but also the serious problem of gender inequality in these states. Similarly, Singh (1989) and Malhi (1993) using GDI, analysed that a high level of income does not necessarily translate into better outcomes for women. Their studies proved that the low FMR in Haryana (865) is accompanied by high crude birth rates, low female literacy levels and very low work force participation rate than males. Mitra and Sinha (2005) tried to determine objectively an index of women empowerment and observed statewide disparities in women's overall empowerment in India. They have identified two distinct clusters of state. One cluster comprises such status as Kerala, Maharastra, Punjab, Karnatka, Himachal Pradesh, Tamilnadu, Gujarat, Andhra Pradesh, Haryana and the other cluster comprises the stages of Madhya Pradesh, Uttar.Pradesh, Rajasthan, Bihar, West Bengal, Assam and Orissa. The first cluster was identified as that one in which the overall women empowerment is relatively high and the overall empowerment is relatively low in the second cluster.

But, Reddy (1986) in his study on relative roles of men and women in directly productive tasks and household activities confining to two villages of Karnataka and Andhra Pradesh revealed that contribution of women in direct productive tasks is related with ownership of productive assets and caste. The lower the caste and lesser the ownership of productive assets, the larger is the contribution of women to the production activities, particularly in agriculture and dairy activities. Similarly, study showed that women belonging to higher society and agriculturist family have more leisure time than those from the poor of the society.

Swamy, Gathu, Narayan, Venkata and Murty (1989) in their study conducted in Andhra Pradesh to examine the socio-economic life of female agricultural labourers showed the prevalence of female child labourers in order to supplement the

family income. Study further revealed that female agricultural labourers irrespective of their caste or religion were at a disadvantage vis-à-vis their male counterparts in terms of relative wages in agricultural operations and thus subjected to a low economic status. The social status of female agriculturist revealed that most of them belonged to socially backward and economically disadvantaged groups like schedule castes and scheduled tribes. Most of them were illiterate and thus find it difficult to take part in development.

Joshi (1989) conducted a study to show that inspite of constitutional safeguard and other administrative measures, women continue to be the single largest exploited citizens of India. Illiteracy, lack of training facilities for self-employment and other general socio-economic millieu was found to be contributing factors for their problems. The study suggests opportunity for independent employment and income development of women.

Singharoy and Agarwal (1989), while examining the nature and extent of female labour employment found that 48 percent of the rural workforce is women and they are discriminated in rural employment, wages and other social status. Therefore, self employment has been suggested by the authors. Similarly, spread of literacy and technical know-how in rural areas is bound to attract more and more women to self employed project, and such a situation is bound to bring in a sense of pride and dignity in rural women.

Vaid (2004) highlights the causes for the inequality in educational transactions in India. Based on logistic regression analysis of National Education Study data of 1996, he found that class emerged as a strong determinant of the relative chance of a child continuing in school. The effect of other background characteristics like parental education, religion and region were found to be important determinants of the likelihood of an educational transition and religion had strong interactions with gender.

But Ghosh (2005) tried to explain that the expansion of basic education through the effective decentralized method of governance is not the end of enhancement of well being. The trajectory of empowerment parameter has multiple dimensions. It depends on the existence and functioning of other complimentary markets beyond the market of education.

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Panda (2005) explored one of the key issues in current research on gender and development: the links between poverty and young women's employment. This analysis provides strong evidence for a U-shaped relationship between women's employment status and class status. In other words, at both ends of the class spectrum, more proportion of women is in the paid labour force. In the middle class, a lesser proportion of women are employed for money. He argued that the higher levels of employment at the lower end of the class status may be need-based, while higher level of employment at the upper end of the class status may be resource-based.

Another study of Economic and Statistical Organisation (1989) on situational analysis of children and women in Haryana revealed that 43 percent of total child labour force belongs to other states like Uttar Pradesh and Bihar. The education, income and overall living conditions were by and large unsatisfactory. Women labourers working in agriculture enjoy very low socio-economic status as only 4.4 percent of selected women have conferred ownership of rights to property. Moreover, the average daily work load ranged from 10-12 hours and sometime did not even find time to spare for child care.

Chakravarty (1975) study conducted on women power in agriculture development in Haryana, showed that women in agriculture participate in most of the agricultural work. Therefore, their contribution to agriculture in terms of operation came between 50 – 60 percent of the total agriculture operations. He thus concluded that women in Haryana have contributed a lot but their socio-economic condition seemed to be miserable as most of them are either agricultural labourer households or small and marginal farmer households and who belong to schedule caste or backward caste with low level of literacy and income.

On the other hand, Kodath (2004) study in Kerala examined that due to male occupational mobility away from agriculture and out migration, women have to bear increasing responsibility over farming and family property. However, he pointed out that many women involved extensively in cultivation and other income activity linked to land confine to engage themselves as housewives. The process of social mobility has accentuated women's work burden but has also afforded greater leisure for some sections of women. The burden of women's home bound work in land is at the cost of paid employment.

Rajuladevi (2000) study on Tamilnadu examined the poverty profiles of landless female labour households to wet and dry villages with reference to income, household management and borrowings. Landless household's levels of living were measured according to poverty categories (destitutes, very very poor, very poor and poor) adopted by the government of India as per the Seventh Five Year Plan, 1985-90, within which she emphasized on gendered poverty. She attempted to disaggregate poverty within households and within and between wet and dry villages. Using a Marxist framework, the 'class' differences in poverty profiles between backward caste and Harijans female landless labours in wet and dry villages were also examined. She concluded that poverty and deprivation persisted in both wet and dry villages where landless labour households existed at the margins of the capitalist mode of production. The reasons for poverty were many but mainly decreasing real wages for agricultural labourers and employment.

Moreover, Pushpa Sunder (1981) study pointed out that female participation rate is highly correlated to poverty and landlessness in rural India. Given that man is the primary bread winner, women go out to work when their household incomes do not suffice for their basic needs. She however observed that in areas where income had gone up, consequent on the Green Revolution, women tended to withdraw from the labour market due to the improved income effect. Further, women do not learn new skills and techniques associated with the new agricultural technology because they are deemed to be primarily engaged in housework. Hence, there is a bias against their learning new methods. This also prevents work on the farm with changes in technology.

Sen and Sen (1985) examined two main hypotheses: First, dividing women's work into three types (i) Participation in the traditionally defined labour force, (ii) domestic work plus activities such as fuel collection, animal care etc. and (iii) domestic work alone. The authors expect to find that labour force participation will increase with poverty; on the other hand, the performance of domestic work, the share of those who do only domestic work will, itself be negatively correlated with poverty. Second, the importance of child-care and domestic work will determine which women (by age and marital status) within the household will do which type of work, but will not affect overall labour force participation. Family structure variables such as overall household size, the dependency ratio or the presence of nuclear versus joint families

are not, the authors believe, the dominant variables determining female labour-force participation in India.

Though technology change enhanced agricultural productivity, they also widened economic disparities and deep end gender discrimination in community life. The introduction of capital intensive technologies in the agricultural sector has differential impact on men and women and women have been adversely affected due to lack of access to technology (Boserup, 1970). She further stated (1983) that in the 1960s economic growth had contributed largely to marginalisation of women as workers in the developing countries.

In the same vein, Duvvury (1989) noted that the impact of technological changes and the process of capitalized agriculture have had unequivocally negative implications for women of agricultural labour and the marginal peasant households who constitute the poorest of the poor in the rural society.

The study conducted by Batra (1975) has a wider perspective. He shows that there is slow and non-progressive pattern of women employment without any relationship between employment and economic development pattern in both rural and urban areas. It also reveals that employment generation has been a by-product of the central growth theme and technological advancement is restricting the women employability. Further, their analysis brings the understanding that their unsure hold on modern employment appears to result from the chronic redundancy of labour in India and being confined largely to lack of skill and technical backwardness.

But Chand, Sidhu and Kaul (1985) in their study on impact of agricultural modernization on labour in Punjab with special reference to women labour, found that modernization of agriculture in Punjab has resulted in an increase in employment per hectares of cultivated area for all kinds of female labour. The study further shows that the wider application of new agricultural strategies has resulted in reducing the differences in the wage rate of men and women. The agricultural modernization has further increased the share of women in Punjab's agriculture.

Agarwal (1984) provided quantitative assessment of the impact of HYV seeds on the nature and extent of involvement in field-related work of women and men belonging to different classes of households in three principal rice-growing states, viz., Andhra Pradesh, Tamil Nadu and Orissa. She concluded that the adoption of HYV rice tends to increase the use of total labour time per sown hectare on the farms

in all three states. Most of this increase is accounted for by female and male casual labour time. She also commented that farm size tends to be related negatively to the per hectare use of total labour as well as to the per hectare use of family labour – female and male. It is positively associated with the per hectare use of hired labour, especially of male labour hired on a permanent basis. However, increased demand for female casual labour may not benefit the women of agricultural labour households as because there is no increase in daily real wages and there are intra-household inequalities in access to income and consumption items. But, the women of small cultivator households working longer hours in the fields, does not imply a compensatory improvement in their standard of living.

Agarwal (1984) further points out that, following the introduction of new technologies in agriculture, casualisation of work is increased for both men and women. But, it is more enhanced in the operations such as transplanting, weeding and harvesting where female labour is primarily employed.

Focusing on the impact of mechanization, Mencher and D' Amico (1986) argue that the increasing use of new technological device resulted in an inevitable decline in employment opportunities for women.

Another study among the agricultural labourers in six villages, two each from Kerala, Tamilnadu and West Bengal, found that, despite the problems of under employment, women's economic contribution to the household is more than half of the household income. Again, displacement of women took place without offering alternate employment opportunities, leading to pauperization and marginalisation of poor working families (Mencher and Saradamony, 1982). Saradamony (1982) in another study on changing agrarian relations and its impact on women in Palghat district in Kerala argued that despite the fact that socio-political changes which coincided with the agrarian struggles favoured legislation for the underprivileged sections in the society, the advantages of justice did not reach all, especially women.

Female Workforce Participation in Agriculture

The fact that women play an important role in agriculture no longer remains a moot point. A number of studies have quantified their contribution in different agricultural operations and household income. It has also been widely recognized that women play significant, if not dominant role in supplying all three ingredients of food

security i.e. ensuring food availability, promoting economic access to available food and to ensure nutritional security in developing countries (Quisumbing, 1996).

Purakayastha (1997) in his case study of Tinsukia district of Assam examined that the incidence of unemployment, poverty and indebtedness is extremely high among the members of the rural female labour force, marginal and small farmers. His study consisted of 350 sample households. Female participation rate was found lower among the households placed above the poverty line and also, in the villages located near towns. However, among the ST population, the female participation rate was found to be the highest both in the above and below the poverty line categories.

Deka (2004) conducted a study in Jorhat district of Upper Brahmaputra valley zone to explore the time utilization pattern of rural women. She studied 500 respondents from different land holding categories. It was found that independent participation was highest in harvesting (45%) followed by transplanting. Joint participation with male members dominated the participation pattern in almost all the agricultural activities besides harvesting and transplanting. In case of time utilization pattern, maximum time was spent in farm related activities which ranged from 4.46 hours during peak period and 3.59 hours during slack period which was followed by kitchen work in which they spent 2-3 hours daily.

It is also well known that the contribution of females is much more important. Bala (1992) study on Himachal Pradesh reflected that the able bodied males migrate from mountains regions of Himachal Pradesh to other places in search of jobs, leaving the major responsibilities of managing households and other affairs to the female members. He estimated that the share of female labour to the total labour input was around 53 percent for all agricultural operations and around 60 percent for livestock rearing.

Another study found significant contribution of female agricultural workers towards the total household income, which was crucial for the landless and small farms (Tuteja, 2000)

Palmer (1977) referred to some case studies in wheat growing areas of Haryana and conducted that women's direct contribution to agriculture was not less than 50 percent. But based on 1961 census, Mitra *et al* (1979) found that 12.1 million females were engaged in household and non-household industries other than cultivation.

Punia (1992) attempted to examine the extent of manual labour utilized in rice farming of Haryana. He analysed the percentage of men and women engaged in rice farming operations month-wise for 15 years (1965-1979) and presented it in tabular form. The data revealed that the percentage of women engaged in rice farming varied from 31 to 72. Further analysis on percentage of women engaged in rice farming month-wise indicated that it was around 40 percent in 23 months, 50 percent in 95 months, 60 percent in 34 months and around 70 percent in 28 months. He also explained that the rural women are engaged in various agricultural operations such as sowing nurseries, uprooting seedlings, transplanting line and bunch planting, intercultural operations like thinning, weeding, harvesting, threshing, winnowing, cleaning and packing. These women according to him acquire adequate skills by attending to similar jobs for several years.

In addition, the females, many a times, have to bear the responsibility of managing their households and agricultural affairs such as sowing, hoeing, harvesting, seed conservation/ selection and animal husbandry etc., due to death of spouse, divorce, separation and/or infirm and non-functioning of male member (Linagm, 1994).

Arun (1999) found on the basis of fieldwork in two panchayats of Kerala in 1996 that women's responsibilities over farming as well as their general work burden was heightened in households where men migrated to the Gulf. Almost 48 percent of women in Arun's sample were managing the family farm as their husbands either had paid employment, were migrants or were absent for other reasons. About 35 percent of women were involved in paid work and 7 percent were employed in the formal sector but also undertook some farm supervision (Arun, 1999).

Martha Chen (2000) in the field to research widowhood found that many women even in landless labour households in Kerala were not working, "not even raising poultry or livestock around the house". Among the reasons she identified were remittances from abroad and higher wages on account of trade union struggles. Nevertheless, Chen documented that many widows she met were aware and worried about the risks involved in relying on uncertain incomes and support from other and in not engaging in paid work.

Visaria (1976) observed that the never-married female work participation rate was more than currently married females but less frequent than widows and divorced females in urban Maharashtra. On the other hand, in rural Maharashtra, the never

married females have lower labour force participation rates than both currently married females as well as widowed and divorced females.

Gupta and Sharma (2005) conducted a study in Ghumarwin block of Bilaspur district in Himachal Pradesh to find out the differences in input use, crop productivities and factors affecting crop productivities/ income between Male Headed Households (MHH) and Female-Headed Households (FMM). The results have shown that both types of households used higher doze of seeds rates for maize and paddy whereas it was almost equal as per recommendations of CSK HPKV, Palampur. However, the variations within the households were found to be higher in case of MHH and the expenditure on seed in both types of households was significantly different from each other. Linear regression model was used to assess the factors affecting productivity (income) of different crops. It was found that the land was significant in all the crops. However the value of the regression coefficient was higher in case of MHH for maize and paddy whereas in case of wheat in was higher in FHH. Education and age of head of family were considered independent variables for farm as a whole and the former was found to be significant for FHH. Thus the study suggests that efforts should be made so that the farm operations can be performed well in time. This can be done with the use of farm machinery in the area. Further, the farm women, particularly the FHH, should be educated about the farm technology preferably through the female extension workers.

Macnay (1995) attempted to distinguish the comparative contributions of fertility decline and relative status of women in India and presents evidence that advancement in women's demographic attainment may not necessarily involve improvement in their health and status.

However, there is a great deal of specificity to labour use in agriculture – in terms of crop, gender and season. Brahmananda (1980) examined that the lean season employment being taken as 100, the ratio of peak season employment to lean season employment was 103.8 for rural males and 113.4 for rural females. Unni's study (2000) on India examined that there are large proportion of the female workforce in the rural areas and their participation fluctuates during drought and normal agricultural years. Women enter the labour market in the drought year and withdraw during the normal year (ibid.). Shiyani and Vekariya (2000) study of Gujarat's South Saurashtra Zone have shown that women played a greater role in the production of

groundnut than of wheat in the study area. Hand weeding and harvesting were the two major operations performed pre-dominantly by the women in cultivation of both crops. Women also played a role in many other farm activities including sowing, primary tillage (in groundnut but not wheat), application of manure and fertilizers, and irrigation, but were excluded from activities which required operation of machinery. Randhawa (1975) study on women worker in agriculture reveals that women do every kind of field work / labour except driving the plough or the cart and working on the well. Prasad and Singh (1989) on farm women observed that women are usually doing low-prestige, hazardous, arduous, monotonous, repetitive and dirty jobs. Such tedious and laborious jobs as transplanting, weeding, harvesting and processing are mostly done by women (ibid).

Saikia's (2000) study of Jorhat District of Assam examined that women are engaged in sowing, transplanting, irrigation, hand weeding, harvesting and post-harvest activities. In fact, women perform over 80 percent of the transplanting and harvesting activities. They do not however participate at all in the preparation of land, spraying of insecticides / pesticides, using tractor/power tiller, purchase of inputs etc. For the other operations, female labour accounts for between 10 and 30 percent of the labour used in the activity. This specificity appears to cut across all size classes of farms (ibid.). However, there is also mounting evidence to the contrary, that gender distinctions may well be getting blurred. For instance, it has been noted that for crops that were introduced into the cropping pattern relatively recently, and were perceived as 'cash' rather than 'food' crops, gender-based norms often do not apply. But Chopra (1994) notes that in potato cultivation in Punjab, the traditional allocation of labours between men and women does not hold, and women are involved in all operations – from sowing to harvesting.

Pandey (1967) studied the pattern of employment of hired labour in agriculture in Deorahi Block of Deoria district in Uttar Pradesh. Five villages and 45 farm families were randomly selected. The enquiry revealed that maximum hired farm labour was utilized inter-culture harvesting and sowing operations. On the whole, casual labour constituted 71.31 and permanent labour 28.69 per cent of the total farm hired labour utilized in all crops in all size groups. The hired labour utilizations showed a tendency to increase with the increase in farm size. More than 50 per cent of the total hired labour, both casual and attached, was employed by the farmers for

harvesting and inter-culture operations and 24 percent of the hired labour was used for pre-sowing cultivation and winnowing operations. Irrigation and manuring covered 11 percent of the total hired labour.

Mitra (1968) used farm management studies conducted in district of Amritsar and Ferozpur in Punjab from 1954-55 to 1955-57 and Punjab Statistics for 1963-64 to assess labour surplus in crop production. The magnitude was measured between number of man days used for various agricultural operations and the number actually required to maintain the existing profits. Regression analysis showed that the farm size, accounted for 96 percent of total variation in the number of man-days required per acre. It was estimated that 37.50 per cent of the total labour employed per acre in crop production was surplus. The report presented a comparison of the main findings of all the four agricultural Enquiry Committee beginning from 1950-51. It showed that during the period 1950-51 to 1964-65 wage employment in agriculture for male members of households increased from 189 days in 1950-51 to 217 days in 1964-65 and for female workers from 120 days to 149 days over the same period. But in subsequent decade upto 1974-75 farm employment registered a sharp drop from 217 days to 109 days for male and from 149 to 138 days for female labour.

Rooke (1970) observed in "Agriculture and Industry" that the plight of poor was made worse by the rise in population. In many parts of the country, there was surplus man-power at the very time when a growing army of landless men was seeking work as farm labourers.

Ghosh (1971) studied the problems of marginal farmers in West Bengal and found that more than 54% income of marginal farms was derived from the cultivation of land. The per capita income of marginal farmers was Rs. 360 only.

Rudra (1971) conducted a study of permanent farm servants and casual labourers employed on big farms in Punjab. 18% of big farmers did without any permanent servant. The percentage was 92% in Ropar and 30 per cent in Kapurthala.

Jhunjhunwala and Pherson (1972) analysed the impact of tractorisation on income distribution on the basis of the data collected by interviewing 81 farmers in Faizabad district of Eastern Uttar Pradesh in early 1972 and found out that the income distribution has become progressively unequal at higher level of tractorisation. It was

revealed that the landless labourers and small farmers gained slightly, while the medium farmers lost and tractorised farms gained substantially.

Dantwala (1972) used the National Sample Survey data of 25th round of 10 states for the period 1969 to June 1970 and the results of the study showed that incidence of employment among landless male labourers was highest in Tamil Nadu which was 14.5 per cent followed by Punjab 13.8 per cent and lowest in Orissa and Mysore, 1.1 and 1.4 per cent respectively. A large percentage of households (which was 55.63 per cent) of both small farmers and wage earners in six states out of ten reported that no member of the household was willing to take up regular full employment.

Grewal and Kahlon (1972), in a comprehensive study about "Impact of Mechanisation on Farm Employment in Punjab" pointed out that mechanization leads to reduction in farm employment. It came to 40.58, 39.74 and 35.74 man-days for all farm sizes, medium plus large and large bullock farms respectively compared to 31.49 man-days on tractorised holdings. Mechanization of such farms might cause some reduction in human labour employment in such operations as tillage, threshing and haulage, *etc.* But this loss is made up by higher labour use on mechanized farms resulting from increased cropping intensity and productivity per acre. It is only at advanced stage of technology advancement when all farm operations get mechanized, that substantial reduction in employment of human labour takes place.

Chawla (1974) examined effects of green revolution on volume of employment, wage earning and wage rate of agricultural labour in Amritsar district of Punjab at three points of time, *i.e.* 1966-67, 1970-71, 1973-74. He found out that wage earnings, wage rate and employment in agriculture labour increases with use of high yielding varieties. Annual earnings of farm labour were increased by 38 per cent during 1966-67 and 1973-74.

Sharma and Nandel (1974) studied the impact of green revolution on the socio-economic condition of the landless labour households in a village named Kurd near Haryana Agriculture University. The results indicated that the wages paid to male casual labourers increased relatively faster than the general average, a casual male labourer got employment for 258 days and 59% of them were below the average figure. The employment opportunities were found not only inadequate but also highly

seasonal. All the 50 sample households were found to be under debt. The study suggested that new technology, rural industries, rural work programmes for marginal farmers' and agricultural labourers' development agencies, programme of minimum needs, better working and housing conditions might help to extricate themselves from the existing shoddy socio-economic environment.

Mann and Sing (1977) studied on secondary data from the project "Cost of Cultivation of Principal Crops in Punjab State" and the primary data collected from 50 farmers (upto 4 hectares) and 30 agricultural labour families from three agro-climatic zones of Punjab for the year 1974-75. The study found that the number of employment days per agricultural labour were 339 days for share croppers, 335 days working on contract basis and 233 days for casual workers. On an average agricultural labourers were employed for 294 days.

Roy and Blasé (1978) studied the effect of farm tractorisation on output and human labour employment on Punjab farms in India. They concluded that the use of tractors was helpful in higher output and more employment. They believed that the threat from tractorisation was not all that great. The use of tractors was likely to be confined to certain areas only and there too any displacement of labour should be possible to control through appropriate public policies.

Minocha (1979) revealed that the employment opportunities for agricultural labour households have been actually declining. The estimated number of full days worked by men of agricultural households for wage employment in different agricultural operations declined from 208 in 1964-65 to 185 in 1974-75, that by women from 138 to 129 and that by children from 167 to 145. This decline in wage employment has been compensated by more self-employment.

Food and Agricultural Organisation (1981) in a study on productivity of small farmers and landless labourers proposed that their productivity needed to be increased and they should contribute a large share of increased output and the aim be undertaken to double the agricultural production in twenty years. The expansion of area under cultivation could count for 25 per cent. Cropping intensity for 15 per cent or higher yields or improved productivity for 60 per cent of the increased yield of agricultural production strategy for export and general prosperity. The element of high productivity provides hope to increase food production in future.

Azad (1985) conducted a study into the prospects of mixed farming and concluded that available labour for small and marginal land holders was only forty per cent and there was a wastage of huge manpower. The diversification of small and marginal farms from crop production to livestock enterprises augmented the farm income and new avenues of employment through that venture. The entrepreneurial skill of the marginal farmers has increased and as a consequence marginal productivity of labour has increased. The cost benefit ratio from milk production was equal to the crop production in large farms. Under the prevailing conditions, small and marginal farmers encouraged to adopt mixed farming, by proper incentives and subsidies.

Chattopadhyay (1985) concluded that the phenomenon of the growth of agricultural labour should not be treated as an indication of a process of proletarianisation of rural poor and those different factors were responsible in different regions in swelling the number of agricultural labour. The employment had been increasing particularly in 1960 and the under employment had been decreasing, indicating a significant increase in employment opportunities in the rural areas. The farmers would employ female hired labour only to supplement family labour was not tenable. Per capita income of permanent farm servant was higher than the male casual labour. The output per hectare and average productivity of labour was higher in owner operated farms and lower in tenant cultivated farms. Johal (1985) conducted a study on diversification of agriculture and concluded that net income of small, medium and large and big farmers increased to the extent of 93.25, 106.80, 66.13 and 108.23 percent in respective case, in the year 1984-85. The big landlords reported to earn larger increase in income due to higher amount of their capital.

Parihar and Sidhu (1986) carried out an economic analysis to determine the factors affecting labour employment in Punjab farms based on data collected from comprehensive scheme for studying cost of cultivation of principal crops in Punjab for the year 1975-76. Functional approach with two equation model viz., total labour employment equation and production equation was used to examine the factors affecting labour employment. It was argued by the authors that whereas on bullock operated farms, existing technology could be further exploited to increase labour employment, the state of technology of tractor operated farms that could bring about complementary labour employment with more production, needs to be generated.

Kumar (1988) observed in his work, "Planning Development and Poverty Alleviation" that the nation is alluring towards a new horizon of peace and prosperity. Indian economy still continues to be predominantly a rural economy. Nearly eighty per cent of populations are living in the villages. Agriculture accounts for 45 per cent of domestic product. In occupational structure, 70 per cent of people are directly dependent on agriculture. There are 5.7 lakh villages in the country. In the last three decades, the rural uplift has not received the attention. The three-fourth of village population consists of small and marginal farmers and small artisans. The top 10 per cent of population accounts for 51 per cent of rural assets. The balance of payment deficit since 1953, has grown upto 5500 crores. The poverty line has increased.

Sidhu and Grewal (1990) studied the factors affecting demand for human labour in Punjab agriculture. They found out that farm mechanization especially tractorisation did not replace human labour in Punjab agriculture. Whatever substitution took place due to tractorisation of farm operations was compensated by cropping intensity and shifts in cropping pattern by tractorisation.

Chatterjee (1991) points out that "in rural areas land is the prime productive asset which determines the income, employment status and authority of a person." This crucial asset in rural areas is found most unequally distributed among the households. There are a few households that have prodigious riches at their disposal, whilst others are most cruelly deprived. This situation leads to tenurial insecurity, unemployment and labour circulation.

Brithal and Sing (1995) conducted a study on consumption pattern and magnitude of poverty on low hill zone of the agrarian economy of Himachal Pradesh for the year 1994. They estimated the percentage of expenditure spent on cereals by different sizes of households. The percentage of total food expenditure spent on cereals was worked out to be 54.01, 48.40, 39.68 and 29.37 by marginal, small, medium and large farmers respectively. The percentage expenditure on pulses was found to increase with increase in the size of holding. The percentage expenditure on pulses was found to be increasing with increase in the size of holdings, while the percentage of expenditure on vegetable increased from 11.74 per cent on marginal holding to 12.73 per cent on small, to 14.28 per cent on medium and to 6.66 per cent on large holdings. The percentage of expenditure on milk worked out to be 11.88, 13.98, 16.87 and 18.57 on marginal, small, medium and large holding groups.

respectively. The percentage expenditure on oil and fats was estimated to be 11.97, 11.86, 12.98 and 10.43 per cent and expenditure on sugar and jaggery increased from 3.24 per cent to 3.85, 4.22 and 4.88 per cent on marginal, small, medium and large groups respectively. Health expenditure showed a decreasing tendency with an increase in size of holdings due to more nutritive food taken by the households under the large scale holding. Percentage of expenditure spent on non-food items was 27.26, 24.52, 24.63 and 19.28 per cent, on clothing and footwear was 26.28, 26.28, 26.74, 23.94 and 25.60 per cent, on education were 5.81, 7.79, 7.64 and 8.57 per cent by marginal, small, medium and large holdings respectively. The study revealed that poverty percentage on marginal holding group increased from 74 per cent to 85 per cent and on small holding group from 20 per cent to 34 per cent to 45 per cent. This concluded that percentage of poor decreases with increase in size of holdings.

Jeemol Unni (1997) concluded that the proportion of labour households with cultivable land also increased over the period. The very large increase in such households in 1987-88 however could be explained by the drought conditions prevailing in that year. Evidently, a large section of households with small and marginal land holdings were forced to enter the wage labour markets due to failure of the monsoons. The percentage of labour households with cultivated land in 1964-65 was 43.5 and that increased at 54.7 in 1987.

Time Use in Female Workforce Participation

In India, various studies have been conducted on FWPR from diverse angles. Some studies attempt to access labour force participation of women in terms of income earned or activity-wise, and few others in terms of time-use. Further, some of them are concentrated in farm sector alone, and some others are related to gender discrimination in terms of wages, opportunities and choice.

Women in rural India as well as in rural Assam are involved in a myriad of activities both in farm sector and off farm sector. Sisodia (1985) has examined the role of farm women in Chambal Command Area of Madhya Pradesh and notes that women participate in harvesting, threshing, weeding and other activities which together accord for 66.83 per cent of their total participation in the field. Women also participate in other supportive activities like animal based tasks, cake making, ghee

making, milking and feeding of animals, removing cow-dung, feeding of animals and poultry (Sisodia, 1985, Agrawal, 1988, Sethi 1989). Saikia's (2000) study in the Jorhat District of Assam is more elaborate. She examined that women contribute a significant share of the labour use in crop-production, but also spend a considerable amount of time in livestock, food processing, sericulture and weaving activities. The time commitments are in addition to the amount of time spent in household chores (ibid.). As against this, some studies examined the contribution of female labour force participation in terms of income. For example, Tuteja (2000), Misra and Rana (2000), Rana (2001) and Hubba Lal (2001) analysed that female workers in Haryana contributed significant amount of income. Mencher and Saradamoni (1982) in their study relating to six villages (two each in Kerala, TN and West Bengal) found that in households with no land, where both women and men were earners, the average of women's contribution to household earnings was more than the men's in five villages and equal to the men's in the sixth. Among marginal land owning households too, female earnings from outside work ranged from a little under half to well over half of the total household earnings from outside employment.

Regarding studies on the pattern of time-allocation by women and men, Jain and Chand (1982) observed that rural women work larger hours than men in Rajasthan and West Bengal. Another study (based in Karnataka) of Batliwala (1983) examined that women put in the same number of hours but expend more total energy in the tasks they do. Some studies that have examined women's work alone find that a 14-16 hour working day is common in certain areas even among pregnant women (Khan, 1983 for U.P.).

However, Jain (1996) asserted that the value of time use studies has special relevance in the situation where (a) a large share of activities in non-marketed and/or non-monetised; (b) the reward for labour does not reflect what it is ideally supposed to reflect, namely the value of that labour; wage rates/ remuneration being extremely irregularly fixed. But all women's work yields an output but all women's work does not provide and income. On the basis of a field study of the time use of individuals in rural households, she raises the question whether time itself may not be a more appropriate measure for evaluating work, especially in the context of assetless women workers. For an assetless worker, it is her time more than her wage that measures her labour. Time as a measure of value would reverse the values of men and women's

work – women would always come on ‘top’ as they spend more hours working than men as shown through the time use studies.

Globalisation and FWPR

On the issue of economic globalization, Mitra (2004) observed that globalisation is an important backdrop to rights advocacy, particularly for women in developing countries, where the impacts of trade and competition are felt so powerfully. Further, as developing countries respond to the pressures of competition, the hardest social and economic impacts of dislocation are felt by vulnerable groups including women. According to Eapen (1994), the accelerated shift towards cash crops associated with the commercialization process in the agricultural sector resulted in reduced employment opportunities for women. Unni (1999) and Visaria (1999) observed that the recent trends in women’s employment participation both in the NSS and census data shows a marginal increase, compared to previous decades, while the important feature of this trend is the increasing casualisation and informalisation of women’s work. Unni’s Study (2001) on labour market in South Asia further examined that there was less gender difference in the proportion of regular workers as compared to casual workers. The proportion of regular women workers doubled during 1977-78 to 1993-94, while there was not much of an increase in male regular workers. The large increase in female casual workers compared to regular workers indicates an increasing informalization of the workforce (ibid.). She provides evidence of the growing informalization of the labour force including women’s employment in South Asian Countries, viz., India, Pakistan and Nepal. Two broad components of the informal economy, i.e., non-wage and wage employment are distinguished. The share of the first components has been rising in the last two decades. Within non-wage employment, certain invisible groups of workers, such as home based workers and street vendors are vulnerable to changes in the global and local economy. The increasing casualisation of the workforce is evidence of an increase in the second broad component. Within wage employment, home-workers or out-workers and informal workers in the formal enterprises are vulnerable. The low quality of employment available to women in the formal economy is brought out by her evidence on the wages and incomes received and differentials in earnings. She also examined that the proportion of female non-wage workers rose slightly from 15.7 to

17.5 percent in the 1980's but jumped sharply to 50 percent in 1993-94. Standing (1998) argued that the growing flexibility in the labour market or increasing informalisation, had led to feminisation of the labour force. Sundaram (2001) also observed that in the 1990s (between 1993/94 and 1999/2000) the number of days worked by usual status women workers increased from 241 to 246 days in the year in all activities – agricultural and non-agricultural.

Bhowmik's (2005) study analysed that liberalisation creates winners or losers among women even if there is a net gain in women's employment compared to men. He further explained that employment losses in India were found to be largely in the informal sector, while the gain was concentrated among skilled workers.

Rajesh and Kombairaju (2000) focus on marginal lands in Tamil Nadu and find that technology adoption in agriculture is associated with higher labour demand, especially for women workers; however technology adoption is also negatively correlated with women's family labour participation. Thus the new technological practices have meant greater demand only for hired female labour. Contrary to this Saikia's study (2000) on Assam did not find any change. She examined that in 1980-81, females were engaged mainly in transplanting, harvesting and post harvest operations. Out of total 91 annual working days, 34 days were spent in harvesting, 28 days in transplanting and 20 days in post-harvest operations. Broadly speaking, these relative shares were obtained in 1994-95 as well. This is in contrast to the experience elsewhere in India, as noted earlier.

Relating to off farm sector, especially handloom and weaving, Mahanta and Sonowal (1996) examined that the globalisation of Indian economy through its agenda of reforms, has adversely affected the handloom weaving industry of the small scale sector. It has marginalized the independent and dependent weavers and made their conditions appalling. The worst-hit in this category are the women weavers. Baishys's (2005) study on the silk industry of Assam with special reference to Siualkuchi Village under Kamrup district revealed that the Sualkuchi Silk Handloom cluster is thriving and expanding on account of consumerism of silk traditional products. However, free import of silk product has threatened its future expansion. Rahman (2004) study pointed out that the recent threat to the muga industry of Assam is mixing of low cost Chinese tasar yarn and selling of the same as muga fabric. Swamy's study (2005) on Khadi and Village industries in India reveals that this sector

have shown a declining trend in terms of growth of output, employment, sales and earnings during the post reforms period compared to the pre-reforms period. Further, khadi and village industries are expected to be labour intensive in nature but they have not experienced any size effect of output on employment since the contribution of output to the growth of employment has declined during the post reforms period when compared to that of during the pre-reform periods.

As regards the wages, there are evidences to show that, the increase in real wages of the 1980s was not sustained in the 1990s either in agriculture or non-agricultural sectors for both men and women (Unni, 1999). After the 1987-88, rise in female wages relative to male wages also ceased and the stagnation in the agricultural sector was unfavourable to the conditions of employment of women (ibid). According to Vaidyanathan (1994) the adoption of green revolution technologies did not enhance the employment opportunities in the same proportion as the output, though the dependence on wage labour was increased.

Moreover, Chattopadhyay and Ghosal (2004) tried to examine the nature of the changes in the degree of inequalities in consumption expenditure across the states in rural India during the period of globalisation as compared with that in the pre-globalisation period. They also tried to investigate the nature of rural poverty across the states and relate the behaviour of terms of trade between agricultural sector and non-agricultural sector with the behaviour of Net State Domestic Product originating from agriculture (NSDPA) at the inter-state level. They analysed that the degree of inequalities in the distribution of rural consumption expenditure has declined both at the national and state levels. However, the relative positions of the states have undergone a remarkable change during the two decades of their study. They also found that although the percentage of people lying below the poverty line has declined, the relative deprivation of population below the poverty line has substantially increased in some states. However, Dhanasekaran's (2005) empirical study on rural poverty in the era of economic liberalization in India suggests that the poverty has declined in 1990s as compared to 1980s. The rate of decline in rural poverty was faster during the 1990s than in the 1980s, when economy was on a lower growth path as compared to that of the earlier years. A faster decline of rural poverty during the 1990s, can be attributed to higher growth rates of employment in non-agricultural sectors and in real wages. Parikh and Radhakrishna (2002) also viewed

that accelerated reforms and deregulation and liberalization of the 1990s have not adversely affected the trend of decline in poverty. But another group of researchers like Mundle (1992), Bhattacharya and Mitra (1993) and Sen (1996) said that the changes in the macro-economic policies especially the stabilization programmes, reduce employment opportunities and lead to an increase in poverty. While analyzing the nature and trends of employment under the changing policy regime, studies have also suggested a higher labour absorption by the unorganized segment of the economy (Papola, 1994, Despande and Despande, 1998).

Usually, in developing countries, unskilled female labourers dominate the consumption goods branch of the non-trade sector. Therefore, the unemployment generated in this sector will affect female labourers disproportionately. Because of the entry of organized sector employees, competition in the unorganized sector will increase and the chances of getting a job for a woman will be weaker, simply because she is less advantaged in a competitive labour market (Deepita, 1999). Unequal initial conditions such as differential access to education, to information and to credit prevent women from taking advantage of new opportunities (Collier, 1994). Again, from other developing countries experiences, it may be expected that the retrenched female labourers may get employment in the newly emerging sectors of exportables, but only at a lower wage rate (Standing, 1989). Relatively greater casualisation of female labourers in recent years, as reported in Kundu (1997) may be an indirect proof in this process. The study of Deepita (1999) analysed a labour force reallocation from the organized to the unorganized sector due to trade liberalization in India. Within the unorganized sector, her findings give hint of a reverse shift of labour force from non-agriculture to agriculture with the decrease in the social sector expenditure by the government in the recent past (Deepita, 1999).

Singh (2005), on the other hand analysed on the basis of NSS data that the process of feminisation of the rural workforce in the post reform period was not clear. The reason for decline in WPR can partly be attributed to increased school enrollment of rural young girls. Still the decline of WPR of 15-19 age group should be regarded as a negative trend in the post-reform period. However, women WPR by current statuses have gone up during this period, indicating an increase of seasonal or casual work for women. The positive feature of the post-reform period is that unemployment rates by all measures have gone down sharply for women as compared to men in rural India. It

was also observed that the trend towards diversification of the rural workforce has been slow both for male and female workers during the post reform period. Specially, occupational diversification of women has remained stagnant, indicating that the option of diversification in non-agricultural employment is very limited for women. As regards the changes in employment status are concerned, the most striking feature of post reform period is increasing casualisation of rural work force, both for males and females. This process of casualisation was more severe in case of female workers. Average daily earnings of female workers continue to be less than that of male workers. The male-female wage differentials have also not improved during the post reform period in agricultural sector, though it has reduced somewhat in non-agricultural occupations and rural public works. Overall, the study revealed that the overall quality of employment of rural women is not relatively much lower than that of rural men but also it has not improved over time.

However, in India, reforms have contributed to the enlargement of unorganized, informal sector. In the post-reforms period most of the employment is generated in the unorganized sector with formal work relations (Islam, 1994; R. Radhakrishna, 1998, Deshpande and Deshpande, 1996).

Some of the employment avenues which have increased in the informal sector in the post reform period are – casual works, daily wage work and contract work, etc. Ghose (1998) observed the nature of this employment as ‘distressed employment’.

The employment conditions in unorganized sector moved towards uncertainties, low wage, under employment and low income syndrome (Vanamala, 2001). Apart from these insecurities, the workers are also heterogeneous and dispersed widely (ibid). Hence the unionization is rendered difficult. As a result, labour unions of these workers have not emerged.

This has had a significant but a negative impact on informal workers in general and female workers in particular as 94 percent of the female labour force is working in informal sector (Islam, 1996). This labour force is excluded from the benefits of employment available in the formal sector (ibid.).

Vanamala (2001) on the basis of a case study of a large-scale engineering industry analysed the wages which have hit female workers hard in the post reform period in India.

Commenting on the nature of women's employment in the informal sector in Kerala, Eapen (2001) examined that most of women work as casual labourers in agriculture, construction, brick-making, coir or as own account workers in handloom weaving, basket weaving and vending fish/ vegetables. Some of the newer activities are floriculture, poultry and livestock rearing, garment-making, food processing and fish processing, as can be inferred from changes in the pattern of employment (Eapen, 1994). The most demeaning aspect of working in the informal sector is the open and at times subtle sex discrimination in wages (Eapen, 2000). While both women and men are paid either at piece-rate or on a daily basis in certain segments such as coir and brick making women are relegated to the more low-paid jobs (ibid). In construction, even for the same unskilled work, women are paid less (ibid).

1.08. Research Hypothesis

Keeping in view the issues identified in the review of literature the following hypothesis may be tested on the basis of investigation to be carried out to justify the hypothesis:

- H1 : A substantial proportion of female work force in rural areas are concentrated in agriculture and allied activities either in the form of cultivators or agricultural labourers.
- H2 : Female cultivators and agricultural labourers spend a significant labour time in rural household work and there is no significant difference in labour time use by the two section of farm workers.
- H3 : Economic position in terms of income and consumption expenditure of female cultivators and agricultural labourers are merely same.
- H4 : Economic conditions of female cultivators and agricultural labourers in terms of some selected human development indicators are also same.

1.09. Methodology

The study is based on both primary and secondary data. Primary data has been collected on the basis of questionnaires prepared as per requirement.

Sampling frame and procedure

Three types of sampling have been used viz., the stratified, the purposive and the random sampling. The technical design of the study is three-stage stratified random sampling with the block as the first stage of the sampling unit, villages as the second stage of the sampling unit and household of female cultivators and agricultural labourers as the third and ultimate stage of the sampling unit.

Barpeta district of Assam has two sub-divisions, namely, Bajali and Barpeta. Thus, in the first stage we have selected purposively two blocks from each of the two sub-divisions out of total blocks of the district. Hence we get total four blocks. The blocks have been selected on the basis of high female work participation rates.

In the second stage, two villages in each of the blocks have been selected purposively based upon the same criterion i.e., high female work participation rates. All the selected villages have been divided into three groups depending upon female work participation rate.

In the third stage, we first collected a list of female cultivators and agricultural labourers of selected villages (or groups) from concerned Block Development Office. Then, 20 percent sample is selected at random from each group of female cultivators and agricultural labourers.

An open ended schedule was prepared to collect relevant information on the basis of the personal interview method. However, primary data on income, consumption, value of assets and liabilities have been collected during last two weeks prior to the date of interview.

Secondary Sources

Secondary data have been collected from various published and unpublished sources. The main published sources are the Census of India and Assam, the Statistical Handbook of Assam, Basic Statistics of NER, the Economic Survey of Assam, the Human Development Report, DLHFS Report, NFHS and various books, journals and bulletins. The unpublished secondary data were collected from Government Offices of Assam especially the Directorate of Handloom and Weaving and Block Development Office.

The secondary data that were collected from various published and unpublished sources on socio-economic and demographic attributes to the status of women as well as nature of economic activities of rural women in Assam. The collected data were analysed by dividing Assam into three geographical regions – Lower Assam, Central Assam and Upper Assam to examine the variations of different attributes as noted above. Lower Assam covered eight districts of Assam namely Dhubri, Kokrajhar, Bongaigaon, Goalpara, Barpeta, Nalbari, Kamrup and Darrang. The Central Assam region covered five districts namely Sonitpur, Lakhimpur, Dhemaji, Morigaon and Nagaon. The Upper Assam region covered the remaining districts namely Golaghat, Jorhat, Sibsagar, Dibrugarh and Tinsukia. The two hill districts Karbi Anglong and NC Hills (Now Dima Hasao) as well as the districts under Barak Valley namely Karimganj, Hailakandi and Cachar were included within Upper Assam region for simplification. Moreover, newly created districts like Baska, Chirang, Udalguri and Kamrup (rural) were not shown separately due to lack of data. They were included within Lower Assam.

1.10. Data Processing:

Statistical Analysis:

The averages and percentages were used to study the variation in their income, consumption, assets, liabilities, housing conditions etc. These averages and percentages were calculated among the various groups. In this analysis the average value was used for all the groups and was taken to draw the comparable results. The per capita value of income and consumption, assets and liabilities were taken to make the measures more meaningful.

Measure of Inequality in Income and Consumption: The variation in income and consumption of the female agricultural labourers and cultivators in the different groups are calculated with the following methods:

- (i) ANOVA Technique (one-way classification model)
- (ii) Co-efficient of variation.
- (iii) Z- test
- (iv) Composite Z-test.

ANOVA Technique: To study differences of Income and Consumption and labour time use among various groups, the analysis of variance, generally abbreviated as ANOVA is used. The specimen of ANOVA Table is given below.

Table 1.01
Specimen of ANOVA Table

Analysis of variance (ANOVA) : One-way classification Model				
Sources of Variation	SS (Sum of squares)	V (Degree of freedom)	M\$ (Mean square)	Variable Ratio or F
Between Samples	SSC	$V_1=C-1$	$MSC=SSC/C-1$	
Within Samples	SSE	$V_2=n-c$	$MSE=SSE/n-c$	MSC/MSE
Total	SST	$n-1$		

SST= Total sum of squares of variations

SSC= Sum of squares between samples (columns)

SSE= Sum of squares within samples (rows)

MSC=Mean square between samples

MSE=Mean square within samples

Co-efficient of Variation: Co-efficient of variation is derived by the following formula:

$$C.V. = \frac{\sigma}{\bar{X}} \times 100$$

Where C.V. = Co-efficient of Variation

σ = Standard deviation, and

\bar{X} = Mean

Z-test: To study differences of income and consumption and labour time use within the groups z-test has been used.

The test statistic is:

$$z = \frac{\bar{x}_1 - \bar{x}_2}{SE(\bar{x}_1 - \bar{x}_2)}$$

$$\text{Where } SE(\bar{X} - \bar{X}) = \sqrt{\frac{\sigma_1^2 + \sigma_2^2}{n_1 + n_2}}$$

Composite Z-test: To study physical well-being of females in Assam and to study economic well-being of female cultivators and agricultural labourers composite, Z-test has been used.

The composite Z-test is:

$$Z = \sum_{i=1}^n \left(\frac{\bar{X}_i - \mu_i}{\sigma_i} \right)$$

$$\text{Or } z = \left(\frac{\bar{x}_1 - \mu_1}{\sigma_1} \right) + \left(\frac{\bar{x}_2 - \mu_2}{\sigma_2} \right) + \dots + \left(\frac{\bar{x}_n - \mu_n}{\sigma_n} \right)$$

1.11. Limitations of the Study

The present study is limited to only some selected villages of Barpeta District. Again, this study will examine the economic activities of female cultivators and agricultural labourers. Hence, the study will be able to represent only a partial picture of the women labour force participation during post 1990s.

Further a general under-enumeration of women's involvement in gainful activity can also occur due to overall fuzziness which surrounds the demarcation of 'domestic' from productive work and joint participation of females with males. However, modest attempt will be made to understand the subject from different angles and to minimize such limitation.

1.12. Chapterisation

The proposed study consists of the following chapters:

Chapter I: Introduction

This chapter will introduce the problem. In addition to the statement of the problem it will also deal with the significance of the study, objectives of the study, research hypothesis, a profile of study area and methodology, review of literature and limitations of the study.

Chapter II: Socio-Economic Background of Rural Women in Assam.

Age structure, sex structure, labour force participation rate, health status, educational status, supply of safe drinking water and other human development indicators of rural women in Assam as well as Barpeta district has been discussed in this chapter, based on secondary sources. The data on various socio-economic and demographic attributes were divided into three geographic regions of Assam – The Lower Assam, Central Assam and Upper Assam and then variations of such attributes were examined in comparison to average figure of Assam and India in general and Barpeta District in particular.

Chapter III: Nature of Economic Activities of Rural Women in Assam

Nature of various economic activities performed by rural women in Assam as well as Barpeta district will be discussed in this chapter, based on secondary information. Special attention has also been given on employment and unemployment of female labour, their wages and the process of casualisation of female labour market during the period of economic globalization.

Chapter IV: Role of Rural Women in Agriculture and Allied Activities: Case Study of Barpeta District of Assam:

This chapter will be based on field survey in the area under study. Here, role of female cultivators and agricultural labourers in agriculture and allied activities in terms of labour hours will be examined. We will also examine the economic role played by rural women according to agricultural operations. Further, we examine the contribution of female cultivators and agricultural labourers in terms of labour hours in live stock and poultry related activities, sericultural activities, handloom and weaving activities and food processing. We also examine the variations of labour time use of female cultivators and agricultural labourers in agricultural and other activities based on statistical measure.

Chapter V: Composition of Income and Consumption Expenditure of Households in Barpeta District:

Income from different sources like income from permanent/family labour, casual labour, crop sharing, income from dairying, poultry, sale of manure, salaries, pensions, interest on deposits and miscellaneous sources of income for the female

cultivators and agricultural labourers, have been delineated in this chapter. Further, consumption expenditure on various items and the quantity and value of expenditure for both female cultivators and agricultural labourers has also been discussed in this chapter. Statistical method has been applied as per necessity.

Chapter VI: Economic Status of Female Cultivators and Agricultural Labourers in Barpeta District:

Economic condition of female cultivators and agricultural labourers in terms of employment and earnings, assets and liabilities, housing conditions, availability of safe drinking water and health care services have been discussed in this chapter. Statistical measure has been applied as per necessity.

Chapter VII: Summary and Conclusions:

This chapter will deal with summary of our findings. It will also provide suggestions for policy measure for socio-economic uplift of the female cultivators and agricultural labourers.

CHAPTER – II

SOCIO- ECONOMIC STATUS OF RURAL WOMEN IN ASSAM

The status of women is a relative and multidimensional concept. It has legal, socio-economic and attitudinal dimensions. The socio-economic status of women generally refers to the life-style that a woman is entitled to lead within the family or society. The position of women in the society is based on the relative powers the women enjoy in comparison to the men's in a given society (Nadel, 1969: 36). Conventionally in a patriarchal society the status of women is guided by the enactment of various functions through traditions, customs, religion and culture. Status includes a woman and the society's perception of the role vis-a-vis man's (White, 1947). Thus, the position of women in the society is based on the relative powers that a woman enjoys in comparison to a man in a given society. The concept refers to the rights and privileges of a woman and the role assigned to her purely on the basis of gender. The rights and privileges of a woman in a given society are commonly measured by the socio-economic factors, freedom of choices, access to education, and employment opportunities, parent's educational aspirations for girl child, women's freedom of movement and access to money she can spend as she wishes. Besides these socio-economic attributes to the status of women, there are some other demographic attributes, which are also commonly used to measure the status of women.

Demographic attributes such as birth rate, death rate, infant mortality rate, life expectancy at birth, age composition, sex composition, age at marriage etc. indicate both the physical quality of human population and the level of socio-economic development of any region. These attributes are equally important to understand the physical well-being of women population of the region. An understanding of the demographic profile of women in the region is thus an essential precondition towards addressing the issues of women and development linkage (Duza, 1989), because these demographic attributes, though often remain invisible, have profound influence upon the health and socio-economic condition of women. However, the degree of influence may vary depending upon the factors associated with the attributes. In view of this, an attempt is made to examine the demographic characteristics of women population of Assam in terms of age and sex composition, fertility and mortality pattern, infant

mortality, life expectancy, marital status and age at marriage, labour force participation, and educational status. These attributes would certainly provide some insight into the physical well-being of women population in the state.

2.01 SEX RATIO

The study of sex ratio (number of females per thousand males, as defined by the Census of India) is vital in population study in a number of ways. Sex ratio is a function of three basic factors: sex ratio at birth, sex ratio at death and sex selective migration. It is an index of the socio-economic conditions of the population in an area. As a matter of fact, sex ratio has a profound impact on the demographic structure of any region including the growth of population, marriage, working force and employment pattern. Moreover, an imbalance in sex ratio may lead to the emergence of many social and moral evils. In addition, differentials in sex ratios are linked to variations in well-being and are vitally related to biological and social reproduction and also economic production (Momsen and Townsend, 1987). It is in this background that an analysis of the pattern of sex ratio in Assam in the light of national average is made to understand the status of women population in the region.

TABLE – 2.01
PERCENTAGE OF FEMALE POPULATION AND SEX RATIO

Year	Percentage of female population in total		Females per 1000 males	
	Assam	India	Assam	India
1951	46.45	48.48	877	946
1961	46.49	48.52	876	941
1971	47.25	48.17	899	930
1981	N/A	48.27	N/A	933
1991	47.98	48.25	923	927
2001	48.31	48.26	932	933
2011	48.81	48.56	954	940

Source: Census of India, Assam 1951, 1961, 1971, 1981, 1991 and 2001.

Provisional census report of India and Assam, 2011

The data pertaining to the trend in sex ratio (Table 2.01) in Assam during 1951-2001 reveal that it has always been lower than the national average. The prevalence of higher rate of mortality among females than that of males and the immigration of males in excess of females from outside the state may be the reasons behind shortage of females throughout the period 1951-2001. However, the sex ratio in Assam increased by about 3 percent as against negative growth at national level which was about -0.6 percent during 1951-2001. It is further satisfactory to note that the sex ratio of Assam is considerably higher than all India average in 2011. The shortage of females per one thousand male was only 46 in Assam as against 60 at national level in 2011. Ban on sex determination test at prenatal stage and rising trend of female literacy rate may be the reason for such satisfactory development.

Region wise, sex ratio of Assam are quite uneven. It is depicted in Table 2.02.

TABLE: 2.02
Region wise average sex ratio of Assam

Region	1991 (Female per 1000 male)	2001 (Female per 1000 male)	2011 (Female per 1000 male)
Lower Assam	930	940	957
Central Assam	928	936	956
Upper Assam	911	921	949
Assam	923	932	954
Barpeta District	939	941	958

Source: Statistical Hand Book, Assam, 2002 and 2004

Provisional census report of India and Assam, 2011

The sex ratio varies from as low as 949 in the Upper Assam to as high as 957 in the districts of Lower Assam in 2011. Lower Assam witnessed higher sex ratio than Central and Upper Assam. In fact, sex ratio of Lower and Central Assam are higher than average sex ratio of Assam during 1991-2011. Similarly, sex ratio of Barpeta District is also higher than average sex ratio of Assam during this period. Again, similar reasons like ban on sex determination test at prenatal stage and upward movement of female literacy rate may have contributed to such higher sex ratio in Central Assam and Lower Assam including Barpeta District. But, the sex ratio of Upper Assam has been lower than average sex ratio of Assam during the period 1991-2011. Prevalence of large number of tea gardens and low socio-economic status of females among the tea garden labourers may be the reason for such lower sex ratio in Upper Assam than that of Lower Assam, Central Assam and Assam as a whole.

The picture of sex ratio in the state becomes clearer when it is treated at the different age group level.

TABLE: 2.03
Age specific sex ratio of females in Assam

State/ Country	Age Group	1991	2001	2011
Assam	0 – 14	968	969	N/A
	15 – 59	912	920	N/A
	60 +	810	816	N/A
India	0 – 14	940	942	N/A
	15 – 59	995	898	N/A
	60 +	958	965	N/A

Source: Social and Cultural Tables, Series 1, India,
Census of India, 1991 & 2001

According to 2001 census, the sex ratio of females in the younger age group 0-14 is higher in Assam by about 1 percent in comparison to national average. This is indicative of higher percentage of birth rate and larger proportion of children in Assam causing a large number of dependent consumers. This means that the burden of dependence on the population is excessive in Assam in comparison to national level. It is however satisfactory to note that the working population (15-59 yrs) in Assam increased by about 0.4 percent during 1991-2001 as against substantial fall at national level by about 5 percent during this period. But the sex ratio of females in the older age group (60+) is considerably lower in Assam than national level both in 1991 and 2001. It was about 8 percent less in Assam than national level in both 1991 and 2001. Low sex ratio in age group 60+ in Assam is indicative of low life expectancy of the females.

2.02 AGE COMPOSITION

The age structure of population is considered as one of the basic demographic characteristics of population. Its study is important in a number of ways. Being basically determined by fertility, mortality and migration, the age structure of any population influences the growth of population, employment pattern, age at marriage and education in any region. The areas with high fertility rates constitute a large proportion of economically dependent population in the young age group 0-14. Such a situation may have a far-reaching impact on the population structure including high natural growth of population, high dependency ratio, increase of unemployment, lower age at marriage and lack of proper education. The impact of all these is likely to be even more pronounced upon the physical quality of life and socio-economic status of women population, and it may be more so in the developing countries. With these views, an attempt is made to analyse the age composition of population in Assam broadly in terms of age groups 0-14, 15-59, and 60+ as depicted in Table 2.04.

TABLE: 2.04
AGE COMPOSITION OF POPULATION IN ASSAM AND INDIA
(in percent)

State/ Country	Age Group	1991	2001	2007-08 (As per DLHFS)	2009 (est)
Assam	0 – 14	40.22	37.85	31.9	--
	15 – 59	54.23	56.15	60.9	--
	60 +	5.55	5.89	7.3	--
India	0 – 14	37.25	36.65	--	31.1
	15 – 59	55.67	56.20	--	63.6
	60 +	7.08	8.15	--	5.3

Source: a) Census of India, Series 1, India, Social and Cultural Tables, 1991 and 2001

b) District level Household and Facility Survey, Assam, 2007-08

c) 2009 (est) figures of India has been collected from Demographics of India – wikipedia, the Free Encyclopedia

It has been observed from Table 2.04 that the percentage of population in the age group 0-14 is higher in Assam as compared to national average in 1991 indicating high dependency ratio and fertility rate in Assam. However, with gradual improvement in the physical quality of life over the years in Assam, as elsewhere in the country resulting the fall in birth rate, death rate and infant mortality rate, the percentage of population in the young age group (0-14) has fallen significantly by about three percent in 2001 and eight percent in 2007-08 as against less than one percent at the national level in 2001 and eight percent in 2009. But, the percentage of population in the older age group 60+ has increased in Assam during the period 1991 to 2007-08 indicating gradual improvement in the physical quality of life. But the rate of increase was slow by about three percent during 1991-2001 and jumped to around ten percent during the period 2001 to 2007-08 as against around seven percent at national level during 1991-2001 and negative rate of increase during 2001-09 which was around 21 percent. However, the percentage of working population in the age group 15-59 has been lower in Assam than national average during 1991-2009. It was only one percent less than national level in 1991 which increased to around three percent during the period 2007-08 to 2009 indicating high dependency ratio in Assam than at national level.

2.03 Region wise average age composition of population in Assam

TABLE: 2.05

Region wise average age composition of population in Assam (in %)

Region	Age Group	1991	2001	2007-08
Lower Assam	0 – 14	41.48	36.72	32.8
	15 – 59	53.02	57.95	61.7
	60 +	5.48	5.33	7.1
Central Assam	0 – 14	42.10	37.62	32.5
	15 – 59	52.09	57.81	61.9
	60 +	5.72	5.25	7.4
Upper Assam	0 – 14	38.84	35.90	30.4
	15 – 59	55.44	59.11	59.2
	60 +	5.64	4.99	6.9
Assam	0 – 14	40.22	37.85	31.9
	15 – 59	54.23	56.15	60.9
	60 +	5.55	5.19	7.3
Barpeta District	0 – 14	42.23	37.87	32.2
	15 – 59	51.59	56.60	61.3
	60 +	6.17	5.83	6.7

Source: a) Census of India, Series 1, India, Social and Cultural Tables, 1991 and 2001

b) District level Household and Facility Survey, Assam, 2007-08

c) 2009 (est) figures of India has been collected from Demographics of India – wikipedia, the Free Encyclopedia

Table 2.05 reveals that the percentage of younger population (0-14) is higher in Barpeta District during the period 1991 to 2007-08 than the average figure of Assam during the same period indicating high dependency ratio and fertility rate in the district. However, the percentage of population in the age group 0-14 decreased in Barpeta District during the period 1991 to 2007-08. Moreover, the rate of decrease in Barpeta District was higher than Assam as a whole. The percentage of population in the age group 0-14 decreased in Barpeta District at the rate of 13 percent from 1991 to 2007-08 which was only 11 percent in Assam. Improvement in literacy rate and fall in the incidence of poverty are possibly the reasons for comparatively faster decrease in

population in the age group 0-14 in Barpeta District than Assam. Among the three regions of Assam, although the percentage of population in the age group 0-14 is the lowest in Upper Assam in 2007-08 and highest in Lower Assam, yet the percentage of population in the age group 0-14 have decreased during the period 1991 to 2007-08. But the rate of decrease is uneven. The rate of decrease is highest in Central Assam which is around 13 percent and it is about 12 percent in Upper Assam and Lower Assam indicating uneven development of educational attainment and success of poverty alleviation measures as poverty and illiteracy are directly related to fertility rate.

But the percentage of population in the older age group 60+ has increased in Barpeta District and Assam during the period 1991 to 2007-08 indicating increase in average longevity. However, the rate of increase of the percentage of population in the age group 60+ is faster in Assam than Barpeta District. It was only four percent in Barpeta District during 1991 to 2007-08 as against fourteen percent in Assam as a whole. Although it indicates lower dependency load in Barpeta District than Assam, yet it also indicates slow rise of average longevity of the said district. Region wise, the percentage of population in the age 60+ is the highest in Central Assam in 2007-08 followed by Lower Assam and Upper Assam. In fact, the percentage of population in Central Assam in the age group 60+ is almost similar to the average figure of Assam. During 1991 to 2007-08, the percentage of population in Central Assam and Assam as a whole in the age group 60+ increased by 13 percent as against only 10 percent in Lower Assam and Upper Assam. It indicates that the improvement in the physical quality of life in Central Assam has been better than Lower and Upper Assam in general and Barpeta District in particular.

Although, the percentage of population in the working age group 15-59 is marginally higher in Barpeta District than Assam as a whole, yet the difference is negligible (only 0.4 percent). However, the percentage of population in the working age group 15-59 years increased by 9 percent during the period 1991 to 2007-08 as compared to only 6 percent in Assam indicating social and economic development of the district is faster than Assam as a whole during this period as workforce is closely linked with the developmental level of an economy. Region wise, the percentage of working population is highest in Central Assam in 2007-08 and lowest in Upper Assam. In fact, the percentage of population in the age group 15-59 is almost one percent more in Central Assam than average figure of Assam. During 1991 to 2007-

08, the increase in the percentage of population in the working age group was highest in Central Assam i.e. around eight percent which was seven percent in Lower Assam and only three percent in Upper Assam indicating uneven socio-economic development of different regions of Assam.

2.04 Sex disparity in age composition

Table 2.06 depicts the sex disparity in age composition of population in Assam and other regions of the state i.e., Lower Assam, Central Assam and Upper Assam.

TABLE: 2.06
Sex disparity in age composition in Assam (in percentage)

Region/ State	Age group	1991		2001		2007-08	
		Male	Female	Male	Female	Male	Female
Lower Assam	0 – 14	42.07	40.68	38.99	38.66	32.6	33.1
	15 – 59	53.62	52.55	55.93	54.99	62.1	61.6
	60 +	5.63	5.34	5.43	5.98	7.8	6.4
Central Assam	0 – 14	43.08	41.20	40.19	38.54	31.9	33.4
	15 – 59	52.58	51.56	55.60	54.15	62.8	61.0
	60 +	6.19	5.34	5.85	5.65	7.10	7.9
Upper Assam	0 – 14	40.12	37.68	36.89	35.71	30.1	30.8
	15 – 59	56.06	54.75	58.39	57.52	60.1	58.4
	60 +	6.23	5.00	5.76	5.57	7.3	6.6
Assam	0 – 14	41.23	39.27	37.96	37.12	31.10	33.50
	15 – 59	54.66	53.43	57.07	56.05	61.90	60.10
	60 +	5.65	4.97	5.81	5.89	7.10	6.40
Barpeta District	0 – 14	42.61	41.87	40.37	40.12	31.4	33.6
	15 – 59	52.01	51.14	54.12	53.91	61.8	60.2
	60 +	6.11	6.23	5.75	6.72	6.8	6.2

Source: a) Census of India, Series 1, India, Social and Cultural Tables, 1991 and 2001

b) District level Household and Facility Survey, Assam, 2007-08

c) 2009 (est) figures of India has been collected from Demographics of India – wikipedia, the Free Encyclopedia

It has been observed from Table 2.06 that the percentage of female population in the younger age group (0-14 yrs) is less than males in Barpeta District and Assam as a whole during the period 1991-2001. However, the percentage of both male and female population decreased in Assam and Barpeta District during the period 1991-2001. But the rate of decrease of female population was about four percent in Assam as against three percent of males during the decade 1991-2001. Similarly, the rate of decrease of female population in Barpeta District was more than males during the same period. It was three percent for females as against two percent of males. Almost same picture has been observed in different regions of Assam. The percentage of female population was less than their male counterparts in Lower Assam, Central Assam and Upper Assam during the period 1991-2001 in younger age group. However, the percentage of both male and female population decreased in all the three regions of Assam in the younger age group during the period 1991-2001. But, the rate of decrease of female population was faster than males in almost all the regions. The rate of decrease of female population in the age group 0-14 yrs was about four percent in Lower Assam as against only two percent of males during the period 1991-2001. It was three percent for males in Central Assam as against four percent of females. In Upper Assam, the rate of decrease of female population was about four percent in the younger age group during the period 1991-2001 in comparison to three percent of their male counterparts. No generally acceptable and satisfactory explanation can be given for the overall picture of a lower number of females. However, a few reasons may be indicated. First is that, girls in Assam as elsewhere in India are not as adequately looked after as boys. As a result, infant mortality among girls is high. Secondly, the burden of bearing children at an early age, and the greater frequency of births at short intervals lead to death of many women. Last but not the least is the all-pervasive male child preference which has been the cause of female feticide. However, the percentage of female population in the age group 0-14 yrs is marginally higher than males during the period 2001 to 2007-08 in Assam in general and Barpeta District and the three regions of Assam in particular. Ban on sex determination test and improvement in literacy rate may be the reasons for higher percentage of females than males.

Although the percentage of females in the working age group 15-59 yrs is almost same in the Barpeta District to the average figure of Assam in 2007-08, yet the percentage of female population is lower than males in Assam and Barpeta

District during the period 1991 to 2007-08. The percentage gap between male and female in the working age group 15-59 yrs was almost one in 1991 in Barpeta District and it increased to almost two in 2007-08. The picture is also same for Assam during the period 1991 to 2007-08. Such unsatisfactory demographic situation in Assam is the combined result of negligence of females in the infant age, maternity death mainly due to early age of marriage and prevalence of low mobility rate among the females from rural to urban. Region wise, the percentage gap between males and females in the working age group 15-59 yrs is almost same in Central and Upper Assam. It was around one percent in 1991 and increased to two percent in 2007-08. The only difference is the Lower Assam where the percentage gap between males and females in the economically active group 15-59 yrs was almost one percent in 1991 and the said gap was decreased to less than one percent in 2007-08. This may be due to higher percentage of urban population in Lower Assam as the capital city of Assam and BTAD (Bodoland Territorial Area Districts) head quarters are included within the Lower Assam in this present study.

Although the percentage of male and female population in the age group 60+ increased in Assam during the period 1991 to 2007-08, it is almost stagnant in Barpeta District. The percentage of female population in the age group 60+ increased in Assam at the rate of almost twelve percent from 1991 to 2007-08. But, the rate of increase of female population in Barpeta District is almost negligible during the same period. It indicates that the life expectancy of females in Assam has been increasing and in Barpeta District it is almost stagnant during the period 1991 to 2007-08. Region wise the rate of increase of male and female population in the age group 60+ is unequal during the period 1991 to 2007-08. For example, the rate of increase of male population in age group 60+ in Lower Assam was about sixteen percent during the period 1991 to 2007-08 as against only nine percent of female population which indicates slow increase of the longevity of life of females than that of male counterparts. But, the rate of increase of female population in Central and Upper Assam was higher than males during the period 1991 to 2007-08. It was 14 percent for females as against 12 percent for males in Central Assam and 13 percent for females as against only eight percent of males during the period 1991 to 2007-08. But, still there are male-female gap in both the two regions in 2007-08 where percentage of male population in the age group 60+ is marginally higher than females indicating the same thing i.e. longevity of life of male population is marginally more than females.

2.05 Population in the age groups 0-6:

The population in 0-6 age group of state / region shows whether the population is increasing or decreasing or has stabilized. Table 2.7 depicts region wise distribution of percentage of population in the age group 0-6.

TABLE: 2.07

Region wise distribution of percentage (average) of population in Assam in the age group 0-6

Region	1991		2001		2011	
	Male	Female	Male	Female	Male	Female
Lower Assam	20.15	21.01	17.03	17.50	14.09	14.66
Central Assam	20.35	21.46	17.37	17.89	15.00	15.09
Upper Assam	18.13	19.51	15.76	16.30	14.31	14.42
Assam	19.20	20.29	16.62	17.15	14.45	14.98
Barpeta District	21.01	21.47	18.78	19.26	16.28	16.96

Source: Census of India, Series 1, India, Social and Cultural Tables, 1991 & 2001

Provisional census report of Assam, 2011.

It has been observed from Table 2.07 that the population of Assam in the age group 0-6 yrs is declining from one census to another. However, the percentage of female population declined more rapidly than male population. While the percentage of male population declined by around fourteen percent from 1991 to 2011, the percentage of female population declined by fifteen percent during the same period although the percentage share of the population in the age group 0-6 years is higher among the females in Assam than males. Similar trend has also been observed in Barpeta District where percentage share of male population in the age group 0-6 yrs

declined by eleven percent from 1991 to 2011 as against twelve percent of females, although percentage of both male and female population in the said age group in Barpeta District is higher than the average figure of Assam in 2011. Among the regions of Assam, the percentage of female population in the age group 0-6 yrs declined more rapidly in Upper Assam followed by Lower Assam and Central Assam during the period 1991- 2011. It declined by about twenty eight percent in Upper Assam from 1991 to 2011 as against only twelve percent of males. In Lower and Central Assam the rate of decline of female population was eighteen and seventeen as against seventeen and fifteen of their male counterparts, although the percentage share of females were more than that of males. No satisfactory explanation can be given for the fast decline of females than males. However, a few reasons can be indicated. One is that male child preference which has been the cause of female feticide. Secondly, higher infant mortality among the girls as girls are not as adequately looked after as boys in male dominated society like Assam and finally, lack of adequate medical facilities in rural areas and lack of adequate family planning awareness.

2.06 Fertility, Mortality, Natural Growth Rate and Infant Mortality Rates:

Fertility which is expressed in a variety of ways is the most important determinant of natural increase of population in any region. It may be expressed in terms of general fertility rate, age-specific fertility rate, marital fertility rate and crude birth rate. The fertility rate is also considered as an important indicator of physical well-being of women population. It is closely associated with the health conditions of child bearing women, and educational advancement, economic condition and socio-cultural background of the population of a region.

Like fertility, mortality is another important determinant of natural increase of population in any region. It is also considered as an indicator of physical well-being of the population. As fertility rate is linked to a great extent with the mortality rate, the physical well-being of the women particularly of the child bearing age is also indicated by the mortality pattern of population of any area. However, the influence of other associated socio-economic factors in this regard cannot be ignored.

Similarly, the quality of human population and health status of women population can be judged by looking into the infant mortality pattern. It is because the fertility rate of any population is directly related to the infant mortality pattern.

The data obtained from Sample Registration Bulletin published by the Registrar General of India (Table 2.08) depicts some features about the trend in the birth and death rates, natural growth rate and infant mortality rate in the state.

TABLE: 2.08
Birth Rate, Death Rate, Natural Growth Rate and Infant Mortality Rate in India and Assam (Per Mille)

Year	Birth Rate		Death Rate		Natural Growth Rate		Infant Mortality Rate	
	Assam	India	Assam	India	Assam	India	Assam	India
1991	30.9	29.5	11.5	9.8	19.4	19.7	81	80
2001	27.0	25.4	9.6	8.4	17.4	17.0	74	66
2005	25.0	23.8	8.7	7.6	16.3	16.3	68	58
2006	24.6	23.5	8.7	7.5	15.9	16.0	67	57
2007	24.3	23.1	8.6	7.4	15.7	15.7	66	55
2008	24.0	22.7	8.4	7.2	15.6	15.5	64	53
2009	23.9	22.8	8.6	7.4	15.4	15.4	64	53

Source: Sample Registration Bulletin, R.G.I., New Delhi, Demographics of India – Wikipedia, The Free Encyclopedia and The Economic Survey, Assam, 2009-10

Data presented in Table 2.08 indicates that the birth rates of Assam are higher than all India average during the period 1991-2009, but there has been a gradual decline of birth rate from 1991 to 2009 compared to birth rate in many states of India, this is very high. For instance, according to the SRS Bulletin, 2009, the birth rate is 18.3 per mille for Andhra Pradesh, 14.7 for Kerala, 17.0 for Punjab, 16.3 for Tamil

Nadu and 17.2 for West Bengal. Thus, in comparison, birth rate in Assam is high. It is also higher than national average during 1991-2009.

Not only birth rate is high, it has remained almost stable at a high level during the five years period from 2005 to 2009. In the eighteen years or since 1991, there has not been any marked decline. For example, it fell from 30.9 (1991) to 23.9 in 2009. There is thus a fall of only 7 in as many as eighteen years. High birth rate in any region is a special feature of underdevelopment. Many economic and non-economic factors may be indicated for this high birth rate. Among them, the major ones are poverty, early age at marriage, illiteracy and a large ignorance of family planning.

Although, the death rate in Assam has been declining during the period 1991-2009 due to improvement of medical facilities and public health services along with sanitation facilities, yet the death rate has remained higher than national average. The death rate in Assam was around eight percent more than national average in 1991 which marginally declined to almost seven percent in 2009. It indicates that a large section of people are still deprived from adequate medical and health facilities. Most of them are ignorant about health and hygiene.

It has also been observed that the national growth rate of population has been falling in Assam as well as in India during 1991-2009. It is mainly due to fall in birth rate and death rate. But, birth rate exceeded death rate during the whole period. The national growth rate of population declined only by 4 per mille during the eighteen years period (1991 to 2001), indicating that the state has remained at the second stage in the theory of demographic transition.

The infant mortality rate which is an index of health status of women has been declining in Assam and India during the period 1991-2009. But, the rate of decline of IMR in Assam is slower than national level during this period. During 1991-2009, the IMR in Assam fell from 81 to 64 per mille. There is thus a fall of only 17 per mille as against 27 per mille at all India level. In other words, the IMR of Assam declined by only 12 percent from 1991 to 2009 as against 20 percent at national level. Moreover, the IMR of Assam has remained higher than national level during the period 1991 to 2009 indicating low health status of women population of Assam than national level. It also indicates higher rate of maternal mortality as there is the possibility to increase infant mortality where pregnancy occur repeatedly and in quick succession. One very

important matter that has been observed is a high degree of positive correlation (+0.95) that exists between the IMR and birth rate in Assam. This implies that high IMR of Assam is associated with high birth rate as it induces couples, especially among the poor, to maintain a larger size of family.

2.07 Sex Specific Mortality Rate:

It is however satisfactory to note that the female mortality rate in Assam (also India) is less than that of males (Table 2.09). But female mortality rate in Assam is quite high than the national average during 2001-2009.

TABLE: 2.09
Sex specific mortality rate in Assam and India (per mille)

Year	Country / State	Total	Male	Female
2001	Assam	9.6	10.4	8.8
	India	8.4	9.1	7.8
2003	Assam	9.1	9.2	9.1
	India	8.0	8.4	7.5
2005	Assam	8.7	9.3	7.9
	India	7.6	8.0	7.1
2006	Assam	8.7	9.2	8.1
	India	7.5	8.0	7.0
2009	Assam	8.4	9.3	7.4
	India	7.3	7.8	6.7

Source: SRS, RGI, India.

It has been observed from Table 2.09 that the female mortality rate in Assam is less than that of males during the period 2001-2009. The male mortality rate has declined by only about 6 percent from 2001 to 2009 as against by 14 percent in case of female mortality rate. The factors which have largely contributed to this lower female mortality rate include rise in the age at marriage and sharp decline of child marriage, reduction in the probability of unsafe delivery at home and improvement of public health measures like drinking water supply, improved hygienic and sanitation facilities and the improvement of medical and hospital facilities. But, the female mortality rate of Assam is higher than national average during the period 2001-2009. Moreover, the gap of female mortality rate between Assam and India was almost same during the whole period 2001 to 2009. It was 1 per mille in 2001 which marginally declined to 0.7 per mille in 2009. It indicates that the health status of Assamese women is lower than national level.

2.08 Life Expectancy:

Life expectancy reflects very well the physical well-being of population in a region. The life expectancy at birth is dependent on a host of demographic and health parameters. It is also associated with the infant mortality rate of any population. It is generally observed that the life expectancy is high where the infant mortality rate is low and vice-versa. Again, in most of the cases, the life expectancy is directly associated with the level of economic development.

In spite of the improvement of medical facilities and significant fall in the infant mortality rate, the life expectancy at birth (LEB) in Assam has still been as low as 58.95 years in 2002-06 as against 63.4 years at national level for the same year (Table 2.10).

It is evident from Table 2.10 that there exists a male-female differential in life expectancy. In the 10 year period (1970-80) the female life expectancy of Assam was lower than males. The male-female gap in life expectancy was more than one year during 1970-80. However, the female life expectancy increased by almost 6 percent during the period 1970-80 as against 5 percent of male life expectancy. But the life expectancy of both males and females were lower in Assam than national level during 1970-80. However, the rate of increase in male and female life expectancy was more

in Assam than national level during the period 1970-80. The rate of increase in male and female life expectancy at national level was 3 percent for females and 2 percent for males during 1970-80.

In the subsequent period, Assam as well as India has witnessed a higher female LEB as compared to the male. Over the seventeen year period (1989-2006), the male-female gap in life expectancy was almost stagnant at 0.7 years in Assam. It indicates that the quality of life of women has not increased rapidly, although female LEB is higher than males. Moreover, the rate of increase of male and female LEB was around 3 percent during 1989-2006 which was lower than 1970-80 decade. In other words, the rate of increase of female LEB was almost half during 1989-2006 as compared to 1970-80 indicating that the medical and health care facilities for women had not developed satisfactorily as per requirement. Further, the life expectancy of both males and females in Assam were lower than national level during 1989-2006. It was almost 4 percent lower than national level during 1989-2006. Moreover, the rate of increase in life expectancy of both male and female in Assam was slower than national level during 1989-99 to 2002-06. It was around 3 percent in Assam as against 4 percent at national level. Thus the improvement in the quality of life of population in Assam including women was not only slower but also lower than national level indicating slow rate of economic development.

TABLE: 2.10
Life Expectancy at Birth in India and Assam

State/ Country	1970 - 75			1976 - 80			1989 - 99			1998 - 02			1999 - 03			2000 - 04			2001 - 05			2002 - 06						
	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F				
Assam	45.5	46.2	44.8	51.0	51.6	50.4	54.95	54.6	55.3	57.9	57.7	58.1	58.05	57.8	58.3	58.3	58.0	58.6	58.6	58.6	58.6	58.6	58.6	58.6	59.0	58.9	58.6	59.3
India	49.75	50.5	49.0	52.3	52.5	52.1	59.3	59.0	59.7	62.4	61.6	63.3	62.6	61.8	63.5	62.1	62.9	63.1	63.7	62.3	63.9	63.4	62.6	64.2	64.2	64.2	64.2	

Source: SRS, RGI of India, based Abridge Life Tables 1976 - 80, 1998 - 02 and 2002 - 06

An important aspect that has been observed is the low degree of negative correlation (-0.35) that exists between infant mortality rates and LEB for females in Assam during 2001-06 as against high degree of negative correlation (-0.98) between the two at national level during the same period. This implies that LEB is high where the IMR is low and vice-versa.

It has also been observed from Table 2.11 that there exists a male-female differential in the projected levels of LEB during 2011-25 in Assam and India. The female LEB was almost 2 years higher at national level than males as against less than 2 years in Assam over the projected period 2011-25. This increase in the LEB has become possible due to fall in the IMR, improvement in ante-natal and post-natal care, and general improvement in medical facilities and better control of diseases. However, such favourable development is slow in Assam than national level as male-female gap of LEB in Assam is lower than national level. Further, the projected LEB for both males and females were low in Assam in comparison to national level during the period 2011-25. However, over the ensuing fourteen years (2011-25) the female LEB has been projected to increase by 4 years in Assam as against almost 3 years in India.

TABLE: 2.11

Projected Levels of Expectation of Life at Birth in India and Assam

Country / State	2011-15		2016-20		2021-25	
	Male	Female	Male	Female	Male	Female
India	67.3	69.6	68.8	71.1	69.8	72.3
Assam	63.6	64.8	65.6	66.8	67.1	68.8

Source: Report of the Technical Group on Population Projections, May 2006, National Commission of Population / MOHFW and National Health Profile, 2008, MOHFW.

2.09 Marital Status:

Marital status may also be used as an indicator of women's well-being. It is associated with both demographic and social aspects of human population of a region. Marital status of any population includes never married population, married population, widowed or widower population and divorced or separated population in respect of both male and female. The proportion of never married at the younger age is considered as an important indicator of

possible access to options other than marriage and the relative acceptability of remaining single for each sex and age group (United Nations, 1984). Besides the economic and socio-cultural factors including fertility and mortality behaviour, the marital status significantly influences the overall quality of human population. The influence of marital status upon the womenfolk is again more striking.

Never Married Population in Assam:

It has been observed from Table 2.13 that the percentage of never married male and female population in Assam have been quite high than the national averages. The percentage of never married female was almost 18 percent higher in Assam than national level in 1971 which was declined to 8 percent in 2001. But, for males it was almost 11 percent higher in Assam than national level in 1971 and it has remained stagnant in 2001. Though, the percentage of unmarried female population as found in Assam is primarily the result of relatively late marriage of females, yet the percentage of unmarried female population of Assam has been declining over the period 1971-2001 indicating higher intensity of marriage leading to probability of higher birth rate. Moreover, the male-female differential of never married was significantly higher in Assam than the country as a whole. The male-female gap of never married was almost 6 percent in Assam in 1971 which increased to almost 10 percent in 2001. But, at national level it was almost 9 percent in 1971 and rapidly declined to almost 7 percent in 2001. This happens due to fast decrease in the percentage of never married women in Assam than national level. During 1971-2001, the percentage of never married women declined by 4 percent as against only 0.28 percent for males in Assam. But at the national level, the percentage of never married women increased by almost 2 percent during 1971-2001 as against no increase or decrease in the percentage of never married males. This indicates that the percentage of never married women had declined rapidly over the period 1971-2001 in Assam enhancing the possibility of higher percentage of married population.

Married Population in Assam:

It has been observed from Table 2.12 that the percentage of married male and female has been increasing in Assam as well as India over the period 1971-2001. It has also been observed that the percentage of married male and female is less in Assam than national level during 1971-2001. But, the rate of increase of married female was higher in Assam than

national level. Over the period 1971-2001, the percentage of married female has been increasing in Assam by 8 percent as against only 2 percent at national level. However, the rate of increase of married male is almost same in Assam and India during 1971-2001 i.e. around 1 percent. Although the possibility of early marriage in Assam is less than national level due to lower percentage of married female in Assam in comparison to India, yet such possibility has been decreasing over the period 1971-2001. This may be possible due to high growth of population in Assam which is around 2 percent per annum. Further, the percentages of married females have been higher than males in Assam and India during the period 1971-2001. It indicates that the females are married earlier than males resulting in large number of births.

Widow Population in Assam:

It has been observed from Table 2.12 that the proportion of widows is more than that of widowers in Assam as elsewhere in the country. Although the percentages of widows have been decreasing over time both in Assam and the country, the percentages of widows remain high in comparison to widowers during 1971-2001, which may be due to prevailing social restriction of widow remarriage unlike the widower remarriage. Although the percentage of widows and widowers are less in Assam as compared to the country as a whole, the rate of decrease of widows is slower over the period 1971-2001. It decreased by about 24 percent at national level as against only 16 percent in Assam from 1971 to 2001. It indicates that the rate of decrease in male mortality is slower in Assam than national level although medical and health facilities have been improving over the period.

Divorced / Separated Population in Assam:

The situation is quite discouraging in respect of the proportions of male/ female divorced/ separated population in Assam as well as the country as a whole. It is because of the percentage of female divorced / separated populations in Assam as well as the country as a whole are higher than males. Female divorced/separated population was 56 percent higher than males in 1971 and it was 46 percent higher in 2001. However, at national level, it was 47 percent higher than males in 1971 and it was about 44 percent in 2001. The incidence of divorced/separated among the female is found to be more, because most of the divorced/separated females seldom get remarried due to social restrictions unlike in the case

of male divorced/separated ones. All these have adverse effect upon the demographic and social quality of human population and more so among women in Assam.

2.10 Age at Marriage:

Marriage which forms basis of social life is almost universal in India. Although marriage is a social phenomenon, "age at marriage" is considered a demographic one. It is because age at marriage determines the fertility and natural growth of population. In India, child marriage was the norm till the recent past. It was more common in the states of northern India than those of southern India. During the last few decades, various laws have been enacted in India to prevent child marriage. The Child Marriage Restraint Act called "Sarada Act" enacted in 1929, placed restrictions on marriage of girls and boys below the ages of 12 and 15 respectively. Following an amendment of this Act in 1949, the legal minimum ages at marriage for females and males were raised to 15 and 18 respectively. Again, according to Child Marriage Restraint Act of 1978, the legally prescribed minimum age at marriage in India is 18 years for girls and 21 years for boys. Nevertheless, due to a number of socio-economic problems, the registration of marriages is not yet made popular in Assam as well as the country.

2.11 Mean age at Marriage:

It has been observed from Table 2.13 that the mean age at marriage for both male and female population in Assam is higher than national level. For example, the mean age at marriage for females in Assam was 1 year more than national level in 1971 which increased to only 1.4 years in 2001. But, for males the mean age at marriage for Assam was only 1.3 years more than national level in 1971 and increased to almost 3 years more than national level in 2001. Two important things have been observed from such increase of the mean age at marriage. Firstly, although the mean age at marriage for both male and female population in Assam is higher than national level, yet the increase of the mean age at marriage has been slow indicating that marriage is not only universal, but it takes place at an early age. Secondly, male-female differentials of the mean age at marriage have been widening indicating that the parents are willing to marry their girl child at an early age rather than to wait and invest resources for a longtime to create assets for them.

Region wise, the mean age at marriage for both males and females are highest in Upper Assam and lowest in Central Assam during the period 1971 to 2007-08, although sex ratio of Central Assam was 1000:956 as against 1000:949 in Upper Assam in 2011 indicating limited impact of the Child Marriage Restraint Act of 1978 and tendency for early marriage. Although the increase in mean age at marriage is different in different regions of Assam, yet it has been observed that the increase of the mean age at marriage has been slow and the male-female differentials of the mean age at marriage have been widening over the period 1971 to 2007-08. It also indicates that girls are allowed to get married at an early age than boys and hence they get limited scope to equip themselves through modern education as probability of engaging in education is very low particularly of a poor family.

TABLE: 2.12

Sex-wise Marital Status in Assam

(As percentage of Total)

State/ Country	Year	Never Married		Married		Widow		Divorced / Separated		Unspecified Status	
		M	F	M	F	M	F	M	F	M	F
Assam	1971	61.96	55.39	35.50	37.38	2.22	6.72	0.27	0.48	0.05	0.03
	1991	62.17	53.58	36.22	40.27	1.45	5.74	0.12	0.39	0.01	0.02
	2001	61.61	51.27	36.38	43.56	0.98	4.86	0.14	0.30	0.89	0.01
India	1971	54.90	45.62	41.80	45.08	2.94	8.86	0.25	0.39	0.09	0.05
	1991	56.12	46.28	42.60	46.89	1.95	6.36	0.15	0.41	0.08	0.06
	2001	54.82	47.32	42.89	46.75	2.01	5.37	0.21	0.48	0.07	0.08

Source: Socio-Cultural Tables, Census of India, 1971, 1991 and 2001.

TABLE : 2.13
Mean age of marriage in Assam

Region/ State/ Country	1971		1991		2001		2007-08	
	Male	Female	Male	Female	Male	Female	Male	Female
Lower Assam	19.2	17.6	22.8	18.8	24.8	19.4	27.1	20.8
Central Assam	18.9	17.2	22.1	17.4	24.1	19.2	26.1	20.6
Upper Assam	20.6	18.8	24.2	19.8	25.1	20.8	27.0	21.1
Barpeta District	--	--	23.1	18.42	24.6	19.8	26.8	19.8
Assam	19.5	17.8	22.8	18.9	25.7	19.7	26.9	20.8
India	18.2	16.8	20.1	17.1	22.6	18.3	--	--

Source: a) Census of India, 1971, 1991 and 2001
b) DLHFS, 2007-08, Assam.

2.12 Maternal Mortality Rate:

Maternal death or maternal mortality, also “obstetrical death” is the death of a woman during or shortly after pregnancy. According to the World Health Organization (WHO), a maternal death is defined as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes. Maternal mortality is a sentinel event to assess the quality of health care system.

Maternal Mortality Ratio is the number of maternal deaths per 100,000 live births. The MMR is also used as a measure of the quality of a health care system.

Table 2.14 depicts Maternal Mortality Ratio in India and Assam.

TABLE : 2.14
Maternal Mortality Rate
(Per 100,000 live birth)

State/ Country	1997-98	1999-2001	2001-03	2004-06
Assam	568	398	490	480
India	398	327	301	254

Source: a) SRS, Maternal Mortality in India: 1997-2003, Trends, Causes and Risk Factors, RGI, India.
b) Special Bulletin on Maternal Mortality in India 2004-06, SRS, RGI, April 2009

It has been observed from Table 2.14 that the maternal mortality ratio of Assam has been decreasing very slowly in comparison to national level during the period 1997-98 to 2004-06. While, the rate of decrease of MMR in Assam was almost 9 percent during 1997-98 to 2004-06, the rate of decrease of MMR at all India level was almost 22 percent. Moreover, the MMR of Assam is quite higher than national average during the said period. In fact the MMR of Assam was almost 30 percent higher than national level in 2004-06. It indicates that the quality of female health care system in Assam is poor than all India level. According to the WHO in its 2005 World Health Report, the major causes of MMR are severe bleeding/hemorrhage, infections, unsafe abortions, eclampsia, obstructed labour, malaria, anaemia, HIV AIDS and cardiovascular disease, complicate pregnancy etc. The Report also pointed out that the high rates of maternal deaths occur in some areas that have high rates of infant mortality, reflecting generally poor nutrition and medical care. In Assam, infant mortality rate was 67 per mille in 2006 (Table 2.8) with high MMR at 480 per 100,000 live birth. It was 74 per mille in 2001 with high MMR at 398 per 100,000 live births. Further, low birth weight of child is correlated with maternal death from cardiovascular disease (WHO). Conversely, heavier child birth weight is correlated with lower risk of maternal death (ibid). Another issue that is associated with maternal mortality is the lack of access to skilled medical care during child birth and distance of traveling to the nearest clinic to receive proper care. Even so, the nearest clinic may not provide decent care because of the lack of qualified staff and equipment. Table 2.16 depicts causes of maternal death from 2001-03 in Assam and India.

It has been observed from Table 2.16 that 37 percent of maternal death occurred in Assam due to bleeding/ hemorrhage as against 38 percent at national level. 33 percent of maternal death was occurred in Assam due to other conditions like lack of access to skilled medical care during child birth, distance of traveling to the clinic, lack of qualified staff and equipment etc. as against 34 percent of national average. 11 percent of maternal death was occurred in Assam due to sepsis, 4 percent due to hypertensive disorders, 5 percent due to obstructed labour and 10 percent due to unsafe abortion. The corresponding national rate was 11 percent due to sepsis, 5 percent due to hypertensive disorders, 5 percent due to obstructed labour and 8 percent due to unsafe abortion. Such phenomenon indicates that female health care facilities in Assam and India are still backward. But Assam is more lagging behind in providing better female health care facilities than all India level.

TABLE : 2.15

Causes of Maternal Death from 2001-03
(in percent)

Causes	India (%)	Assam (%)
Hemorrhage	38	37
Sepsis	11	11
Hypertensive Disorder	5	4
Obstructed Labour	5	5
Abortion	8	10
Other Condition	34	33

Source: SRS, Maternal Mortality in India: 1997-03 Trends, Causes and Risk Factors, RGI, India.

2.13 Literacy rate:

Literacy and educational attainment are considered to be the hallmark of modern society. The traits of modern society such as urbanization, industrialization and modernization are closely associated with the level of literacy and education. In addition, the issue of educational development is so basic and fundamental to human life that its

differential level results in disparities among people and places (Desai, 1991). In recognition to this, developing countries like India view literacy and education as necessary and basic ingredients of economic and social development planning (Sharma and Rather Ford, 1987). Unfortunately, a major part of Assam is lagging behind in respect of literacy and education than many other parts of the country. This is even more so in the case of female population of Assam. Again, spread of women's education is not only vitally important for balanced socio-economic development of any region via socio-economic uplift of a society but also as a factor for overall educational development.

Further, female education which influences fertility and mortality rates and age at marriage of women, in turn helps control population. As a matter of fact, literacy attainment is a part of larger societal changes and it needs to be placed in proper perspective, without which the regional inequality as well as gender discriminations will not disappear even as general literacy rate rises (Raju, 1993).

As elsewhere in the country, in Assam also, the level of female literacy is not only lower than that of the males, but also varied regionally. Table 2.16 depicts literacy rate of males and females during different census period.

TABLE: 2.16
Literacy Rate of Assam and India by Sex
(in percent)

Year	Assam			India		
	Total	Male	Female	Total	Male	Female
1951	18.53	28.01	7.58	18.33	27.16	8.86
1961	32.95	44.28	18.62	28.30	40.40	15.35
1971	33.94	43.72	22.76	34.45	45.96	21.97
1981	N/A	N/A	N/A	43.57	56.38	29.76
1991	52.89	61.87	43.03	52.21	64.13	39.29
2001	63.25	71.28	54.61	64.84	75.26	53.67
2011 (P)	73.04	78.81	67.27	74.04	82.14	65.46

Note: N/A : Not available because 1981 census was not conducted in Assam
Source: Census of India.

The definition of literacy used in the present study is the one taken by Census of India (1961-1991). Accordingly, a person who has the ability to read and write with understanding in any language is termed as a literate. To be classified as a literate, a person need not have received any formal education or passed any minimum standard to qualify as literate. A person who could merely read but not write was not defined as literate.

Children below 5 years of age were also defined as illiterate till the 1981 census. But in 1991 census the age has been raised to 7 years.

There has been change in the definitions of literacy rate from one census to the other. During 1961-81 censuses, the literacy rate was defined as the proportion of literates to the total population and expressed in percentage. But, in 1991 census, it has been defined as the proportion of literates to total population of the age group 7 years and above and also expressed in percentage.

TABLE: 2.17
Region wise Literacy Rate in Assam

Region	1991		2001		2011 (P)	
	Male	Female	Male	Female	Male	Female
Lower Assam	57.00	37.61	67.66	50.09	75.25	64.12
Central Assam	61.81	42.80	71.14	53.81	77.83	66.15
Upper Assam	65.65	46.79	79.66	57.98	84.04	71.75
Barpeta District	52.61	33.20	57.35	47.07	70.72	59.04
Assam	61.87	43.03	71.93	54.61	78.81	67.27

Source: Census of India.

It has been observed from Table 2.16 that the total literacy rate has been on the increase in Assam and India, with a sharp step-up in the latest 1991 to 2011. As per Provisional Census Report of 2011, the literacy rate at 73.04 percent in Assam and 74.04 in India marks around 9 percentage points rise over the previous rate of 2001. Although female literacy rate in Assam is higher than national level since 1991, yet there is male-female differential of literacy rate. However, the male-female differentials of literacy rate have been reducing over the period 1951-2011 both in Assam and India. In 1951, the male-female differential in literacy rate in Assam was almost 20 percent as against 18 percent at national level. It was reduced to around 11 percent in Assam and 17 percent at national level in 2011. Expansion of educational facilities and improvement of attitude towards girl child are some of crucial factors behind the reduction of gender gap in literacy rate. Despite a noticeable uptrend in the female literacy rate, it continues to be low and much below that achieved in some other states of India, and as such it is unsatisfactory. For example, the female literacy rate of Kerela is 92 percent and the female literacy rate of neighbouring state Mizoram is 89.4 percent and it is 83.10 percent in Tripura in 2011.

Not only there are male-female differentials in literacy rate in Assam, but also there are significant regional variations. Table 2.17 depicts region wise literacy rate in Assam.

It has been observed from Table 2.17 that the female literacy rate in Lower Assam and Barpeta District were lower than average literacy rate of Assam during the period 1991-2011. The female literacy rate of Lower Assam was almost 5 percent less than average literacy rate of Assam in 1991 as against almost 10 percent less in Barpeta District. However, it was reduced to around 3 percent in Lower Assam and 8 percent in Barpeta District in 2011. Although female literacy rate of Central Assam is marginally lower than the average figure of Assam, the difference is negligible. In fact, the female literacy rate of Upper Assam was the highest among the three regions of Assam during 1991-2011 as the mean age of marriage was highest in Upper Assam. Early marriage of females and poverty may be the major impediments in achieving higher literacy rate in Lower Assam and Barpeta District. Moreover, the female literacy rate in the three regions of Assam is lower than male literacy rate during the period 1991-2011. The male-female differential in literacy rate was around 19 percent in all the three regions of Assam including Barpeta District. However, it declined to around 11 percent in 2011. Although the gender gap in literacy rate has been declining in the three regions of Assam including Barpeta District, yet the pace of decline is very slow indicating that males are enjoying better educational opportunities and females are at a

disadvantage in accessing such opportunities due to early marriage and pressure of household work as the society is still underdeveloped.

Prevalence of low literacy among women in various regions of Assam, as elsewhere in the country has been attributed to the cumulative effects of physical, economic and social constraints including the legacy of the past (Guha, 1979). Briefly speaking, continuance of strong societal prejudices against women's mobility and education including late marriage in most parts of the state is quite discouraging at least at this age of modern science and technology. Such a practice has generally brought the status of Assamese women lower in the society.

The variation in women literacy rates in Assam will be further clear when it is viewed separately for rural and urban areas of various regions of Assam as is depicted in Table 2.18. At the state level, the rural-urban differential of female literacy rate was 33.81 percent as against lower differential of male literacy 25.46 percent in 1991. However, the rural urban differential in female literacy declined to 28.3 as against 20.76 percent differential for males in 2001. Two important aspects may be noted from this rural-urban gap. Firstly, rural-urban gap in female literacy is higher than males. Secondly, rural-urban gap in female literacy has been decreasing over the period 1991-2001, although, such decrease is slow. The prevalence of high rural-urban differential in female literacy may be due to the availability of better educational facilities accompanied by educational consciousness among the urban residents. In contrast, lack of adequate educational facilities and awareness both among the girls and their parents has been responsible for low female literacy in rural areas. Women in rural areas, particularly those having least access to the outer world, are much deprived due to gross neglect of women's education. Better economic condition of the majority of urban dwellers has also been an additive factor in this regard.

Although female literacy rate of Central Assam was almost the same as average female literacy rate of Assam and that for Upper Assam it was higher than the average figure of Assam, there still exists a rural-urban differential. The rural-urban gap in female literacy was almost 34 percent in Lower and Upper Assam and it was 31 percent in Central Assam in 1991. The rural-urban gap in female literacy rate in Barpeta District was highest i.e. almost 35 percent in Assam in 1991, in comparison to all the three regions and that of Assam (34 percent). Although there has been reduction in rural-urban gap in female literacy rate in 2001, the pace of decline has been slow. It decreased to only 30 percent in Lower Assam which was almost the same as the rural-urban gap in Assam. However, the rural-urban gap in female

literacy rate decreased rapidly to 25 percent in Central Assam as against 28 percent in Upper Assam and Barpeta District. In comparison to females, the rural-urban gap in male literacy rate was much lower. It was around 18 percent in Upper Assam and Central Assam which was lowest in 2001 and highest in Lower Assam and Barpeta District which was 24 percent and 27 percent respectively. Three important factors emerge from this discussion. Firstly, literacy rate of rural women are far behind than urban women in all areas of Assam indicating lack of adequate educational facilities, gross neglect of women's education and poverty in rural areas of Assam than urban areas. Secondly, the pace of decrease of rural-urban gap in female literacy during 1991-2001 was slow indicating marginal improvement in attitude towards women's education. Thirdly, rural-urban gap in female literacy was lower than male literacy indicating better opportunities for males in accessing education than females.

TABLE: 2.18

Sex wise Rural and Urban Female Literacy Rates (in percent) In Various regions of Assam

Region	1991				2001				2011(Provisional)			
	Rural Female	Urban Female	Rural Male	Urban Male	Rural Female	Urban Female	Rural Male	Urban Male	Rural Female	Urban Female	Rural Male	Urban Male
Upper Assam	34.13	68.52	53.89	82.58	47.74	78.18	64.98	89.36	N/A	N/A	N/A	N/A
Central Assam	40.72	72.19	60.04	84.02	53.26	78.61	69.42	88.84	N/A	N/A	N/A	N/A
Lower Assam	42.60	77.11	62.49	86.11	55.39	83.47	72.84	91.37	N/A	N/A	N/A	N/A
Barpeta District	30.53	66.07	50.10	82.81	45.54	77.04	63.73	90.40	N/A	N/A	N/A	N/A
Assam	39.24	73.05	58.96	84.42	52.27	80.57	69.36	90.12	N/A	N/A	N/A	N/A

Source: Census of India

2.14 Gross Enrollment Ratio in Schools:

The gross enrollment ratio (GER) or gross enrollment index (GEI) is a statistical measure in education sector to give a rough indication of primary, secondary and tertiary levels of education, regardless of age, as a percentage of the population at official school age for the three levels. GER is another indicator regarding performance of a region in the field of education. A sharp fall in the enrollment ratio indicates increasing number of dropouts, which

in many cases adds number in the labour market in the form of child labour due to economic necessity (Sarma, 2007)

Table 2.19 depicts Gross Enrollment Ratio in schools for general education of Assam and India.

TABLE: 2.19
Gross Enrollment Ratio in Schools for General Education in Assam and India

Years	Region	Classes I – V (6 – 11 years)			Classes VI – VIII (11 – 14 years)		
		Boys	Girls	Total	Boys	Girls	Total
1999 – 2000	Assam	124.25	105.35	114.95	81.02	64.63	72.99
	India	104.08	85.18	94.90	67.15	49.66	58.79
2000 – 2001	Assam	125.44	106.44	116.08	80.02	63.67	72.00
	India	104.91	85.92	95.66	66.68	49.94	58.64
2001 – 2002	Assam	127.18	107.42	117.43	78.73	62.27	70.63
	India	105.29	86.91	96.30	67.77	52.09	60.20
2002 – 2003	Assam	88.17	85.43	86.83	52.00	50.39	56.22
	India	97.53	93.07	95.39	65.34	56.22	60.99
2003 – 2004	Assam	88.22	88.09	88.16	66.02	61.15	63.65
	India	100.8	95.70	98.30	66.90	57.70	62.50
2004 – 2005	Assam	105.59	104.80	105.20	72.05	67.22	69.70
	India	110.70	104.67	107.80	74.30	65.13	69.93
2006 – 2007	Assam	97.63	99.23	98.42	67.55	63.46	65.55
	India	114.42	107.84	111.24	77.41	69.51	73.63
2010 – 2011	Assam	106.00	106.1	106.1	92.0	90.5	91.3
	India	115.3	112.6	114.0	81.5	74.4	78.1

Source: Economic Survey, Government of India.

Table 2.19 shows that the total GER for Assam at the Primary Stages (Classes-V) was increasing during the period 1999-2000 to 2001-02, although the pace of increase was minimal. During 2002-03, GER of Assam at 86.83 marks around 30 points fall over the previous year 2001-02. However, during 2002-04 to 2010-11, the GER of Assam was on the rise. Thus, the GER of Assam is not only fluctuating during 1999-2000 to 2010-11, but also lower in the latest year (2010-11) by around 9 points in comparison to 1999-2000. However, since the GER for India at the Primary Stages has been increasing gradually over the period 1999-2000 to 2010-11, it indicates that number of dropouts in Assam had been increasing than the national level.

The GER for girls at the Primary Stages (Classes I-V) of Assam increased marginally during the period 1999-2000 to 2001-02 as against almost stable GER of India around 86 to 87 during the same period. During 2002-03, the GER for girls had fallen by around 22 points over the previous year. However, during 2003-04 to 2010-2011, the GER of Assam was increasing. Thus the GER for girls in Assam has been fluctuating over the period 1999-2000 to 2010-11. The GER for girls in India had been increasing gradually over the period 2002-03 to 2010-11. However, the GER for boys in Assam increased by around 2 to 3 points during 1999-2000 to 2001-02 and the GER for boys in Assam was higher than national level during this period. During 2002- 03 to 2003-04, the GER for boys in Assam was around 88 and lower than national level. But the GER for boys was higher than girls in Assam like national level during the period 1999-2000 to 2003-04. However, the GER for boys and girls in Assam was almost same during the period 2004-05 to 2010-11, although GER for boys was lower than national level during the nine year period 2002-03 to 2010-11. Some important points may be mentioned from this discussion. Firstly, although the GER for girls in Assam was on the increase during the last seven years (2002-03 to 2010-11), it was lower than national level indicating higher dropout rates in Assam. Secondly, the male-female gap of GER in Assam is almost negligible during 2003-04 to 2010-11 as against significant male-female gap of GER at national level during the same period. However, the growth of the GER in Assam for girls is very slow during the twelve year period 1999-2000 to 2010-11 in comparison to national level indicating lower level of educational attainment for girls in Assam than all India level.

It has also been observed from Table 2.19 that the total GER for Assam at the middle stages (Classes VI-VIII) decreased by around 17 points from 1999-2000 to 2002-03 as against almost stable rate of GER at national level. However, the total GER for Assam at the

middle stages was higher than national level during this period except 2002-03. During the two year period (2003-04 and 2004-05) the GER of Assam showed an uptrend and it was almost same to the national level. However, the GER of Assam again decreased in 2006-07 and it was lower than national level. But, during 2010-11, the total GER for Assam at the middle stages again increased to around 91 and it was around 13 points higher than national level. Thus the GER of Assam at the middle stages has also been fluctuating over the twelve year period (1999-2000 to 2010-11) as against rising trend at national level indicating higher dropout rates in Assam even in the middle stages than national level.

The GER for girls at middle stages (Classes VI- VIII) of Assam decreased to almost 14 points from 1999-2000 to 2002-03. However, the GER for boys also decreased during the same period. As against these trends of Assam, the GER for both boys and girls at middle stages was higher than national level. Although the GER for both boys and girls was on the increase during 2003-04 to 2010-11, such figures were lower than national level. During the twelve year period (1999-2000 to 2010-11) the GER for boys and girls of Assam was not only fluctuating but also lower than national level except 2010-11 where GER of Assam (both boys and girls) was higher than national level. However, the GER for boys was marginally higher than girls in Assam during 2010-11. All such phenomenon apparently indicates that the number of dropouts who left middle schools were higher in Assam which may be due to economic compulsion and general poverty. Inadequate access to schools may be the other reason but for that data on school availability is required.

It has been mentioned that women in Assam are in a better position than the all India average in terms of literacy. For example, the female literacy rate of Assam was almost 2 percent more than all India average. But attainment of a higher literacy rate alone does not make a community educationally advanced. Completion of primary stage of education and continuation of school up to 15 years of age etc. are taken as indicators of educational attainment. Therefore, the school dropout rate has been represented in the Table 2.20 to get a clear picture.

TABLE: 2.20
School Dropout Rate by Class Range (in %)

Year	State/ Country	Dropout Rates								
		Classes I to V			Classes I to VIII			Classes I to X		
		Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
2004-05	Assam	51.58	48.34	50.07	72.41	74.60	73.38	75.18	74.69	74.96
	India	31.81	25.42	29.00	50.49	51.28	50.84	60.41	63.88	61.92
2006-07	Assam	45.7	42.8	44.3	72.7	74.7	73.6	78.2	77.1	77.7
	India	24.4	26.6	25.4	46.6	45.3	46.0	58.6	61.5	59.9
2008-09	Assam	39.82	37.26	38.54	72.89	74.9	73.89	79.22	78.51	78.86
	India	20.98	24.42	22.7	42.71	43.3	43.00	56.79	60.12	58.45

Source: Gender Statistics, Assam, 2008-09, Directorate of Economics & Statistics, Assam

It has been observed from Table 2.20 that total dropout rates of Assam for classes I-V were decreasing during the period 2004-05 to 2008-09. The rate of decrease was almost 13 percent from 2004-05 to 2008-09 period. However, the school dropout rates of Assam for classes I-V were higher than national average during the said period indicating mass poverty in Assam which compel majority of the children to leave school to help their parents in work. Disaggregated by sex, it has been observed that the school dropout rates of girls for classes I-V were declining over the period 2004-05 to 2008-09 for both Assam and India. However, the dropout rate for girls in Assam was more than all India level during the whole five year period (2004-05 to 2008-09). But the dropout rates of girls for classes I-V declined in Assam by almost 10 percent from 2004-05 to 2008-09 as against only 1 percent at national level. Moreover, the dropout rates for boys in Assam were almost 3 percent higher than girls in 2004-05 where it was almost 6 percent higher for boys than girls at national level. But, the differences in dropout rates for boys and girls were almost the same in Assam in 2008-09 as

against marked decline at national level where dropout rates for girls were almost 3 percent higher than boys. Although the cause of fast decline of school dropout rates for girls in Assam for classes I-V may indicate the rise in per capita income, expansion of educational institutions and change in attitude towards female education yet the role of Mid-day Meal Programme through which mid day meal has been supplied in schools during classes I-V cannot be denied as most of the poor families prefer to send their children to schools for nutritional support.

On the other hand, the school dropout rate of Assam (total) for classes I to VII was almost same for the period 2004-05 to 2008-09 and it was far higher than national level. Moreover, the gap between Assam and India has been widening over the period 2004-05 to 2008-09. It was almost 22 percent in 2004-05 and increased to almost 31 percent in 2008-09 indicating mass poverty in Assam as most of the children particularly in rural areas were compelled to drop out from schools to help their parents in work due to poverty. Disaggregated by sex, it has been observed that the school dropout rates for girls in Assam for classes I-V was almost 2 percent higher than boys and it was also higher than national level during the period 2004-05 to 2008-09 indicating possibility of child labour and gross neglect of girls' education.

It has also been observed that the total dropout rates for classes I to X increased by almost 2 percent in Assam as against almost 3 percent decrease at national level indicating that the level of educational attainment in Assam is lower than all India level although the total literacy rate of Assam was only 1 percent less than national level in 2011. Further, the dropout rates for both boys and girls in Assam for classes I to X have been increasing over the period 2004-05 to 2008-09 where the rate of increase was almost 2 percent for girls as against 3 percent for boys. Moreover, the drop out rates for boys and girls of Assam was more than national level during 2004-05 to 2008-09. But the gap between Assam and India was almost 15 percent for boys as against 11 percent for girls during 2004-05 which rapidly increased to almost 22 percent for boys and 18 percent for girls during 2008-09 indicating again higher incidence of poverty in Assam which compel majority of students to leave school out of necessity.

The District Level Household and Facility Survey, 2007-08 of Assam pointed out some important reasons for dropping out of school as depicted in Table 2.21.

TABLE: 2.21
REASONS FOR DROPPING OUT OF SCHOOL

(Percent distribution of household population aged less than 18 years who dropped out of school by main reasons, Assam, 2007-08)

Reason	Male	Female
School too far	2.7	4.1
Transport not available	1.0	1.7
Further education not necessary	6.8	5.4
Required for household work	17.9	20.7
Required for work on family/ business	4.8	1.8
Required for outside work	19.3	9.9
Cost too much	16.3	21.2
No proper school	0.0	0.4
Not safe to send girls	0.3	1.1
For taking care of siblings	3.9	4.7
Not interested in studies	16.6	10.8
Repeated failures	5.1	5.0
Got married	0.3	7.1
Others	5.0	6.2
Total percent	100.0	100.0

Source: Gender Statistics, Assam, 2008-09, Directorate of Economics & Statistics,
Assam

Among various causes for dropping out from school (below 18 years) as mentioned in Table 2.21, some important causes are necessity to support their parents in household work and outside work, unable to bear cost, disinterested in studies, marriage, necessity to care for siblings and greater distance of school from habitation. Majority of girls dropped out from school as their parents cannot bear the costs related to education reflecting poverty and low

per capita income. The second important reason in engagement in household work due to which almost 21 percent of girls dropped out from schools as against 18 percent for boys in 2007-08 indicating gross neglect of female education in Assam. Again, the mobility of females for work may be less than males in Assam as almost 19 percent of males dropped out from school compared to only 10 percent of females due to requirement of outside work. Moreover, the duty to care for siblings mainly go to the girl child as almost 5 percent of girls dropped out due to this reason as against 4 percent of males. Although the female literacy rate of Assam was almost 2 percent higher than national level in 2011, yet around 11 percent of females were not interested in studies leading to higher school dropout rates. Marriage is another factor for higher school dropout rates in Assam. Almost 7 percent of females dropped out from school due to early marriage (less than 18) as against negligible percentage for boys. Further, 4 percent of females dropped out from school due to greater distance to school as against almost 3 percent of males. It reflects inadequate educational institutions in some selected areas of Assam.

2.15 Basic amenities of life:

The extent to which life of a common man is becoming better can be assessed in terms of availability of basic amenities like safe drinking water, access to health care, access to sanitary facility, availability of pucca houses and decline of underweight children at birth. Such human development indicators are depicted in Table 2.22.

Safe drinking water is direct safeguard against various diseases. It has been observed from Table 2.22 that majority of people in Assam are still deprived from safe drinking water in both the periods 1999 and 2007-08. Although the percentage of people without safe drinking water has been declining over the period 1999 to 2007-08, yet the rate of decrease is very slow. During 1999 to 2007-08, it declined by only 11 percent. It means almost 66 lakh people in Assam are still deprived of safe drinking water in 2007-08 indicating high degree of incidence of several water borne diseases like diarrhea and jaundice. Region wise, the percentage of people deprived from safe drinking water is highest in Upper Assam and lowest in Lower Assam in both 1999 and 2007-08. Although, the percentage of people without safe drinking water has been declining in all the three regions of Assam during the period 1999 to 2007-08, yet the percentage of decline is very slow. It declined by almost 15-17 percent in Lower and Upper Assam as against only 0.58 percent decline in Central Assam. Though the

percentage of people without safe drinking water is lower in Barpeta District than average figure of Assam, it declined by only 9 percent during the period 1999 to 2007-08. It indicates two things. Firstly, high probability of water borne diseases and secondly, limited success of Government sponsored water supply scheme particularly in Central Assam and Upper Assam.

Although mortality rate of Assam has declined to 8.4 per mille in 2008 and life expectancy at birth has increased to almost 59 year in 2002-06, yet about 9 percent of the population is still deprived of health care services in 2007-08. However, the percentage of people without access to health care has been declining over the period 1999 to 2007-08. But, the rate of decline was only 5 percent during the said period indicating greater incidence of communicable and non-communicable diseases which may be an impediment for achieving quality human resource. Region wise the percentage of people without access to health care is highest in Upper Assam and lowest in Lower Assam. In fact, the percentage of population without access to health care was higher in Upper Assam by almost 1 percent and lower in Lower Assam by almost 3 percent than average figure of Assam in 2007-08. The percentage of people without access to health care was almost 8 percent in Central Assam and Barpeta District. All these phenomena indicate that there are small regional variations except for Lower Assam, in providing access to health care in Assam, indicating greater incidence of morbidity even though mortality rate had declined.

Further, the percentage of moderately and severely underweight children at birth is also an indicator of human poverty. It indicates possible number of people suffering from malnutrition and undernourishment. As high as 37.6 percent of children in Assam are underweight at birth in 1999 and 36.4 percent in 2005-06 where the rate of decline is only 1 percent indicating that chronic energy deficiency still persists in many parts of Assam, serious malnutrition and even widespread starvation among pregnant women. Region wise, the percentage of underweight children is highest in Upper Assam and lowest in Lower Assam. The possible reason for higher incidence of underweight children in Upper Assam may be due to poverty particularly among large number of tea garden labourers and two hill districts which are included within Upper Assam in our present study. The percentage of underweight children in Barpeta District is almost 2 percent higher than average figure of Lower Assam as the district has vast *char* areas where incidence of poverty and starvation is higher due to soil erosion and recurrent flood.

Sanitary facility is also a direct safeguard against various diseases. Improved sanitation with proper toilet facilities contributes enormously to human health and well-being especially for women. Although, the percentage of people without access to sanitary facility has been decreasing rapidly in Assam during the period 1999 to 2007-08, yet almost 30 percent of people are being deprived from this facility indicating higher incidence of morbidity especially for women even though average longevity of life has increased over this period. Region wise, the percentage of people without access to sanitary facility is highest in Lower Assam and lowest in Upper Assam. In fact, the percentage of people without access to sanitary facility is less than half in Upper Assam to the average figure of Lower Assam and almost half to average figure of Assam. The possible reason may be the higher literacy rate of Upper Assam which was 78 percent in 2011 in comparison to only 70 percent in Lower Assam and almost 73 percent in Assam as a whole. The percentage of people without access to sanitary facility in Barpeta District is almost 26 percent in 2007-08 as the literacy rate was almost same to the average figure of Assam.

Housing character is an indicator of standard of living influencing the health and efficiency of the individuals. It has been observed from Table 2.22 that more than seventy percent of the people of Assam have no *pucca* houses. Although, the percentage of people without having *pucca* houses has decreased over the period 1999 to 2007-08, yet the rate of decrease is only by 4 percent. It indicates that a significant percent of people in Assam have no *pucca* houses even though average longevity of life increased to almost 59 years and mortality rate declined to 8.6 per mille. Region wise, the percentage of people without *pucca* houses is highest in Central Assam and lowest in Upper Assam. In fact, the percentage difference between Central Assam and Upper Assam is almost 20 in 2007-08. The percentage of people without *pucca* houses in Lower Assam is almost same to the average figure of Assam. The percentage of people without *pucca* houses is almost 4 percent higher in Barpeta District than average figure of Upper Assam in 2007-08. The possible reason for lower percent of people without *pucca* houses in Upper Assam may be due to localization of tea, plywood and oil industries of Assam and availability of higher employment opportunities in non-farm sector. The districts of Lower Assam and Central Assam are mainly agrarian with higher incidence of seasonal and disguised unemployment which may be the possible reason for higher percentage of people without having *pucca* houses in these regions.

TABLE: 2.22

Percentage of people without safe drinking water, without access to health care, sanitary facility, pucca houses and underweight children at birth in Assam

Region / State	% of people without safe drinking water		% of people without access to health care		% of underweight children at birth		% of people without access to sanitary facility		% of people without having pucca houses	
	1999	2007-08	1999	2007-08	1999	2005-06	1999	2007-08	1999	2007-08
Lower Assam	36.21	18.98	12.42	6.29	32.93	N/A	81.13	38.57	82.78	73.65
Central Assam	26.18	25.60	15.48	7.81	36.14	N/A	79.24	34.52	94.02	84.80
Upper Assam	44.97	29.45	17.55	9.93	38.31	N/A	74.28	15.96	77.05	64.02
Barpeta District	26.8	17.6	9.8	7.58	34.6	N/A	85.3	26.10	82.7	77.40
Assam	36.4	25.1	13.7	8.93	37.6	36.4	74.8	30.10	76.9	73.15

Source: a) Assam Human Development Report, 2003

b) District Level Household and Facility Survey, 2007-08, Assam

c) NFHS, 2005-06

2.16 Labour Force Participation:

In economics, labour force is a region's combined civilian workforce, including both the employed and unemployed. Normally, the labour force of a country (or other geographic entity) consists of everyone of working age (typically above a certain age around 14 to 16 years) and below retirement (around 65) that is participating workers i.e. people actually employed or seeking employment. People not counted include students, retired people, stay at home parents, people in prisons or similar institutions, people employed in jobs or professions with unreported income, as well as discouraged workers who cannot find work (Henry, 1971).

The economic and social development of a region depends on the number of persons who are in the labour force, the quality of their work and regularity of their

employment. Thus labour force participation is an indicator of economic status of a social group.

The labour force participation of women as per NSSO data have been depicted in Table 2.23.

TABLE: 2.23
Persons in Labour Force : Assam and India
(in percent)

State / Country	1993 – 94		1999 – 2000		2004 – 05		2005 – 06	
	Male	Female	Male	Female	Male	Female	Male	Female
Assam (Rural)	84.7	26.0	84.1	24.9	83.8	24.4	83.7	24.4
Assam (Urban)	76.8	16.2	78.8	17.6	79.1	18.1	79.1	18.2
India (Rural)	87.6	48.8	85.4	45.6	86.9	38.6	85.6	37.6
India (Urban)	79.9	23.4	78.6	20.9	82.7	24.3	82.5	19.7

Source: The 50th, 55th, 61st and 62nd rounds of NSSO data on Employment and Unemployment Situation in India.

It has been observed from Table 2.23 that the female labour force participation in Assam is at least three times lower than male labour force participation in rural areas and it is almost four times lower than male labour force participation in urban areas during the period 1993-94 to 2005-06. Same picture has been revealed at national level where female labour force participation is more than two times lower than male labour force participation in rural areas and it is almost four times lower in urban areas. Although, male and female labour force participation of Assam is higher in rural areas than urban areas, yet both rural and urban labour force participation of Assam is lower than national level during 1993-94 to 2005-06. It is particularly much lower for rural females. For example, the gap between female labour force participation in rural India and rural Assam was almost 23 percent in 1993-94 which decreased to almost 13 percent in 2005-06. In urban areas such gap was only 7 percent 1993-94 and decreased to only 1.5 percent in 2005-06. However, the labour

force participation of both male and female declined continuously during 1993-94 to 2005-06. But the female labour force participation decreased more rapidly than male labour force. For example, the female labour force participation decreased by almost 2 percent as against only 1 percent decrease of male labour force participation of rural Assam during 1993-94 to 2005-06. However, such rate of decrease of male and female labour force participation of rural Assam was slower than national level. For example, the female labour-force participation in rural India decreased by almost 11 percent as against only 2 percent of male labour-force participation during 1993-94 to 2005-06. Further, the male and female labour force participation in urban Assam increased marginally during the period 1993-94 to 2005-06 as against a decrease at national level. Both male and female labour-force participation in urban Assam was increased by almost 2 percent. But, at national level, the female labour force participation in urban areas decreased by almost 4 percent as against 2 percent increase of male labour force during 1993-94 to 2005-06. Some important things may be highlighted from this discussion. First, male and female labour force participation in both rural and urban areas of Assam is lower than national level indicating large number of dependents in Assam workforce. Among the main reasons for such low participation in work may be less availability of work and lack of adequate irrigational facilities in agriculture. Second feature is the low ratio of females in the workforce. It is observed to be broadly more than half of the male-participation: at times it has been still lower. A large part of the explanation lies in the fact that most of the women are housewives, whose work is not counted as part of productive work on the ground that these are neither working nor looking for jobs. This is in line with the tradition accepted for the calculation of national income, wherein the work performed by housewives is excluded. Third is the higher work-participation rate in the rural areas compared to that in the urban areas. This is applicable to both males and females. This is largely due to the fact that the nature of rural work, largely agriculture, where besides males, females can also participate. As the agricultural activities are mainly male-dominated, the male participation in rural work may be higher than females. In urban areas there are for males/females either full-time jobs or no jobs. Again, females of the category of housewives constitute a large proportion of the females residing in urban areas. Fourth is the decrease of both male and female labour force participation in Assam and India during 1993-94 to 2005-06 in rural and urban areas excluding urban Assam. The possible reason may be the increase in

household income and as income rises, some persons may be willing to work fewer hours explaining backward sloping supply curve of labour.

Table 2.24 depicts labour force participation rate of both males and females across the various regions of Assam based on census data of 1991 and 2001.

TABLE: 2.24
Region wise labour force participation rates of males and females in Assam.

Region / State	1991		2001	
	Male	Female	Male	Female
Lower Assam	48.41	14.87	50.40	16.70
Central Assam	49.08	28.76	51.47	28.19
Upper Assam	47.87	24.79	50.04	24.69
Barpeta District	47.46	10.96	47.69	14.01
Assam	48.38	21.61	50.75	20.79

Source: Census of India, 1991 and 2001.

It has been observed from Table 2.24 that the female labour force participation in almost all the regions of Assam including Barpeta District is less than half of the male labour force participation during 1991-2001. Among the various regions of Assam, the female labour force participation is highest in Central Assam and lowest in Lower Assam. In fact, the female labour force participation of Lower Assam is almost 4 percent lower than average of Assam in 2001. The female labour force participation in Barpeta District is much lower than even the average of Lower Assam. It is only 14 percent in 2001. Although female labour force participation increased in Lower Assam by only 2 percent, it is almost stagnant in Central and Upper Assam during the period 1991-2001. However, the female labour-force participation of Barpeta District increased by only 3 percent during 1991-2001. Thus, it may be noted that female labour force participation is less than male in almost all

the regions of Assam. The possible reasons may be the almost unchanged attitudes towards work outside the house, increase in income of husband and underestimation of household work in various censuses. However, female labour force participation in Central Assam is highest in Assam. The possible reason for high female work participation in Central Assam is that a significant proportion of the population here are immigrant Muslims who mainly live in 'char areas' and poverty is common among them. Literature suggests that poverty is an important factor where women work out of necessity, irrespective of age. Although Barpeta District of Assam also has a significant proportion of immigrant Muslims, yet the female labour force participation is less than average figure of Assam which may be due to increases in family income, and/or lack of diverse employment opportunities. It also implies the presence of a large number of dependents on the workforce.

2.17 Physical well-being:

The forgoing discussion concerning certain demographic parameters such as percentage of population in age group 0-6, sex ratio, infant mortality rate, mean age of female marriage, female literacy rate, percentage of underweight children at birth, percentage of people without safe drinking water, percentage of people without access to health care, percentage of people without access to sanitary facility, percentage of people not having *pucca* houses, female labour force participation including their associated correlates has no doubt thrown light on some aspects of the physical well-being of women in Assam. Considering the nature of the variables selected (positive and negative), a composite test (z-test) is undertaken to ascertain the relative standing of each region of Assam in respect of the physical well-being of women. Here, infant mortality rate, percentage of underweight children at birth etc., are negative parameters, as their higher values exhibit low physical well-being. On the other hand, sex ratio, mean age at marriage, etc., are positive parameters, as their higher values indicate better physical well-being. Therefore, signs of observations of all the negative parameters are reversed to make them compatible with positive parameters while undertaking the composite test (Table 2.25).

TABLE: 2.25

SELECTED INDICATORS OF PHYSICAL WELL-BEING IN ASSAM

Indicators	Lower Assam	Central Assam	Upper Assam	Mean	Standard Deviation
1. Sex Ratio (2011)	957	956	949	954	3.55
2. Percentage of female population in age group 0-6 (2011)	14.66	15.09	14.42	14.72	0.27
3. Infant mortality Rate (2009)	65	66	61	64	2.16
4. Mean age at female marriage (2007-08)	20.08	20.6	21.1	20.59	0.416
5. Female Literacy Rate (2011)	64.12	66.15	71.45	67.24	3.089
6. Percentage of underweight children at birth (1999)	32.93	36.14	38.31	35.79	2.209
7. Percentage of people without safe drinking water (2007-08)	18.98	25.60	29.45	24.67	4.32
8. Percentage of people without health care (2007-08)	6.29	7.81	9.93	8.01	1.49
9. Percentage of people without access to sanitary facility (2007-08)	38.57	34.52	15.96	29.68	9.84
10. Percentage of people not having pacca houses (2007-08)	73.65	84.80	64.02	74.15	8.48
11. Female Labour Force Participation Rate (2001)	16.70	28.19	24.69	23.19	4.80
Composite z test Ranking in terms of physical well-being	-5.38 3 rd	+5.56 1 st	-0.036 2 nd		

It is observed that the central region of Assam has witnessed significant social development in respect of physical well-being of women in Assam and hence ranked 1st with composite value (z) of +5.56. The Upper Assam region has ranked 2nd with composite z value of -0.036. At the other extreme, lack of social and infrastructural development has brought Lower Assam region at the bottom with composite z value of -5.38. It can therefore be concluded that the physical well-being of women in Lower Assam (where Barpeta District falls) is worse off in comparison to the women of Central Assam and Upper Assam.

Conclusion: It has been found from the study that some of the key socio-economic and demographic attributes of rural women in Assam have improved significantly; sex ratio has risen; education levels has improved; life expectancy has risen; mean age at marriage has risen; maternal mortality rate has fallen; economic participation has

increased. But there are areas of darkness too; sex ratio, infant mortality rate, life expectancy, mean age at marriage, maternal mortality rate, school dropout rate³ both at primary and middle schools and economic participation are still less than the national level - although female literacy rate of Assam is marginally higher than national level. Such indicators show lower socio-economic status of rural women of Assam than the national level. Region wise, although sex ratio of Lower Assam is highest, yet literacy rate and economic participation are the least. On the other hand, sex ratio, and literacy rate of Upper Assam are highest although economic participation is lower than average figure of Lower Assam. Infant mortality rate however is also quite high in Upper Assam. Although infant mortality rate of Central Assam is the highest of all the three regions, the sex ratio is only 1 point less than Lower Assam and percentage of female population in the age group 0-6 is the highest. Further, economic participation of Central Assam is the highest with a moderate literacy rate. In spite of this the percentage of underweight children is more than the average figure of Assam. Such attributes show the existence of rural poverty in Assam although Central Assam ranked first with composite value (z) of +5.56 in respect of physical well-being of women population.

Thus the socio-economic and demographic characteristics as outlined above do not seem to reveal a clear picture of the physical well-being of women in Assam. It appears that the factors influencing the different indicators of physical well-being show wide variations across different regions in Assam. Such differential experiences in terms of indicators also show atypical behavioral relations between them. For example, increase in literacy rate is not accompanied by decline in underweight children or decline in infant mortality rate, as is the case of Central Assam.

CHAPTER III

NATURE OF ECONOMIC ACTIVITIES OF RURAL WOMEN IN ASSAM

The study of the nature and characteristics of economic activities, especially for women and their occupational pattern is vital towards understanding the role of women in socio-economic functioning of a region. The work participation rate and occupational composition of women, and prevalent gender disparity in different economic pursuits certainly reveal the economic status of women and the system of social organization in it. In fact, the workforce and the occupational pattern among women population of a region greatly determine the character of its socio-economic progress.

Women's participation in workforce brings in two positive effects in the society- it raises the quality of living and exerts an effective control on family size. Moreover, the entire chain of production functions is also shared directly or indirectly by the women working at home or outside (Guha and Dutta, 1989). Women's economic contribution is immensely significant, although most of their works remain unpaid, unrecognized and undervalued. But in the real sense, without the long hours of work that women put in both outside and inside home, many of the economic activities would have come to a halt. Moreover, generation of productive and gainful employment with decent working conditions is viewed as a crucial strategy for 'inclusive growth' (planning commission'2010). Further it is equally important to make the employment opportunities accessible to all, especially poor and weaker sections of the society. This would require a proper understanding of the nature and characteristics of the existing and emerging labour market situation in Assam so that along with overall employment growth, issues relating to the weaker and disadvantaged groups are adequately addressed in all relevant policies. Thus women's employment status and their contribution need to be viewed in the light of this reality. In consideration of these facts, an analysis of economic characteristics of women population and their nature in the formal sector of Assam as well as Barpeta district based on secondary information particularly the Census data, is taken up in this chapter.

3.01 Women's Work Participation:

Table 3.01 depicts male-female work participation in India and Assam.

Table 3.01:
Male-Female work participation rate in India, Assam and Barpeta District (in percent)

Country/State/District of	1991		2001	
	Male	Female	Male	Female
India	51.61	22.27	51.93	25.67
Assam	48.38	21.61	50.75	20.79
Barpeta district	47.46	10.96	47.69	14.01

Source: i) Census of India, 1991 and 2001

Table 3.0 Female work participation rate (FWPR) of Assam, as is evident from Table 3.0, is less than half of the male work participation rate. Similar feature is also observed in case of female work participation in India in 2001. The table also indicates that work participation rate of female in Assam is less than the national average. Female work participation rate of Barpeta District is still lower by almost 6 percent than average figure of Assam in 2001. Moreover, the female work participation rate of India increased by almost 3 percent as against 1 percent decrease in Assam during 1991-2001. Although the FWPR of Barpeta District increased by almost 3 percent during 1991-2001, it is much less than average figure of Assam. Various reasons may be ascribed for such low work participation of females. Generally women are confined to work at home and seldom work outside because of prejudices and the traditional gender division of labour. Factors like increase in family income and underestimation of various household work performed by female may also responsible for such low FWPR. Additionally, the level of urbanization also has a direct bearing on women's work participation in the areas concerned. Hence, an analysis of women's work participation separately for rural and urban areas of the region would perhaps make the picture clearer.

3.02. Rural-Urban Differential in Female Work Participation:

There is not only low female work participation in Assam, but also there exists rural urban differentials. Table 3.02 depicts male-female work participation in rural and urban areas of Assam and India.

Table 3.02
Male-Female work participation (in percent) in rural and urban areas of
India, Assam and Barpeta District

Country/State/ District of	1991				2001			
	Rural		Urban		Rural		Urban	
	Male	Female	Male	Female	Male	Female	Male	Female
India	52.58	26.79	48.92	9.19	52.36	30.97	50.84	11.54
Assam	43.57	23.17	20.51	7.58	49.76	22.27	51.02	10.29
Barpeta district	48.03	11.47	46.40	4.19	49.10	11.89	47.11	4.68

Source: Census of India, 1991 and 2001

The work participation rate among the urban women is considerably lower than their male counterpart in most parts of Assam as in many other parts of the country. As a matter of fact, in a male dominated agrarian economy of a country like India, the women, particularly in the urban areas, have fewer non-farm job opportunities. Moreover, in a highly segmented as well as segregated labour market in India, women are primarily engaged in informal non-farm activities whereas men flock into the organized employment sector, especially in the urban areas. In rural areas women's workforce participation is higher compared to males because of female engagement both as family labour in their land or as agricultural labourer in other people's land. Such a situation results in the significantly high rural-urban differential in women's work participation in most parts of the country. With work participation rates of females almost 31 percent in the rural areas and almost 12 percent in urban areas according to the 2001 census, Assam, however, occupies relatively a better position than the national average (Rural: around 22 percent, Urban: around 10 percent). In other words, the rural-urban differential of FWPR was almost 12 percent in Assam as against almost 20 percent at national level in 2001. In 1991 also, the rural-urban differential in women work participation in Assam was lower than the country's average. It was almost 15 percent in Assam in comparison to almost 18 percent at national level. Although, rural-urban differential of FWPR in Barpeta District was almost 7 percent in 1991 and 2001, yet the FWPR was almost half of the average figure of Assam. Although FWPR in urban and rural areas of

Assam as well as in India changed during 1991-2001, yet the rate of change was different. For example, the FWPR in rural India increased by almost 4 percent in comparison to almost 1 percent decrease in rural Assam. Further, the FWPR in urban India increased by almost 2 percent in comparison to almost 3 percent increase in Assam. However, the FWPR in rural and urban areas of Barpeta District was almost the same in 1991 and 2001 although female literacy rate increased during this period. High rural-urban differential in FWPR may be due to the fact that the nature of rural works is largely agricultural where females undertake various activities including sowing, winnowing, threshing and other crop harvesting related activities. In urban areas, women with higher educational levels have to compete with men for limited job opportunities. Again, women with lower educational level are often engaged in low paid, semi skilled informal jobs. Again, female of the category of housewives constitute a large proportion of the female residing in urban areas. Early exit of women (probably post marital age) from labour market may be another reason for low FWPR in urban areas where women face inadequate social and family support system. The FWPR in Barpeta District was very low in both rural and urban areas which may be due to lack of diverse employment opportunities and social restrictions on the mobility of females to work outside.

Moreover, there are also high male-female differentials in WPR in both rural and urban areas of Assam as well as in India. The male-female differential of WPR was almost 20 percent in rural Assam and as low as 13 percent in urban Assam in 1991 which rapidly increased to almost 27 percent in rural areas of Assam in 2001 and as high as 41 percent in urban Assam. Such differential in rural India was almost 26 percent and almost 40 percent in urban India in 1991 which decreased to almost 21 percent in rural areas and 39 percent in urban areas in 2001. However, the male-female differential of WPR was higher in Barpeta District than the differential in Assam in both 1991 and 2001. It was almost 36 percent in rural areas and almost 42 percent in urban areas of Barpeta District in 1991 and increased to 37 percent in rural areas and almost 42 percent in urban areas in 2001. Work force participation by women is an important indicator of empowerment and development. Women are generally engaged in household activities such as bearing and rearing of children and in the production of goods and services for household consumption. Therefore, women's work at home remains unrecognized since no monetary value is assigned to such activities. Therefore, the work participation for female against wages is

considered to be economically productive activity since the women can make visible monetary contribution to the household. In recent census, women are considered as workers who make significant contribution in the agricultural operations like sowing, harvesting, transplantation, tending cattle and even cooking and delivering food to the farm during the agricultural operation. Therefore, male-female gap in WPR in rural areas has been lower than urban areas. However, in urban areas, women do not have as much work opportunities and with higher average per capita income in urban areas, women usually withdraw from the labour market. According to Indian census, a place is defined as urban if it satisfied that 75 percent of its male workers are engaged in non-agriculture sector. Therefore, the gap of work force participation rate will be much more for male than female in urban areas, even though women are engaged in productive household activities with no direct financial gain for the household in terms income earned.

3.03. Age-Specific Female Work Participation Rate (ASFWPR)

Age and sex are the two important demographic characteristics. The distribution of female population by age group could improve the understanding of the results on employments.

Table 3.03

Age-Specific Usual Status (Ps+Ss) Female Worker Population Ratio in India & Assam by Area of Residence

(per cent)

India Rural			Assam Rural			India Urban			Assam Urban			India Rural			Assam Rural			India Urban			Assam Urban			
1993-94			1993-94			1993-94			1993-94			2004-05			2004-05			2004-05			2004-05			
P _s	S _s	All	P _s	S _s	All	P _s	S _s	All	P _s	S _s	All	P _s	S _s	All	P _s	S _s	All	P _s	S _s	All	P _s	S _s	All	
0.1	0.1	0.2	0	0	0	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.1	0.4	1.5	0.2	0.2	0.4	0.5	0	0.5	0.9	0	0.9	0.4	0.4	0.8	0.1	0.1	0.2	0.3	0	0	0.2	0	0.2	
8.3	3.4	11.7	3.8	3.0	6.7	3.9	1.2	5.1	2.9	0.4	3.3	3.5	7.0	10.5	3.9	3.1	7.1	4.0	1.2	5.2	2.6	1.1	3.7	
8.0	3.2	11.2	3.1	2.3	6.3	4.7	1.3	6.0	3.1	0.7	3.8	4.7	8.0	12.7	5.4	4.6	9.9	5.8	1.2	7.0	2.6	1.8	4.4	
4.7	1.7	6.4	1.4	1.0	2.3	2.7	1.0	3.1	0.8	0.2	1.0	2.7	4.0	6.7	1.9	1.3	3.2	2.7	0.6	3.3	2.3	0.2	2.5	
1.4	0.4	1.8	0.1	0.1	0.2	0.8	-0.1	0.7	0.3	0	0.3	0.8	1.1	6.9	0.2	0.3	0.5	0.7	0.1	0.8	0.1	0.0	0.1	
23.4	9.4	32.8	8.6	7.3	15.9	12.1	3.4	15.5	7.9	1.3	9.2	12.1	20.5	32.6	11.4	9.5	20.9	13.5	3.1	16.6	7.8	3.1	10.9	

Source: Calculated from NSSO Reports of 50th (Report No. 409, p.487, 490) and 61st (Report No. 515, p.105, 108) Rounds, using population data of that rounds

Table 3.03 throws up many crucial features about age-specific female worker population ratio (ASFWPR) at rural and urban levels during 1993-94 to 2004-05. The major age groups are 15-29 years, 30-44 years and 45-59 years. It shows that in rural India, in all the younger age groups up to 25-29 years, there is a broad downward drift in age-specific FWPRs during 1993-94 to 2004-05 as against marginal increase in Assam, although ASFWPR of Assam is almost 3 percent less than all India level. For major age group 15-29 years, the ASFWPR declined by around 1 percent in rural India during 1993-94 to 2004-05 as against around 0.5 percent increase in Assam. But it is not true for urban females. In urban areas it has declined only up to 10-14 years age group. In rural and urban areas increase in FWPR has been noticed in the 30-44 years. It increased by around 1.5 per cent in rural India and by 1 percent in urban India as against around 4 percent increase in rural Assam and only 0.6 percent increase in urban Assam. In both the rural and urban areas of India no major increase in FWPR has been observed in any age group. But in Assam, the highest increase in FWPR in rural areas took place in the age group of 30-44 years (around 4 percent) during 1993-94 to 2004-05 as against highest increase in urban Assam in the age group 45-59 years i.e. 1.5 percent.

In all the major age groups which are 15-29, 30-34 and 45-59, female WPR at rural India reduced to about half in Principal Status (Ps) and increased doubly in Subsidiary Status (Ss) during 1993-94 to 2004-05. Though in rural India female WPR in post-reform period remained almost same but it is a matter of concern that in rural India in Ps category it reduced to half i.e. from 23.4 percent in 1993-94 to 12.1 percent in 2004-05 and in Subsidiary Status (Ss) category, it increased to more than double i.e. from 9.4 percent in 1993-94 to 20.5 percent in 2004-05. At urban level, FWPR increased by 1.1 percentage point i.e. from 15.5 percent in 1993-94 to 16.6 percent in 2004-05. The total increase at urban level took place in Ps female workers. As against after the age group 15-29 years, in rural Assam FWPR in Ps and Ss categories increased in all the age groups, but relatively more increase took place in Ss category. At urban level again, the rise is in Ss category of female workers. Thus, older persons are entering the labour market in recent times. This may be due to impact of inflation exerting economic pressure on households compelling women of all ages to look for work opportunities outside the home domain. Another social cause is likely to be the breaking up of joint families into nuclear ones building up additional economic pressure.

In 2004-05 in the age group of 5-9 years, no female child worker has been noticed in rural and urban areas of Assam. In other child age group (10-14), the percentage of female child workers also reduced in the state at both the levels. This may be due to increasing awareness levels regarding education, and efforts of many schemes and programmes like mid-day-meal scheme etc. encouraging households to send their children to schools and are thus leaving the labour market.

3.04. Education Specific Female Worker Population Ratio (ESFWPR)

Literacy rate is generally accepted as one of the basic indicators of progress of the population; and educational level of a population is one of the most important determinants of its quality. In a vast country like India, the literacy rate, as well as educational level, exhibits wide variation among different socio-economic categories like region, gender, social group, etc. Since the level of illiteracy in the female population is very high, this is more or less reflected in the educational status of female workers — most of the employed females are illiterate and poor in educational attainment.

The types of education women receive, contribute to their employment. But women are found to be over represented in general education without any skill orientation and professional qualification. It suggests the role of socio-cultural institutions such as families, which mediates micro level decisions regarding education and employment of women with the perceived requirements of marriage. Emerging norms of femininity dictate that women use their education in the interests of marriage to be accomplished wives and better mothers (Osella & Osella, 2000).

For working out education specific female worker population ratios, the females of age 15 years and above are classified into six categories.

It has been observed from Table 3.04 that the ESFWPR in rural areas of Assam increased at all levels of education during 1993-94 to 2004-05 except in graduate and above whereas at national level ESFWPR rate increased up to secondary education level only. On the other hand, in urban areas of Assam the education levels show rise for working women except for middle educated, whereas for India it shows increase in FWPR for all education levels except secondary level and above. Overall ESFWPR in Assam increased by 13.9 percentage points whereas it was almost stagnant at all India level during 1993-94 to 2004-05. The possible reasons may be that 87 percent of Assam population live in rural areas. Literacy rate and education

level is poor in rural areas. For illiterate and lowly literate women it is easy to enter the primary sector. On the other hand, women with higher education prefer to into a profession of her choice rather to sit idle.

Table 3.04
Education Specific Usual Status of Rural and Urban Female Employment in Assam
(age 15 years and above)

(in percent)

Level of Ed.	Rural				Urban			
	1993-94		2004-05		1993-94		2004-05	
	India	Assam	India	Assam	India	Assam	India	Assam
Not literate	54.0	30.4	55.0	27.3	30.0	14.8	30.4	22.3
Literate & up to Primary	41.6	20.8	44.9	35.8	20.3	1.7	23.4	15.7
Middle	29.0	13.1	37.1	36.5	13.1	8.2	16.1	6.8
Secondary	25.8	14.8	30.5	25.4	13.4	12.0	12.3	14.1
Higher Secondary	23.4	13.4	25.2	23.3	14.7	11.6	12.9	11.4
Graduate and above	36.6	44.6	34.5	43.2	30.1	21.4	29.0	30.9
All	48.6	23.9	48.5	31.8	22.3	11.7	22.7	15.4

Source: NSSO Report of 50th (Report No.409) and 61st (Report No.515) Rounds

Educational achievements fail to give any satisfactory explanation for low female employment rate. It is quite surprising that women are more educated than men across all educational categories except diploma and secondary education. In higher education also, women are more represented than men (NSSO 2004-05). But unfortunately women's edge over men in educational achievements is not translated into gainful employment opportunities. Though educational status of women has improved a lot but still they suffer from unemployment almost three times more to men. Thus it can be said that women's education has not played the transformative role generally expected of it. Low levels of female employment and persistence of a gendered work structure have limited women's claims to independent sources of income.

Given the very low employment level of women, high educational achievements attained by them do not seem to change the gender role divisions in the society.

It therefore arises from the available data that rather than labour market conditions, the likely explanation for such high levels of unemployment among educated women are lack of opportunities as well as people's deep-seated beliefs about women's gender role in society.

3.05. Female work participation rate in Main, Marginal Category and non-workers:

The census of India defined main workers as those who had worked for the major part of the year preceding the date of enumeration i.e. those who were engaged in any economically productive activity for 183 days (or six months) or more during a year. Marginal workers were defined as those who had worked any time at all in the year preceding the enumeration but did not work for a major part of the year i.e. those who worked for less than 183 days (or six months). On the other hand, non workers were defined as those who had not worked any time at all in the year preceding the day of enumeration.

Table 3.05 depicts Male-female work participation rate of main, marginal and non-workers in Assam and its three broad regions.

Table 3.05:

Region wise work participation rate of main, marginal and non-workers in Assam (in percent)

Area	Main workers				Marginal workers				Non workers			
	1991		2001		1991		2001		1991		2001	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Lower Assam	48.41	7.79	42.97	7.30	0.45	6.38	5.68	8.64	44.13	83.37	51.30	84.05
Central Assam	49.08	12.88	42.60	10.03	1.19	13.19	9.00	13.74	49.71	73.92	48.39	76.20
Upper Assam	47.87	18.01	41.42	12.28	1.53	6.55	8.88	12.29	50.59	75.43	49.69	75.42
Barpeta District	47.46	4.04	42.91	5.69	0.45	6.92	4.89	8.31	52.08	89.03	52.18	85.98
Assam	48.38	12.56	42.34	9.68	1.06	9.04	7.58	11.11	50.55	78.38	50.06	79.20

Source: Census of India, 1991 and 2001

Table 3.05 reveals that the percentage of both male and female main workers decreased in Assam during the period 1991-2001. But there were huge male-female

gap of main workers. It was almost 30 percent in 1991 which had marginally declined to 29 percent in 2001. It indicates that males were engaged in more assured productive activities than females. Region wise, the percentage of female main workers to the total female population were lower in industrially backward Lower Assam and Barpeta District of Assam in comparison to average figure of Assam in 1991 and 2001. However, the percentage of female main workers to the total female population were higher in Central and Upper Assam in comparison to the average figure of Assam in 1991 and 2001 as because these regions are industrially advanced (particularly tea industries) in comparison to Lower Assam.

As men migrate in search of better paid work, women particularly in rural areas are taking over agricultural work in the villages. They face meager wages, long hours and hazardous work. Figures from the census show that, amongst women, the percentage of "marginal workers" (defined as working for less than 183 days per year) has increased significantly in Assam from about 9 percent in 1991 to about 11 percent in 2001. During the same period, there was a sharp fall in the percentage of "main workers" (more than 183 days a year). The figures thus show a casualisation and feminization of the work force, with the number of marginal women workers growing significantly. Region wise, the percentage of female marginal workers in Central Assam was the highest, although it has remained stagnant at around 13 percent over the period 1991-2001. During the same period, there was a sharp rise in the percentage of female marginal workers by around 6 percent in Upper Assam, and only 2 percent in Lower Assam and Barpeta District. In fact, the percentage of female marginal workers in Upper and Central Assam was more than average figure of Assam in both 1991 and 2001. It indicates not only significant regional variation in female marginal workers, but also possibility of higher incidence of unemployment among females. As marginal work is uncertain and related to irregular income, the significant percent of female marginal workers also indicate poverty and inequality.

Moreover, the percentage of female non-workers was higher than males in both 1991 and 2001. The male-female gap of non-workers was almost 28 percent in Assam in 1991 which marginally increased to 29 percent in 2001. Region wise, the male-female gap of non-workers was the highest in Lower Assam in both 1991 and 2001. It was almost 39 percent in 1991 and 33 percent in 2001. On the other hand, it was lowest in Upper Assam, i.e. around 25 percent in 1991 and 2001. Central Assam recorded around 24 percent male-female gap of non-workers in 1991 and increased to

28 percent in 2001. The male-female gap of non-workers in Barpeta District was almost similar to Central Assam, i.e. around 28 percent. Two important causes may be noted for such high percentage of female non-workers than males. First, most of the household works of females are invisible and such works are not counted during census period and second, majority of females did not work any time at all in the year preceding the date of enumeration either due to income effect or due to social restrictions not to allow females to work outside home.

3.06. Age-group wise Labour by sex in Assam:

Table 3.06 depicts age-group wise percentage of main and marginal workers to the total main and marginal workers in Assam.

Table: 3.06

Age group wise labour by sex in Assam (Percentage to total main and marginal workers)

State/ Country	Age groups years	Main workers				Marginal workers			
		1991		2001		1991		2001	
		Male	Female	Male	Female	Male	Female	Male	Female
Assam	5-14	1.89	3.68	1.63	3.17	12.21	7.24	11.62	6.88
	15-59	89.31	90.82	90.16	91.63	81.47	87.78	82.74	88.80
	Above 60	8.80	5.50	8.10	5.09	6.32	4.98	5.55	4.22
India	5-14	1.93	3.12	1.49	2.99	10.1	7.38	9.19	6.76
	15-59	89.16	89.94	89.98	90.38	81.08	85.80	82.50	86.64
	Above 60	8.91	6.94	8.30	6.39	8.82	6.82	8.05	6.38

Source: Population Census of India, 1991 and 2001

It has been observed from Table 3.06 that the percentage of female main workers to the total main workers of females in Assam were 3.68 and 3.17 percent in the age group 5-14 years in 1991 and 2001 respectively as against only 1.89 and 1.63 percent of males during the same year and same category. Further, the percentage of female main workers to the total main workers of females in Assam were 5.50 and 5.09 percent in the age group above 60 years in 1991 and 2001 respectively as against 8.80 and 8.10 percent of males during the same period. The corresponding figures in India were 3.12 and 2.99 percent of females as against 1.93 and 1.49 percent of males in 1991 and 2001 respectively in the age group 5-14 years. Further, the percentage of female main workers to the total main workers of females in India were 6.94 and 6.39

percent in the age group above 60 years in 1991 and 2001 respectively as against 8.91 and 8.30 percent of males during the same period.

Higher percentage of female main workers in the age group 5-14 years than males in both Assam and India indicates more child labour among females than males. Similarly, significant percent of female main workers in the age group above 60 in both Assam and India indicates poverty where aged people are compelled to work due to economic necessity. It is however satisfactory to note that the percentage of female main workers in the age group 15-59 were higher than males in both Assam and India. The percentage of female main workers to the total female workers in the age group 15-59 years were 90.82 and 91.63 percent in Assam as against 89.31 and 90.16 percent of males in 1991 and 2001 respectively. The corresponding figures in India were 89.94 and 90.38 percent of females as against 89.16 and 89.98 percent of males in 1991 and 2001 respectively.

It has also been observed from Table 3.04 that the percentage of female marginal workers to the total marginal workers of females in Assam were 7.24 and 6.88 percent in the age group 5-14 years in 1991 and 2001 respectively as against 12.21 and 11.62 percent of males during the same period. Further, the percentage of female marginal workers to the total marginal workers of females in Assam were 4.98 and 4.22 percent in the age group above 60 years in 1991 and 2001 respectively as against 6.32 and 5.55 percent of males during the same period. The corresponding figures in India were 7.38 and 6.76 percent of females as against 10.1 and 9.19 percent of males in 1991 and 2001 respectively in the age group 5-14 years. Further, the percentage of female marginal workers to the total marginal workers of females in India were 6.82 and 6.38 percent in the age group above 60 years in 1991 and 2001 respectively as against 8.82 and 8.05 percent of males during the same period. It has been observed that the percentage of female marginal workers to the total female marginal workers were smaller than males in the age group 5-14 and above 60 years in 1991 and 2001 in both Assam and India. But the percentages of female marginal workers were significant. It indicates the same phenomenon of poverty where most of the females are compelled to work either in childhood or old age due to economic necessity. Moreover, the percentage of female marginal workers to the total female marginal workers were higher than males in 1991 and 2001 in the age group 15-59 years in both Assam and India indicating prevalence of more unemployment among females. The percentage of female marginal workers to the total female marginal

workers in the age group 15-59 years were 87.78 and 88.80 percent in Assam in 1991 and 2001 respectively as against 81.47 and 82.74 percent of males during the same period. The corresponding figures in India were 85.80 and 86.64 percent of females in the age group 15-59 years as against 81.08 and 82.50 percent of males in 1991 and 2001 respectively.

3.07. Occupational structure:

The occupational structure among the women workers in a region is indicative of the role played by the women in its economy. This also reflects the degree of economic advancement of a region. The composition of economic activities of workers may be analysed in terms of proportion of workers (male or female) in different categories out of the total main workers, as defined by the census of India. However, for convenience of analysis all the occupational categories are grouped into three major sectors- primary, secondary and tertiary.

Table 3.07 depicts distribution of male/female main workers in primary, secondary and tertiary sectors in India and Assam.

Table 3.07

Distribution of male/female main workers in Primary, secondary and tertiary sectors in Assam and India (in percent)

State/Country	1991						2001					
	Primary		Secondary		Tertiary		Primary		Secondary		Tertiary	
	M	F	M	F	M	F	M	F	M	F	M	F
Assam (Rural)	79.42	90.92	4.14	2.86	16.44	6.22	58.49	60.33	7.93	1.69	31.72	39.80
Assam (Urban)	9.51	12.25	20.30	11.46	70.19	76.29	2.42	3.98	7.15	1.83	88.85	95.74
India (Rural)	80.36	89.80	7.29	5.54	12.35	4.66	69.67	79.85	2.83	5.44	27.49	14.69
India (Urban)	13.26	22.94	31.06	20.97	55.68	52.09	6.4	15.29	3.50	12.93	90.09	71.77
Barpeta district (Rural)	80.12	86.44	3.26	2.90	19.87	10.66	75.0	82.21	2.90	3.65	22.1	14.14
Barpeta dist.(Urban)	8.46	6.43	19.19	10.19	72.35	83.38	6.29	5.18	11.20	6.24	82.51	88.58

Source: a) Census of India, 1991 and 2001

b) Basic statistics of NER, 2002

It has been observed from Table 3.07 that the percentage of female main workers engaged in primary sector was almost 91 percent in 1991 and 60 percent in

2001 in rural Assam. The corresponding figures of males were almost 79 percent in 1991 and around 58 per cent in 2001. Thus, primary occupation singularly provides employment to majority of main workers, though their proportion has been declining. It suggests that there is gradual shift of workers from agricultural to non-agricultural occupations. But it is discouraging to note that the percentage of female main workers engaged in the primary occupations were higher than males. The male-female gap engaged in primary sector was almost 11 percent in 1991 and it was reduced to almost 2 percent in 2001. Of course, the respective proportions among females and males in India as a whole are no less different (Table 3.07). Thus, there is a trend towards the balancing of sex differential, reducing the gap between both sexes from 11 percent in 1991 to 2 percent in 2001 in rural Assam and almost 9 percent in 1991 to 10 percent in 2001 in rural India. Although the male-female gap of main workers engaged in primary sector was less than national level in rural areas of Assam, yet majority of workers are still employed in agricultural activities. As agriculture provides seasonal employment during cropping season, so chances of hidden employment are big. It also indicates that secondary and tertiary sector have failed to generate enough employment opportunities making a pressure on primary sector. Although the percentage of female main workers engaged in primary sector was almost 4 percent lower in rural areas of Barpeta District than average figure of Assam in 1991, it was almost 12 percent higher in 2001. Moreover, the male-female gap of main workers engaged in primary sector increased to almost 7 percent in 2001 as against 6 percent in 1991. Although educated and skill workforce do get employed in secondary and tertiary sector but for unskilled and semi-skilled workers have no alternatives rather than to depend upon primary sector. This fact inhibits the adoption of agricultural innovation in Barpeta District.

The underlying occupational characteristics of the women workers in Assam would be further clear when the analysis is made separately for the rural and urban areas. It is worth mentioning that the share of female workers in the primary occupations in the urban areas of Assam (around 4 percent in 2001) is lower than rural areas (around 6 percent). The pattern in this respect is more or less the same at the national level. It is primarily because of the fact that a large proportion of rural women is economically and educationally backward than urban women. However, occupational diversity may be significantly lower in rural areas, since a larger proportion of both female and male workers is engaged in the primary sector.

In contrast to the high proportion of female workers in the primary sector, only around 2 percent of female main workers are engaged in secondary sector in rural areas as against around 8 percent of males. During 1991-2001, the percentage of female main workers engaged in secondary sector in rural areas not only decreased by almost 1 percent but also the male-female gap has been widened from 1 percent in 1991 to almost 6 percent in 2001. The scenario is deteriorating in urban areas of Assam where the percentage of female main workers engaged in secondary sector decreased rapidly by almost 10 percent during 1991-2001. However, the male-female gap which was almost 9 percent in 1991 decreased to around 5 percent in 2001. Thus, the percentage of main workers engaged in secondary sector decreased for both males and females during 1991-2001, but the proportion of females decreased more sharply than males. The picture is somewhat different at national level, where the percentage of female main workers engaged in secondary sector was almost 3 percent higher in rural areas and almost 9 percent higher in urban areas in 1991 than Assam. Moreover, the percentage of female main workers engaged in secondary sector was almost 3 percent higher in rural areas and almost 9 percent higher in urban areas than males at national level in 2001. Although the percentage of female main workers engaged in secondary sector in rural areas of Barpeta District increased by almost 1 percent during 1991-2001, over the same period it decreased by around 4 percent in urban areas. Moreover, the male-female gap of which was around 1 percent in rural areas in 2001, rapidly widened to around 5 percent in urban areas. Lack of industrial and associated infrastructural development is the primary cause of low percentage share of female workers in secondary sector in Assam, as also at national level. Moreover, Assam is lagging behind in industrialization due to various causes like lack of entrepreneurship, inadequate infrastructural development and lack of capital. Although Assam has several cottage and handloom industries, yet the said industry has been facing stiff competition particularly during the period of economic globalization. Again, the allied activities of the primary sector and development of village industries could not make much headway particularly in Assam in engaging the surplus population from the agricultural sector. All these may lead to growing pressure of population on agricultural sector and resulted in widespread disguised unemployment in rural areas.

However, of particular importance are the changes in occupational structure that have taken place in the 1991-2001 decade in the tertiary sector. Alongside, and

perhaps reflecting the modest rise in per capita income, the shift away from agriculture to tertiary sector is somewhat significant in 2001 compared to 1991 or even earlier. It is so in the sense that just as there is a fall in the share of agriculture, there is an almost an equal rise in the tertiary sector. Or in other words, the fall in the agricultural sector has been largely made up by a rise in the tertiary sector. The manufacturing sector has shown a marginal fall of no significance. For example, the percentage of female main workers engaged in primary sector declined by almost 30 percent during 1991-2001 in rural Assam and such percentage increased by almost 33 percent in tertiary sector during the same period. This means that the change in the occupational structure in 1991-2001 decade signifies rising work in the services sector, rather than in the commodity sector. This perhaps points to the emergence of positive growth forces in the economy. However, there are urban-rural inequalities regarding engagement of male and female workers in tertiary sector. The urban-rural gap of male workers engaged in tertiary sector was almost 54 percent in 1991 in Assam which was marginally increased to 57 percent in 2001. Such gap was more for females which was almost 70 percent in 1991 and was reduced to 56 percent in 2001. In other words, the urban-rural gap of male and female main workers engaged in tertiary sector was almost same in 2001 in Assam. At the national level also the urban-rural gap of male main workers engaged in tertiary sector was almost 43 percent which was marginally higher for female i.e., almost 47 percent in 1991. In 2001, such gap increased to almost 62 percent for males and 57 percent for females. Such urban-rural gap indicates more employment avenues in tertiary sector in urban areas than rural areas. Thus the level of urbanization in true sense is no less an important factor in the increase of female participation in tertiary sector in Assam. However, improvement in female literacy has opened avenues for the females to go for different public and private sector jobs throughout the state.

The percentage of female main workers engaged in tertiary sector in rural areas of Barpeta District of Assam was almost one third to the average figure of Assam. Moreover, there is male-female gap by almost 8 percent in rural areas in 2001. In urban areas, however, the percentage of female main workers engaged in tertiary sector was almost 6 times more than rural areas. The considerably lower proportion of female workers in the tertiary sector of rural areas of Barpeta District may be attributed to the dominance of farm activities and backward infrastructural facilities than Assam as a whole.

The occupational structure of Assam and India discussed above reflects that a substantial proportion of rural work force is engaged in primary sector and a very small proportion has been found to be engaged in secondary and tertiary sectors. Moreover, there are also male-female and urban-rural differentials. But, still agriculture remains the major economic activity of a very large proportion of the working population.

3.08. Distribution of main workers by Industrial categories:

Table 3.08 depicts distribution of main workers by industrial categories in Assam, Barpeta district and India.

Table 3.08
Distribution of female main workers by industrial categories (in percent)

Country/State/ District	Categories	1991		2001	
		Male	Female	Male	Female
India	i) Cultivators	38.40	34.22	31.33	32.50
	ii) Agricultural Labourers	26.40	44.93	20.82	39.42
	iii) Livestock, Forestry, Fishery, Hunting and plantations, orchards and allied activities	1.90	1.60	-	-
	iv) Mining and quarrying	0.60	0.34	-	-
	v) Household industry	-	-	3.01	6.36
	vi) Other workers	-	-	44.82	21.70
Assam	i) Cultivators	50.89	50.93	45.03	40.42
	ii) Agri labourer	12.10	12.01	14.23	16.48
	iii) Livestock, Forestry, Fishery, hunting and plantations, orchards and allied activities	7.41	23.44	-	-
	iv) Mining and quarrying	0.58	0.10	-	-
	v) Household Industry	-	-	2.28	7.89
	vi) Other workers	-	-	38.91	35.20
Barpeta district	i) Cultivators	59.55	43.63	48.35	30.86
	ii) Agri. Labouers	15.66	28.55	16.64	19.24
	iii) Livestock, Forestry etc.	8.13	14.21	-	-
	iv) Mining & Quarring	0.48	0.09	-	-
	v) Household Industry	-	-	2.90	15.04
	vi) Other workers	-	-	32.11	34.84

Source: Census of India, 1991 and 2001

The working population of Assam and India has been grouped into six occupational classes (Table 3.08). Changes in occupational structure may throw some

light in the understanding of the economy. Cultivation singularly provides employment to more than three-fourths of the workers both for males and females, though their (cultivators and agricultural labourers) proportions have been declining during 1991-2001. It suggests that there is gradual shift of workers from agricultural to non-agricultural occupations. But this is not the case. In fact workers have been grouped into two broad groups, viz. main workers marginal workers; and occupational classifications of only main workers is available in 1991 and 2001. Most of the marginal workers are seasonally engaged as agricultural labourers, but have been excluded from the class of workers. This exclusion may reduce the size of agricultural labourers.

It has been observed from Table 3.08 that the percentage of female cultivators to the main workers was not only higher than males in India, by almost 1 percent in 2001, but also declined very slowly during the period 1991-2001. During this decade, the percentage of male cultivators at national level declined by almost 7 percent as against around 2 percent of females. In Assam, however, the percentage of male and female cultivators was almost same i.e. around 50 percent in 1991 which declined by around 10 percent for females in 2001 as against around 5 percent for males. Almost same phenomenon has been observed in Barpeta District where the percentage of female cultivators declined by around 13 percent as against 11 percent of males during the decade 1991-2001. But still, majority of female main workers are cultivators. Although transplanting and harvesting is mainly done by female workers, yet they are not allowed to participate in ploughing and some other selected farm activities. This may be the possible reason for higher proportion of male main workers engaged as cultivators than females in Assam and Barpeta District. Further, majority of females are still denied for land title, though few instances are found for transfer of land ownership to females with a view to escape the land ceiling laws. This may be one of the important reasons for increase in the percentage of female agricultural labourers in Assam during 1991-2001. It has been observed from Table 3.06 that the percentage of female agricultural labourers increased in Assam by almost 4 percent during 1991-2001 as against 5 percent decline at national level during the same period. However, the percentage of female main workers engaged as agricultural labourers declined by 9 percent in Barpeta District during 1991-2001 with a high proportion of female workers in household industry and other workers group than average figure of Assam. Nevertheless, almost half of the active female man power of

Barpeta District and more than half of Assam are used in agricultural activities, which mirror the backwardness and primitive culture of the region. Such community, called a closed economy, emphasizes on individual or household self sufficiency and causes so high proportion of agricultural workers.

As mentioned earlier, there is a gradual shift of workers from agricultural to non-agricultural sectors. Consequently, percentage of female main workers engaged in household industry was almost 1 percent more in Assam for both males and females than national average. In Barpeta District, however, the percentage of female main workers engaged in household industry was almost two times than average figure of Assam. The possible reason for such higher percentage of female workers engaged in household industry may be the relatively strong base of handloom and weaving. However, weaving has not been adopted as commercial activities and the women engaged in weaving operations may also be engaged in farm activities. Moreover, other types of artifact like pottery; jewellery works etc. are associated with a certain community. Thus, it is caste structure which often determines the occupational structure of population.

Bulk of the employment in Assam and Barpeta District is concentrated in the agriculture sector. In rural areas, agriculture constitutes up to 58 percent of the total rural employment. Approximately 60 percent female workers and 58 percent male workers in rural areas of Assam are engaged in agriculture as against 75 percent of male workers and 82 percent of female workers of Barpeta District. Obviously, most of the workers engaged in agriculture are highly under-employed with very low levels of return. Diversification of the rural workforce to non-agriculture activities has been very low and the same has been negligible in case of the rural women workforce. Despite slow diversification process from farm to non-farm activities, the agriculture sector has reflected enough dynamism in recent years. Although diversification of the female workforce to non-farm activities in rural areas has been limited up to 6 to 7 percent since 1991, the same in case of male workers has been to the extent of 16 to 17 percent during the same period. Most of this diversification to the rural non-farm activities has taken place in sectors such as construction, transport and food processing industries. Retail trade has also contributed to rural workforce diversification. However, despite all these positive reflections, diversification of the female workforce has been limited.

3.09. Participation of women in organized sector:

Although a significant proportion of female population of Assam is engaged in the unorganized primary sector, the participation of women in the organised sector is almost double than national average.

Table 3.09
Share of women employment out of total employment in organized sector in Assam (Percent of women)

Year	State/Country	Public Sector	Private Sector	Total
2001	Assam	14.3	47.3	32.0
	India	14.9	24.2	17.8
2004	Assam	14.7	44.7	30.0
	India	15.9	24.8	18.7
2008	Assam	16.2	48.0	32.5
	India	16.5	24.1	19.1

Source: Directorate of Employment and Craftsmen Training, Assam

It has been observed from Table 3.09 that women constitute around 32 percent in all organised sector workers, as opposed to only 19 percent for all India in same sector. However, majority of female workers are engaged in private sector. In fact, almost 48 percent of female workers are engaged in organised private sector in Assam which is more than double to the national average. The percentage of women engaged in public sector in Assam is almost same to the national figure. However, this trend of women's employment is only a 'feel good factor', euphoria for the women of Assam. The reality speaks a different language: the vast majorities of women engaged in the organised private sector are employed by the Tea Industry which is one of the largest organised sectors in Assam, either as permanent or temporary / casual labourers, and are a marginalized section of Assamese society.

An important aspect of quality of female employment in Assam is predominance of the unorganized sector. Over the years, organised sector employment has grown slowly (less than one percent during 2001-08) reflecting the faster growth of employment in the unorganized sector. As a result, there has been increasing informalization of employment over the years. As a whole, about 67 percent of female employment is in the unorganized sector in Assam. In urban areas, the percentage of unorganized sector workers is close to 55-60 percent.

A large proportion of the workers engaged in the urban unorganized sector is migrants from rural areas with poor educational, training and skill background and are employed in low-paying, semi-skilled or unskilled jobs. The productivity and earning levels in most of the enterprises are low and do not often provide full time work to those engaged. For the employees, the working environment is not conducive, working hours are long and most of the conditions of decent employment (e.g. paid leave, pension, bonus, medical support and health insurance, maternity leave benefits, compensation against accident, etc) are nearly non-existent.

As per findings of the 5th Economic Census, out of the 2208169 persons engaged in the unorganized sector, 1442854 persons were in rural establishment and 765315 persons were in urban establishments (Table 3.10).

Table 3.10
Number of Employment in Establishments

Sl. No.	Item	Rural	Urban	Combined
1 All Establishments:				
1.1	Total Employment	1442854 (44.9)	765315 (57.1)	2208169 (49.1)
1.1.1.	Female	189006 (70.8)	68019 (82.3)	257025 (73.9)
1.1.2	Children (Male)	24752 (62.4)	8152 (90.8)	32904 (69.4)
1.1.3	Children (Female)	3388 (57.5)	660 (81.1)	4048 (61.3)
1.2 Agricultural Activity		80017	6131	86148
1.2.1	Female	14168	959	15127
1.2.2	Children (Male)	3524	236	3760
1.2.3	Children (Female)	350	8	358
1.3 Non-Agricultural Activity		1362837	759184	2122021
1.3.1	Female	174838	67060	241898
1.3.2	Children (Male)	21228	7916	29144
1.3.3	Children (Female)	3038	652	3960

Source: Fifth Economic Census, Assam, 2005

Table 3.11
Percentage of Persons Usually Working in Establishment with At least One Hired Worker by
Major Activity in Assam

Activity	Rural		Urban		Combined	
	Female	Total	Female	Total	Female	Total
Agricultural	2.52	2.80	0.80	0.56	2.00	1.87
Mining & Quarrying	0.28	0.36	0.13	0.08	0.23	0.24
Manufacturing	33.72	26.10	20.54	15.89	29.79	21.85
Electricity, Gas & Water Supply	0.05	0.43	0.22	0.30	0.10	0.38
Construction	0.12	0.72	0.45	1.73	0.22	1.14
Sale, Maintenance & Repair M/V & M/C	0.09	0.91	0.42	3.28	0.19	1.89
Wholesale Trade	0.30	0.80	1.04	4.03	0.52	2.14
Retail Trade	5.77	15.66	8.05	28.17	6.45	20.86
Hotels & Restaurants	3.02	6.00	4.54	7.28	3.48	6.53
Transport & Storage	0.38	2.08	0.76	3.26	0.49	2.57
Posts & Telecommunications	0.46	0.93	2.65	1.87	1.11	1.32
Financial Intermediation	0.35	0.62	2.70	2.27	1.05	1.31
Real Estate, Renting & Business Services	0.62	1.21	1.65	2.88	0.93	1.90
Pub. Admin. & Defenses, Compulsory Social Security	2.56	4.84	14.38	13.75	6.09	8.54
Education	36.79	25.32	28.62	7.68	34.35	17.99
Health & Social Work	10.38	3.75	9.77	3.06	10.20	3.46
Other community, Social & Personal Service activities	2.60	7.47	3.28	3.91	2.80	5.99
Other Activities	0.00	0.00	0.00	0.00	0.00	0.00
All (Agricultural & Non-Agricultural)	100.00	100.00	100.00	100.00	100.00	100.00

Source: Fifth Economic Census' 2005, Assam

Out of the total workers, around 45 percent workers were found to be working in the establishments operating in rural areas and 57 percent in the urban areas. While adult female workers account for around 12 percent of the total persons employed, rural adult female workers constitute around 74 percent of the total adult female working force. The adult female participation rate is around 9 percent compared to male worker. The census report also indicated that 36952 (1.67 percent of the total

worker) child workers were also engaged in various establishments out of which 4048 were female.

It is evident from the 5th Economic Census results that 49.1 percent of the total workers were engaged as hired workers of which rural/urban divide was 44.9 percent and 57.1 percent respectively. In respect of hired worker pertaining to total adult female and children, this percentage was 73.9 percent and 68.5 percent respectively. It is interesting to note that child labour were engaged both in agricultural and non-agricultural activities. Around 94 percent of total male child labour is engaged in agricultural activities in rural areas which was around 98 percent for females. In non-agricultural activities engagement of male child labour was around 73 percent in rural areas to the total male child labour as against only 27 percent in urban areas. On the other hand, 77 percent of female child labour was engaged in non-agricultural activities to the total female child labour in rural areas in comparison to 16 percent in urban areas. Such phenomenon indicates rural poverty in Assam.

There is evidence that though male child labour is decreasing, female child labour might be on the rise though the inclusion of domestic help and duties in some studies might have inflated such estimates. This is mainly attributed to rising female poverty due to stagnation in agriculture and the marginalization of female workers in manufacturing sectors, both of which are forcing more women and children into the informal sector.

3.10. Employment and unemployment position of women:

Unemployment is a chronic problem almost common to each and every economics of the world. The problem of growing unemployment continues to a matter of great concern for Assam. In spite of having huge natural resources, the state's economy still largely remains backward and underdeveloped as these natural resources have not yet been thoroughly exploited. Against the back-drop of increasing poverty, slow pace of economic development and very high rate of population growth, the unemployment problem among women has assumed chronic and complex character of Assam.

Although the magnitude of unemployment in Assam is not precisely known, we can have an idea about the trend and dimension of the problem from the number of job seekers registered with the employment exchanges as depicted in Table 3.12

Table 3.12:

Employment position of women as per employment exchange in Assam

Year	Percentage share of women to the total Registration	Percentage share of women to the total placement	Percentage of women without placement
1	2	3	4
2004	27.75	5.53	22.22
2005	29.81	5.41	24.4
2006	31.33	13.43	17.9
2007	30.64	14.07	16.57
2008	30.38	14.33	16.05

Source: Directorate of Employment and Craftsmen Training, Assam

The table given above reveals that the percentage share of female job seekers registered with employment exchanges which were around 28 percent in 2004 increased sharply to around 31 percent in 2006 and marginally fell down to around 30 percent in 2008. The increase in the number of job seekers in 2008 was thus almost 3 percent over 2004. The percentage share of women to the total placement gradually increased by around 9 percent and as a result percentage of women without placement declined slowly by around 6 percent during 2004-08. Nevertheless, almost half of the women registered in employment exchanges are remain without placement. This is an indication of the mass unemployment problem of Assam in recent years. The unemployment statistics reflect only the trend and not the totality of employment and underemployment as all unemployed do not and cannot register themselves with the employment exchanges, which are mostly located in the urban areas.

Besides, there is a huge extent of under-employment or disguised unemployment existing in the rural areas of the state, which is putting a heavy pressure on the rural economy of the state. The enormity of the problem can be appreciated from the fact that nearly 36 percent of the total population of Assam continues to live below the poverty line, a figure quite above the national average of 26 percent. Importantly, the percentage of people living below the poverty line in Assam is highest among the seven states of the North East India. Arguably, poverty has a women's face – out of every ten poorest persons of the world, six are women. It is this said context, it can be said that the women of Assam who bear this brunt of poverty and unemployment.

The employment-unemployment survey conducted by the NSSO in various rounds gives a glimpse on various characteristics of employment and unemployment situation in the country as well as in the states.

Table 3.13

Number of persons employed per 1000 persons according to usual status in Assam.

NSSO	Rural		Urban	
	Male	Female	Male	Female
50 th Round (1993-94)	516	161	528	93
55 th Round (1999-2000)	506	87	507	97
60 th Round (Jan 2004-05)	527	86	528	79
61 st Round (July 2004-June 2005)	551	209	551	109
64 th Round (July 2007 to June, 2008)	548	289	554	138

Source: National Sample Survey Organisation

It has been observed from Table 3.13 that the percentage of female employment in rural Assam according to usual status was around 16 in NSSO's 50th round which was sharply decreased to around 8.6 percent in 60th round as the state continues to be marked by low agricultural productivity, poor infrastructure, weak communications and nascent levels of industrial activity during this period. With political normalcy restored since the past few years and improvements in the state's exchequer, investments and developmental interventions have experienced improvements. This may be the possible reason for sharp increase of female employment in rural Assam to around 21 percent of NSSO's 61st round and around 29 percent in 64th Round. The same phenomenon has been revealed in urban areas where the percentage of female employment per 1000 persons was around 9 in NSSO's 50th Round which was decreased to around 7.9 percent in 60th round and suddenly jumped to around 14 percent in 64th round. Moreover, the rural-urban differentials of number of persons per 1000 persons according to usual status in Assam was almost negligible for males in NSSO's 55th, 60th, 64th round. However, such differentials are significant for females. It was only 68 (or 27 percent) in NSSO's 50th round which was sharply increased to 138 (or 35 percent) in NSSO's 64th round indicating high degree of unemployment problem in urban areas than rural areas as

majority of rural women employ in farm activities and urban women prefer to engage in household activities or without works due to their higher income effect.

NSSO's 61st (2004-05) gives the sectoral composition of the labour market (Table 3.14).

Table 3.14
Per 1000 distribution of Usually Working Persons in the Principal Status and Subsidiary Status taken together by Broad Industry Division (NIC 1998)

	Broad Industry Categories										
	Agriculture, etc.	Mining & quarrying	Manufacturing	Electricity, water, etc.	Construction	Trade, hotel & restaurant	Transport, etc.	Other Services			All
								Public Administration	Education	Community Services	
NIC-98 divisions	(01 – 05)	(10 – 14)	(15 – 37)	(40 – 41)	(45)	(50 – 55)	(60 – 64)	(65 – 74)	(75 – 99)	(01 – 99)	
Rural											
Assam	696	3	29	2	30	116	32	2	88	1000	
All-India	665	6	79	2	68	83	38	7	52	1000	
Urban											
Assam	883	0	37	0	8	11	2	1	57	1000	
All-India	833	3	84	0	15	25	2	1	38	1000	

Source: NSSO 61st Round: 2004-05

It has been observed from Table 3.14 that the labour force participation in the agricultural sector was highest with about 70 percent followed by 11 percent in Trade, Hotel and Restaurant and 9 percent in Public Administration, Education and Community services in the rural areas of Assam as against about 66 percent in agriculture, 8 percent in Trade, Hotel and Restaurant and 5 percent in Public Administration, Education and Community services at all India level. An overwhelming 88 percent (in urban areas) are engaged in the agro-based industries followed by only 5.7 percent in Public Administration, Education and Community services in urban Assam. A vast potential of Trade, Hotel & Restaurant has been explored by only 1 percent of the workforce. This may call for a large scale occupational mobilization through sectoral shifts from mainly the primary sector to other sectors which have potential for employment growth.

Table 3.15 depicts unemployment rates among males and females in rural and urban areas of Assam.

Table: 3.15
Unemployment Rates (in percent) for Assam and India

State/Country	Year	Rural		Urban	
		Male	Female	Male	Female
Assam	1995-96	1.9	2.6	5.8	8.4
	2000-01	2.3	2.8	6.2	8.8
	2004-05	2.4	3.1	6.9	9.1
India	1995-96	1.2	1.1	2.8	5.4
	2000-01	1.7	1.9	3.2	6.2
	2004-05	1.6	1.8	3.8	6.9

Source: a) Directorate of Employment and Craftsman Training, Assam
b) Statistics on Women in India, 2007

As agriculture is the predominant sector in rural areas, therefore, unemployment rate for both males and females in rural areas were less than urban areas during 1995-96 to 2004-05 in Assam as well as in India. The rural-urban differential of female unemployment rates was almost 6 percent in Assam during 1995-96 and was more or less same in 2004-05. However, such rural-urban differential was only 4 percent in 1995-96 and marginally increased to around 5 percent at national level during 2004-05. It indicates that the unemployment rates among urban women was not only more than rural women but also higher than national level. Moreover, the male-female differential of unemployment rates is also significant in Assam in both rural and urban areas. The unemployment rates of rural women which were around 1 percent more than males in Assam in 1995-96 remained same during 2004-05. But for urban women the male-female gap of unemployment rate was around 3 percent in 1995-96 and around 2 percent in 2004-05. In contrast to the urban areas, the male-female gap of rural unemployment rate was almost negligible during 1995-96 to 2004-05. But such male-female gap was almost 3 percent at national level during the same period. The low male-female gap of unemployment rate in rural areas of Assam may be due to rural poverty and existence of child labour. Another crucial issue relates to the sharp increase in urban unemployment for females. Analysis of unemployment data for the year 2004-05 reveals that unemployment rates are very high for females than males. It was around 9 percent for females as against almost 7 percent for males as there is a tendency of

early exit of women (probably after marriage) from labour market particularly in urban areas may be due to inadequate social and family support system.

A clear picture of the worker in different age group level can be seen from the Table 3.16.

Table 3.16

Age Specific Usual Worker (Principal & Subsidiary status taken together) for Assam and India

	Age Groups (in years)												
	05-09	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60 & above	All (0+)
Assam - Rural	2	36	332	529	630	663	743	708	740	676	624	425	391
All-India Rural	3	71	415	623	733	769	812	809	808	769	720	448	439
Assam - Urban	2	17	180	335	442	578	632	654	703	579	557	166	336
All-India - Urban	3	41	241	458	586	633	658	661	638	616	532	228	365

Source: NSSO 61st Round: 2004-05

It has been observed from Table 3.16 that the Workers Population Ratio (WPR) of Assam is lower than the national average at all age group level both in rural and urban areas. While at the younger age (below 14) lower WPR is a good sign for Assam, yet about 5 percent of the population in rural areas and about 3 percent in urban areas of the population of the age below 14 years are workers, which indicates existence of child labour in the society.

Figure 1: Showing trends in age specific workforce participation Assam- India (Rural)

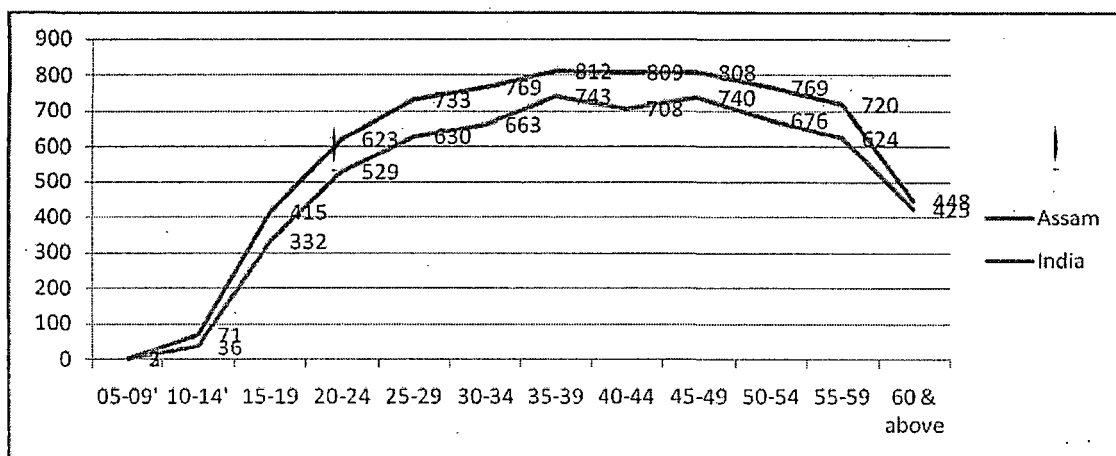
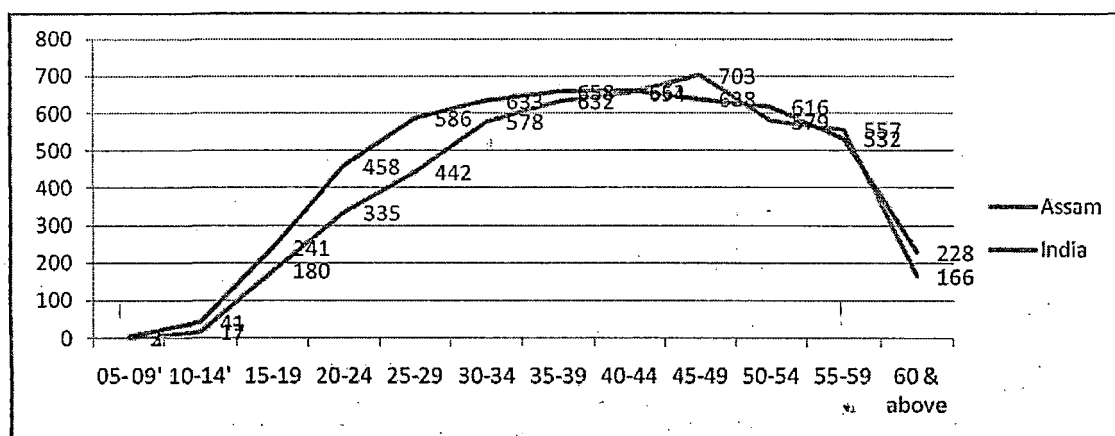


Figure 2: Showing trends in age specific workforce participation Assam- India (Urban)



3.11. Mode of Female Employment

The distribution of workers by category of employment i.e., self-employment, casual wage employment and regular salaried, reveals the nature of the employment problem. The proportion of self-employed in the workforce of Assam as well as in India constitutes the single largest share. This section of the workforce does not operate in the labour market for wages or earnings, but earn profits out of their own enterprises. A small proportion of them are exclusively employers, while a large section of them work as owners/employers cum workers. Further, an overwhelming proportion of these self-employed workers are small and petty business holders, including small and marginal farmers, and many a time, their earning levels are as low as those of casual workers. A large section of the self-employed persons resort to casual labour work in order to supplement household income (Bhalla, Karan and Shobha, 2006). Needless to say, the level of earnings of most of the self-employed workers in the organised sector is much higher than those in the unorganized sector.

The most dismal stage of affairs in the female labour market of Assam can be located in the category of casual wage labourers while their work contract is terminated and renewed on a daily basis. Poor working conditions and low wages yield them only poverty. Casual wage labour is not a homogenous group of workers. Urban casual labourers are better placed in comparison to their rural counterparts because of better job opportunities in the urban informal sector. In rural areas, casual workers are engaged largely in agriculture at subsistence wages. The casualisation of

work-force has implication for the status of industrial relations in the state as well as the country and is a direct result of the changing corporate strategies in the era of globalization where firms have adopted employment practices which encourage employment of casual work-force. But what the data show, is the reduction in the percentage share of casual female workers during post-reform period. (1993-94 to 2004-05)

Table 3.17

Mode of Employment of Usual Status Female Workers in Assam & India (percent)

Mode of Employment	India Rural		Assam Rural		India Urban		Assam Urban	
	1993-94	2004-05	1993-94	2004-05	1993-94	2004-05	1993-94	2004-05
Self-employed	19.2	20.8	7.8	14.7	6.9	7.9	2.6	2.9
Regular	0.9	1.2	2.9	1.8	4.5	5.9	4.6	5.9
Casual	12.7	10.6	5.2	4.5	4.1	2.8	2.0	2.1
Total WPR	32.8	32.6	15.9	20.9	15.5	16.6	9.2	10.9
Index of casualisation	1411	883	179	250	91	47	43	33

Source: Calculated from the Report No. 409 of 50th Round and 515 of 61st Round of NSS

**Note: Index of casualisation shows the number of casual wage earners for every one-hundred of regular salaried jobs.*

$$\text{Index of casualisation} = \frac{\text{Casual Workers}}{100 \text{ Regular Workers}} \times 100$$

Table 3.17 shows the changing mode of female employment during 1993-94 to 2004-05. It is at once clear that in both the areas of Assam and India, the percentage of self-employed and regular employed increased in post-reform period except around 1 percent decrease of regular employed in rural Assam. For self-employed, it increased by around 2 percent at rural level and around 1 percent at urban level in India during 1993-94 to 2004-05 as against around 7 percent increase in rural Assam and around 1 percent increase in urban Assam. In fact, the rate of increase in urban Assam is almost similar to the national level. But the rate of increase of self employed in rural Assam was 5 percent more than national level during 1993-94 to 2004-05. The increase in percentage of regular female workers is higher in urban areas both in Assam and India. In urban Assam and India the regular employed workers were increased by almost 1 percent during 1993-94 to 2004-05 as against around 1 percent decrease in rural Assam and negligible increase in rural India.

The index of casualisation shows the number of casual wage earners for every one hundred of regular salaried employees. It is explicit from the Table 3.17 that over the period, casualisation of female workers declined in India but at rural level the incidence of casualisation is much higher to urban areas. But most dismal state of affairs in the female labour market is that the index of casualisation in the rural areas of Assam increased by around 16 percent during 1993-94 to 2004-05 as against 13 percent decrease in urban Assam during the same period. The marked rural-urban difference in terms of percentage of female workers engaged as casual wage earners at once clear a large number of disadvantages like low wage rates, uncertain employment, and irregularity of rural female workers.

Among these three broad segments of the labour market, regular job markets particularly in the organised sector, have strong and strict entry barriers based on various pre-qualifications of the labour-force. In contrast, a large proportion of the self-employed and casual work-force keeps oscillating between the two, depending on the job availability in these two markets. In casual worker category, the percentage of female workers in Assam declined from 5.2 percent in 1993-94 to 4.5 percent in 2004-05 at rural level and remained stagnant around 2 percent at urban level for the said period.

Self-employment is relatively predominant form of employment, accounting for more than half of the female workforce, while only 10 per cent of the working women have regular salaried employment (NSSO, 2007). Further, self-employment provides an opportunity to express one's creative instincts, initiative, and innovative capabilities, and is therefore a potentially more productive form of employment. This form of employment has, thus, a greater impact on women's empowerment.

Data show that the extent of casualisation of female workers in both the rural and urban areas declined during 1993-94 to 2004-05. In rural areas, female workers are shifting mainly to be self employed and in urban India towards regular employment. It can be argued that the current system of subcontracting of work in the urban economy is such that the female workers are no longer reported in the self employed category. They are getting work-whatever may be the wage rate-on a more regular basis.

3.12. Educated Unemployment:

The most alarming feature of the state is the growing unemployment problem. The job-seekers specially educated job-seekers are increasing day by day as depicted in Table 3.13. From the record of the Live Register of Employment Exchanges, the registered educated job seekers stood at 1520310 during 2009, recorded an increase of 13 per cent over 2008. The percentage of educated job seekers to total job seekers was 73 percent approximately, and out of the educated job seekers 46 percent was H.S.L.C. passed, 30 percent was H.S.S.L.C. passed, 2 percent was Graduate and the rest consist of Technical Graduate (Engineering, Medical, Agriculture and Veterinary etc.) and Post-Graduate job seekers. The registration of job seekers in the Live Register of Employment Exchanges in 2008 has increased by 11.61 per cent over the previous year which is a matter of concern in the context of socio-economic profile of the state. The detail distribution of the educated job seekers is shown in Table-3.18.

Table 3.18
Distribution of Educated Job-Seekers

	Level of Education	Registration		Percentage increase in Registration	Placement		Numbers in live register	
		2008	2009		2008	2009	2008	2009
1	Engineering Graduate	237	271	14.35	27	18	2978	3007
2	Medical Graduate	159	165	3.77	19	6	617	721
3	Agriculture Graduate	175	186	6.29	17	10	1127	1231
4	Veterinary Graduate	63	69	9.52	10	7	492	543
5	Passed out ITI Trainees	—	—	—	—	—	—	—
	a) Engineering Trade	1011	1317	30.46	35	60	17132	17233
	b) Non-Engineering Trade	623	751	20.55	21	10	4015	4090
6	Post Graduate	4287	4780	11.50	43	29	23293	24946
7	Graduates	22493	28598	27.14	52	148	231529	299402
8	H.S.S.L.C.	38121	39999	4.93	45	109	392558	452537
9	H.S.L.C.	66157	78005	17.91	82	64	667329	700518
10	Diploma Holders (Eng.)	283	293	3.53	23	25	6012	11609
11	Others	492	563	14.43	59	15	4429	4473
	Total	134101	154999	15.58	4333	501	1351511	1520310

Source: Directorate of Employment and Craftsmen Training, Assam

The distribution of job-seekers according to their skill level shows that a vast majority of the unemployed youths who have registered their names in the Employment Exchanges (about 80 percent) are unskilled. The placement opportunity of this group is also negligible. The status of job-seekers registered with the Employment Exchange has been depicted in Table 3.19.

Table 3.19

Distribution of Educated Job Seekers as per the Live Register of Employment Exchange

Skilled/ unskilled	Registration		Percentage increase/ decrease in registration	Placement		Numbers in live register	
	2007	2008		2007	2008	2007	2008
1	2	3	4	5	6	7	8
Skilled job-seekers	24908	29823	19.7 Inc.	208	306	272678	291624
Unskilled job-seekers	95246	104278	9.5 Inc.	91	127	1026688	1059887
Total	120154	134101	11.6 Inc.	299	433	1299366	1351511

Source: Employment Exchange, Assam 2007-08

It has been observed from Table 3.19 that the overwhelming majority of the workforce does not possess any identifiable marketable skills. Most of the job seekers (about 80 percent) in Employment Exchanges are without any professional skills, indicating low level of skill development in Assam.

Table 3.20

Job Seekers Registered With Employment Exchanges in India (by sex)

Area	No. of live register as at the end of the year								
	2004			2005			2006		
	Male	Female	Person	Male	Female	Person	Male	Female	Person
Assam	1289.0	343.0	1632.0	1364.9	395.9	1760.8	1420.1	423.1	1843.2
India	29746.1	10711.6	40457.7	28742.2	10605.6	39347.8	29885.0	11731.0	41616.0

Source: Selected Socio-Economic Statistics India, 2008

It has been observed from Table 3.20 that female job seekers registered with Employment Exchanges was around 21 percent as against 79 percent of males in 2004. It increased to 23 percent for females in 2006 as against decrease of male job seekers to 77 percent during the same period. This shows that the percentage of

female job seekers registered with Employment Exchanges was far lower than males, although almost half of the total population is female.

It may however be mentioned here that Employment Exchange's data no doubt provide an idea about the dimension of the problem but it has got some limitations so far as the coverage of total unemployed persons of the State is concerned. It is a fact that all unemployed persons of the State are not registered with the Employment Exchanges due to various reasons. On the other hand, all persons registered with the Employment Exchanges also cannot be said to be totally unemployed since some of them might already be self-employed or partially employed while some other might have registered seeking higher status employment from the existing low status employment.

3.13. Census of Assam Government Employees:

As per the Assam Government Employees census, the total number of employees stood at 3.24 lakh as on 31st March, 2004 as against 3.24 lakh as on 31st March, 1999. Thus, the number of employees has recorded a decrease of (-)0.61 percent during the period from 01.02.99 to 31.03.04. Table 3.21 shows the distribution of Government Employees according to sex as per Employees census, 2004.

Table 3.21
Distribution of Assam Government Employees according to sex as per Employees census,
1999 & 2004

Status	Male		Female	
	1999	2004	1999	2004
Class I	7621	8078	842	1177
Class II	8119	7313	1106	868
Class III	199748	195038	50310	48242
Class IV	54067	47079	4258	3534
Fixed/Consolidated	---	7416	---	5433
Total	269555	264924	56516	59254

Source: Directorate of Economic & Statistics, Assam

It has been observed from Table 3.21 that the female employees accounted for about 17 percent in 1999 which was marginally increased to around 18 percent in 2004. In contrast to this, male employees accounted for about 83 percent in 1999 and marginally decreased to 82 percent in 2004. But only 2 percent of female employees were Class-I employees as against around 3 percent of males to their respective total employees in 2004. Further 81 percent of female employees were Class-III and 9 percent with fixed/consolidated pay to their total employment in 2004 as against 74 percent and 3 percent of males in the said category. It indicates that females in Government job are mainly employed in less prestigious and low paid job than males.

3.14. Average Daily Wage Rate in Rural Areas:

As per data collected by the Directorate of Economics and Statistics, Assam, the Average Daily Wage Rate of Workers (Carpenters, black-smith, field-labour, herdsman and other agricultural labour) shows a more or less steady upward trend.

TABLE -3.22
Average Daily Wage Rate in Rural Areas in Assam (in Rupees)

Year	Skilled Labour Wage		Un-skilled Labour Wage				Other Agricultural Labour	
	Carpenter	Blacksmith	Field Labour Ploughman	Herdsman	Reaper and Harvester		Man	Women
	Man	Man	Man	Man	Man	Women		
2001-02	87.01	62.17	52.01	37.56	50.71	40.73	47.02	42.16
2002-03	92.93	68.02	52.32	48.53	52.05	46.50	49.21	47.47
2003-04	102.4	85.11	57.53	52.05	60.13	42.18	55.40	49.32
2004-05	108.77	88.25	62.05	54.85	63.90	49.18	59.27	48.52
2005-06	113.91	94.45	64.19	63.01	65.02	49.02	61.44	47.69
2006-07	120.80	100.69	71.02	63.07	68.09	52.61	65.46	53.88
2007-08	123.53	97.29	76.44	72.19	74.27	59.53	72.11	58.04
2008-09	133.89	104.64	84.65	82.72	82.55	66.76	83.47	66.60
2009-10	147.08	121.33	92.91	92.08	93.25	74.05	102.83	87.00

Source: Directorate of Economic & Statistics, Assam

It has been observed from Table 3.22 that there are significant differences of average daily wage rate between men and women particularly among unskilled labourers and other agricultural labourers. The man-women gap of average daily wage rate in rural areas of Assam was around Rs.10 among reaper and harvesters in

2001-02 which was rapidly widened to Rs.19 in 2009-10. Further man-women gap of average daily wage rate among other agricultural labourers was around Rs.5 in 2001-02 and it was rapidly widened to almost Rs.16 in 2009-10. It indicates that women are paid less than man for the same agricultural work which may be one of the important reasons for rural poverty.

Casual wage labourers are one of the most disadvantaged groups in the labour market, while their work contract is terminated and renewed on a daily basis, poor working conditions and low wages push them below poverty line.

Table 3.23

Average Daily Wage (in Rs.) of Regular and Casual Workers in Assam (15-59 Years), 2004-05

	Male	Female	Index of gender bias in wage payments
Regular			
Rural	123.17	97.70	0.79
Urban	181.52	155.36	0.91
Casual			
Rural	58.03	35.94	0.61
Urban	76.1	44.88	0.58

Note: Index of gender bias in wage payments has been calculated as the ratio of female wage to male wage. Smaller ratio indicates high gender bias

Source: Calculated from unit level data of NSSO, 2004-05

In 2004-05, average casual wage for males and females was just Rs.58 and 36 respectively in rural areas and Rs.76 and 45 respectively in urban areas. On an average in 2004-05, casual workers received far less wages than those received by regular workers. (Table 3.23)

In addition to low wages for casual workers, there is also gender bias in wage payments. It is important to note that the gender bias in casual wage payments is low in rural areas (0.61) than in urban areas (0.58). However, the reason for low gender bias in wage payments in rural areas is highly suppressed wages both for male and female rural workers. The gender bias is also noticeable in case of urban regular workers.

Rural casual labour constitutes the single largest segment of the total workforce in Assam. Among rural casual labourers, agricultural labourers occupy a

predominant position. The rural agricultural wage rate, hence, is considered as one of the most robust indicators of economic well-being not only of agricultural labourers but also of the over all rural population (Deaton & Dreze, 2002). However, agricultural wages are persistently lower than non-agricultural wages.

Among the various reasons for higher rise in rural wages of non-agricultural activities, are enhanced labour productivity and policy intervention through employment generation programmes. In contrast, the agriculture sector continues to be overcrowded, leading to low labour productivity. All these have led to a lower growth in real wages in agriculture over the years.

Conclusion:

The female work participation rate of Assam is less than half of the male participation which is almost half of the male participation rate of India in 2001. It indicates that the work participation rate of female in Assam is less than national average. The female work participation rate of Barpeta District is almost 6 percent lower than average figure of Assam in 2001. Moreover, the female work participation rate of India increased by almost 3 percent as against 1 percent decrease in Assam during 1991-2001. Although the FWPR of Barpeta District increased by almost 3 percent during 1991-2001, it is much less than average figure of Assam. Various reasons may be indicated for such low work participation of females. Generally women are not allowed to work outside because of certain age-old prejudices. Factors like increase in family income and underestimation of various household work performed by female may also responsible for such low FWPR. There is not only low FWPR in Assam, but also there are rural-urban differentials. Although female literacy rate of Assam was almost 2 percent higher than national level (2011 Provisional Census), yet FWPR was less than national level in both rural and urban areas. The FWPR in rural and urban areas of Barpeta District was almost 47 percent in 1991 and 2001 although female literacy increased during this period. It indicates that women's education has not played effective transformative role in increasing their labour force participation. It also indicates that beside education, many other like social mind set up, social norms and customs which can not be measured accurately, affects the female work participation rate. High rural-urban differential in FWPR may be due to the fact that the nature of rural works largely agriculture, is such where females can also participate particularly in low-skilled and low paid jobs. In urban areas, however,

there is either full-time job or no jobs. Again, female of the category of housewives constitute a large proportion of the female residing in urban areas. Early exit of women (probably post marital age) from labour market may be another reason for low FWPR in urban areas where women face inadequate social and family support system. Moreover, there are also high male-female differentials of WPR in both rural and urban areas of Assam. Women are generally engaged in household activities such as bearing and rearing of children and in the production of goods and services for self-household consumption. Therefore, women's work at home remains unrecognized unless it produces something for sale. Therefore, the work participation for female is a myth rather than reality. In recent census, women considered as worker who make significant contribution in the agricultural operations like sowing, harvesting, transplantation, tending cattle and even cooking and delivering food to the farm during the agricultural operation. Therefore, male-female gap of WPR in rural areas has been lower than urban areas. However, in urban areas, women do not have any opportunities for such work as well as inherit gender-bias in rural-urban definition in census of India. According to Indian census, a place is defined as urban if it satisfied that 75 percent of its male workers are engaged in non-agriculture sector. Therefore, the gap of work force participation rate will be much more for male than female in urban areas. Even though, women are engaged in productive household activities with no direct financial gain to the household. The analysis of Age-Specific WPR has shown that the highest increase in FWPR in rural areas took place in the age group of 30-44 years (around 4 percent) during 1993-94 to 2004-05 as against highest increase in urban Assam in the age group 45-59 years i.e. 1.5 percent. Thus, higher aged persons are entering in the female labour market in recent times. This may be due to impact of inflation or social cause like breaking up of joint families into nuclear ones'. Further, the ESWPR in Assam increased by 13.9 percentage points and remained almost stagnant at all India level during 1993-94 to 2004-05. The possible reasons may be that 87 percent of Assam population lives in rural areas. Literacy rate and education level is poor in rural areas. For illiterate women it is easy to enter in primary sector. On the other side women with higher education prefer to do job/work and earn rather to sit ideally.

Census data of work participation rate of main and marginal workers has shown that the percentage of both male and female main workers decreased in Assam during the period 1991-2001. But there were huge male-female gap of main workers.

It was almost 30 percent in 1991 which was marginally declined to 29 percent in 2001. It indicates that males were engaged in more assured productive activities than females. Region wise, the percentage of female main workers to the total female population were lower in industrially backward Lower Assam and Barpeta District of Assam in comparison to average figure of Assam in 1991 and 2001. However, the percentage of female main workers to the total female population were higher in Central and Upper Assam in comparison to the average figure of Assam in 1991 and 2001 as because these regions are industrially advanced (particularly by tea industries) in comparison to Lower Assam.

As men migrate in search of better paid work, women particularly in rural areas are taking over agricultural work in the villages. They face meager wages, long working hours and hazardous work. Figures from the census show that, amongst women, the percentage of "marginal workers" (defined as working for less than 183 days per year) has increased significantly in Assam from about 9 percent in 1991 to about 11 percent in 2001. During the same period, there was a sharp fall in the percentage of "main workers" (more than 183 days a year). The figures thus show a casualisation and feminization of the work force, with the number of marginal women workers becoming larger and more significant. Region wise, the percentage of female marginal workers in Central Assam was highest, although it was remain stagnant at around 13 percent over the period 1991-2001. During the same period, there was a sharp rise in the percentage of female marginal workers by around 6 percent in Upper Assam, and only 2 percent in Lower Assam and Barpeta District. In fact, the percentage of female marginal workers in Upper and Central Assam was more than average figure of Assam in both 1991 and 2001. It indicates not only significant regional variation of female marginal workers, but also possibility of higher incidence of unemployment among females. As marginal work is uncertain and related to irregular income, the significant percent of female marginal workers also indicate poverty and inequality.

Data relating to age group wise labour by sex has shown that higher percentage of female main workers were in the age group 5-14 years than males in both Assam and India indicating more child labour among females than males. Similarly, significant percent of female main workers in the age group above 60 in both Assam and India indicates poverty where aged people are compelled to work due to economic necessity.

Census data of occupational structure has shown that the percentage of female main workers engaged in primary sector was almost 91 percent in 1991 and 60 percent in 2001 in rural Assam. The corresponding figures of males were almost 79 percent in 1991 and around 58 per cent in 2001. Thus, primary occupation singularly provides employment to majority of main workers, though their proportion has been declining. It suggests that there is gradual shift of workers from agricultural to non-agricultural occupations. But it is discouraging to note that the percentage of female main workers engaged in the primary occupations were higher than males. As agriculture provides seasonal employment during cropping season so chances of hidden employment are big. It also indicates that secondary and tertiary sector have failed to generate enough employment opportunities making a pressure on primary sector. Although the percentage of female main workers engaged in primary sector was almost 4 percent lower in rural areas of Barpeta District than average figure of Assam in 1991, it was almost 12 percent higher in 2001. Moreover, the male-female gap of main workers engaged in primary sector increased to almost 7 percent in 2001 as against 6 percent in 1991. Although educated and skill workforce do get employed in secondary and tertiary sector but for unskilled and semi-skilled workers have no alternatives rather than to depend upon primary sector. This fact inhibits the adoption of agricultural innovation in Barpeta District. Although transplanting and harvesting is mainly done by female workers, yet they are not allowed to participate in ploughing and some other selected farm activities. This may be the possible reason for higher proportion of male main workers engaged as cultivators than females in Assam and Barpeta District. Further, majority of females are still denied for land title, though few instances are found for transfer of land ownership to females with a view to escape the land ceiling laws. This may be one of the important reasons for increase in the percentage of female agricultural labourers in Assam during 1991-2001.

An important aspect of quality of female employment in Assam is predominance of the unorganized sector. Over the years, organised sector employment has grown slowly (less than one percent during 2001-08) reflecting the faster growth of employment in the unorganized sector. As a result, there has been increasing informalization of employment over the years. As a whole, about 67 percent of female employment is in the unorganized sector in Assam. In urban areas, the percentage of unorganized sector workers is close to 55-60 percent.

A large proportion of the workers engaged in the urban unorganized sector is migrants from rural areas with poor educational, training and skill background and are employed in low-paying, semi-skilled or unskilled jobs. The productivity and earning levels in most of the enterprises are low and do not often provide full time work to those engaged. For the employees, the working environment is not conducive, working hours are long and most of the conditions of decent employment (e.g. paid leave, pension, bonus, medical support and health insurance, maternity leave benefits, compensation against accident, etc) are nearly non-existent.

Although the magnitude of unemployment in Assam is not precisely known, we can have an idea about the trend and dimension of the problem from the number of job seekers registered with the employment exchanges. The percentage share of women to the total placement gradually increased by around 9 percent and as a result percentage of women without placement declined slowly by around 6 percent during 2004-08. Nevertheless, almost half of the women registered in employment exchanges are remain without placement. This is an indication of the mass unemployment problem of Assam in recent years. The unemployment statistics reflect only the trend and not the totality of employment and underemployment as all unemployed do not and cannot register themselves with the employment exchanges, which are mostly located in the urban areas.

Besides, there is a huge extent of under-employment or disguised unemployment existing in the rural areas of the state, which is putting a heavy pressure on the rural economy of the state. The enormity of the problem can be appreciated from the fact that nearly 36 percent of the total population of Assam continues to live below the poverty line, a figure quite above the national average of 26 percent.

The employment-unemployment survey conducted by the NSSO in various rounds gives a glimpse on various characteristics of employment and unemployment situation in the country as well as in the states. The percentage of female employment in rural Assam according to usual status was around 16 in NSSO's 50th round which was sharply decreased to around 8.6 percent in 60th round as the state continues to be marked by low agricultural productivity, poor infrastructure, weak communications and nascent levels of industrial activity during this period. With political normalcy restored since the past few years and improvements in the state's exchequer, investments and developmental interventions have experienced

improvements. This may be the possible reason for sharp increase of female employment in rural Assam to around 21 percent of NSSO's 61st round and around 29 percent in 64th Round.

As agriculture is the predominant sector in rural areas, therefore, unemployment rate for both males and females in rural areas were less than urban areas during 1995-96 to 2004-05 in Assam as well as in India. The rural-urban differential of female unemployment rates was almost 6 percent in Assam during 1995-96 and was more or less same in 2004-05. However, such rural-urban differential was only 4 percent in 1995-96 and marginally increased to around 5 percent at national level during 2004-05. It indicates that the unemployment rates among urban women was not only more than rural women but also higher than national level. The possible reason may be that there is a tendency of early exit of women (probably after marriage) from labour market particularly in urban areas due to inadequate social and family support system.

Moreover, the Workers Population Ratio (WPR) of Assam is lower than the national average at all age group level both in rural and urban areas. While at the younger age (below 14) lower WPR is a good sign for Assam, yet about 5 percent of the population in rural areas and about 3 percent in urban areas of the population of the age below 14 years are workers, which indicates existence of child labour in the society.

The most dismal stage of affairs in the female labour market of Assam can be located in the category of casual wage labourers while their work contract is terminated and renewed on a daily basis. Poor working conditions and low wages yield them only poverty. The index of casualisation in the rural areas of Assam increased by around 16 percent during 1993-94 to 2004-05 as against 13 percent decrease in urban Assam during the same period. The marked rural-urban difference in terms of percentage of female workers engaged as casual wage earners at once clear a large number of disadvantages like low wage rates, uncertain employment, and irregularity of rural female workers. In 2004-05, average casual wage for males and females was just Rs.58 and 36 respectively in rural areas and Rs.76 and 45 respectively in urban areas. In addition to low wages for casual workers, there is also gender bias in wage payments. It is important to note that the gender bias in casual wage payments is low in rural areas (0.61) than in urban areas (0.58).

CHAPTER IV
ROLE OF RURAL WOMEN IN AGRICULTURE AND ALLIED
ACTIVITIES: CASE STUDY OF BARPETA DISTRICT OF ASSAM

4.01. Selection of villages for survey in Barpeta District:

The present chapter is based on field information collected from respondents in selected villages of Barpeta District. Barpeta District of Assam has two sub-divisions, namely, Bajali and Barpeta. Thus, in the first stage we have selected purposively two blocks, namely Gobardhana Development Block and Chakchaka Development Block from Barpeta sub-division and another two Blocks, namely, Jalah Development Block and Bajali Development Block from Bajali sub-division based upon data collected from concerned Block Development Office on female work participation. There are twelve Development blocks in Barpeta District, namely, Barpeta, Chenga, Sarukhetri, Gomafulbari, Pakabetbari, Bhawanipur, Bajali, Ruposhi, Gobardhana, Jalah and Mandia. Out of these blocks, eight blocks namely Barpeta, Chenga, Sarukhetri, Gomafulbari, Ruposhi, Gobardhana, Mandia and Chakchaka Development Blocks fall under Barpeta Sub-division and remaining four blocks namely Pakabetbari, Bhawanipur, Bajali and Jalah Development Block fall under Bajali Sub-division. The data on female work participation collected from Block Office are as follows.

Table 4.01

Female Work Participation in the Blocks of Barpeta and Bajali Sub-Divisions of Assam

Sub-Division	Dev. Blocks	Total Female Population	Female Workers	FWPR (%)
Barpeta	Barpeta	76207	9149	11.1
	Chenga	69119	10091	14.6
	Sarukhetri	74996	10349	13.8
	Gomafulbari	52917	7990	15.1
	Ruposhi	59664	8830	14.8
	Gobardhana	71039	11650	16.4
	Mandia	61553	8002	13.0
	Chakchaka	41317	6652	16.1
Bajali	Pakabetbari	82948	12774	15.4
	Bhawanipur	76498	11092	14.5
	Bajali	74556	11854	15.9
	Jalah	68497	11781	17.2

From the collected data as mentioned above it has been observed that female work participation rate in Gobardhana (16.4 per cent) and Chakchaka (16.1 per cent) under Barpeta Sub-division are the highest. Similarly FWPR in Bajali (15.9 per cent) and Jalah (17.2 per cent) Development Block are the highest under Bajali Sub-division. Thus, we have selected purposively these four blocks in our first stage of sampling, as mentioned in the initial chapter of the study.

In the second stage of purposive sampling, two villages from each of the Blocks are selected purposively depending upon the same criterion *i.e.* female work participation rates. Hence, we have selected Khoirabari (FWPR 15.4 per cent) and Kalpani village (FWPR 15.9 per cent) from Gobardhana Development Block and Puthimari (FWPR 14.8 per cent) and Nichuka village (FWPR 15.2 per cent) from Chakchaka Development Block as per data collected from concerned Block Development Office. Further, we have selected Jalah (FWPR 21.2 per cent) and Baghmara village (FWPR 20.2 per cent) from Jalah Development Block and Akaya (FWPR 14.8 per cent) and Bhogpur village (FWPR 14.2 per cent) from Bajali Development Block on the basis of same criteria *i.e.* high female work participation. Thus, the total number of villages to be surveyed is eight. All the eight villages are sub-divided into three groups according to their FWPR. Group A includes Jalah and Baghmara village having higher FWPR, Group B contains Khoirabari, Kalpani and Nichuka village having lower FWPR than Group A and Group C includes Puthimari, Akaya and Bhogpur village with the lowest FWPR among the selected villages.

In the third stage, we first collected a list of female cultivators and agricultural labourers of selected villages (or groups) from concerned Block Development Office. Then 20 percent sample was selected at random from each group of female cultivators and agricultural labourers. The selection design has been depicted in Table 4.02.

So in all there were 1056 female cultivators and 1018 female agricultural labourers in the selected villages. Out of these 210 female cultivators and 203 labourers were selected as the sample for the survey. The number of the selected sample of the cultivators was 78, 67 and 65 in groups A, B and C respectively. On the other hand, the selected sample of the labourers was 69, 70 and 64 in groups A, B and C respectively.

Table 4.02

Number of Female Cultivators and Agricultural labourers households in the sample

Group	Villages	Total female cultivator households	No. of Selected female cultivator households	Total female Agri. Labour households	Number of Slected Agri. Labour households (female)
A	Jalah	260	51	230	46
	Baghmara	135	27	115	23
Sub Total Group A		395	78	345	69
B	Khoirabari	124	25	201	40
	Kalpani	106	21	85	17
	Nichuka	105	21	65	13
Sub Total Group B		335	67	351	70
C	Puthimari	101	20	111	22
	Akaya	115	23	85	17
	Bhogpur	110	22	126	25
Sub Total Group C		326	65	322	64
Grand Total		1056	210	1018	203

An open ended schedule had been prepared to collect relevant data on the basis of the personal interview method. The collected data in terms of the number of hours spent in various activities were converted subsequently into per (8 hours) day equivalents for analysis of the role of female cultivators and agricultural labourers in our study groups. The collected data were also analysed to examine their economic position in terms of income, consumption, assets, liabilities, housing conditions, etc.

The schedule included all the relevant questions, keeping in view the objectives of the study. This schedule was tested for checking the reliability of the questions to be asked and columns were filled so that no misinterpretation was possible. So far as the primary data was concerned, this questionnaire was filled up through personal interview with the selected female cultivators and agricultural labourers.

The schedule was duly filled by interviewing respondents in order to obtain the following information:

- i) Social and Demographic Indicators *viz.*, name of Districts, Block, Village, whether agricultural labourer or cultivator, name of the Head of the family, number of family members, religion, caste, educational level, main and subsidiary occupation of the family.
- ii) Time Use indicators: Time spent in agriculture and allied activities.
- iii) Economic Indicators: Income from different sources like income from permanent labour, casual labour, crop sharing, income from dairying, poultry and sale of manure along with income from salaries, pensions, interest on deposits and miscellaneous sources of income both for the labourers and the female cultivators.
- iv) Household Consumption Indicators: Expenditure on various items; the quantity and value of the expenditure for both the agricultural labourers and female cultivators.
- v) Physical Capital Indicators: Durable and livestock assets of female cultivators and agricultural labourers.
- vi) Indebtedness of Households: Savings and debt position of female cultivators and agricultural labourers.
- vii) Miscellaneous information.

It is evident from the foregoing chapter that majority of female workers in rural areas of Assam as well as in Barpeta District are either cultivators or agricultural labourers (Table 3.08). But it is observed that they are also performing various non-farm activities like management of livestock, poultry, handloom and weaving, sericulture, etc. The extent to which these activities are recognized and given due recognition, depends on, among other factors, socio-economic status, ethnicity, customs and traditions, religious beliefs and education. However, there are still too few studies that attempt to capture the role of female cultivators and agricultural labourers in both farm and off farm sectors, especially in Assam.

Therefore, the principal objective of this chapter is to examine in greater detail, the role of female cultivators and agricultural labourers in crop production and allied activities in rural Assam. In attempting to do so, we paid particular attention to the many activities that are often not counted as economically productive in spite of the time spent in care of livestock and poultry farming.

4.02. Female Cultivators and Agricultural labourers in Crop Cultivation:

As agriculture is the mainstay in the economy of our sample villages, the contribution of female cultivators and agricultural labourers in terms of labour hours in the cultivation of both food and cash crops have been represented in Table 4.03

Table 4.03
Time Use Pattern of Female Cultivators and Agricultural Labourers in Crop Cultivation

Group	Workers	Person days (8 hours per worker)							Total
		Food Crops					Cash Crops		
		Autumn Rice	Winter Rice	Summer Rice	Pulses	Vegetables	Oil Seeds	Sugar Cane	
1	2	3	4	5	6	7	8	9	10
A	Cultivators	15.2 (13.99)	45.57 (38.4)	18.28 (16.82)	8.90 (8.19)	11.28 (10.38)	9.30 (8.56)	10.1 (9.29)	118.63
	Agricultural Labourers	12.8 (15.38)	32.46 (35.58)	15.19 (18.25)	7.10 (8.53)	9.12 (10.96)	6.14 (7.37)	8.4 (10.09)	91.21
B	Cultivators	13.80 (13.08)	40.14 (38.06)	16.18 (15.34)	7.26 (6.88)	10.18 (9.65)	8.28 (7.85)	9.60 (9.10)	105.44
	Agricultural Labourers	11.20 (14.13)	26.24 (33.11)	14.40 (18.17)	6.60 (8.33)	8.42 (10.62)	5.12 (6.46)	7.25 (9.15)	79.23
C	Cultivators	12.40 (13.15)	35.12 (37.25)	15.20 (16.12)	6.48 (6.87)	9.12 (9.67)	7.70 (8.16)	8.25 (8.75)	94.27
	Agricultural Labourers	9.14 (13.55)	22.23 (32.96)	12.41 (18.40)	5.28 (7.83)	7.41 (10.98)	4.80 (7.11)	6.16 (9.13)	67.43
Total	Cultivators	41.4 (13.00)	120.83 (37.95)	49.66 (15.59)	22.64 (7.11)	30.58 (9.60)	25.28 (7.94)	27.95 (8.77)	318.34
	Agricultural Labourers	33.14 (13.93)	80.93 (34.02)	42.00 (17.65)	18.98 (7.97)	24.95 (10.48)	16.06 (6.75)	21.81 (9.16)	237.87

Source: Field Survey

N.B.: Figures in brackets are percentages.

It is evident from Table 4.03 that the female cultivators are employed in crop cultivation around 318 days in a year against around 237 days for agricultural

labourers indicating that the labour time involvement of female cultivators in crop cultivation is more than agricultural labourers. The possible reasons may be that agricultural labourers have fixed working hours against which the wages are paid and therefore there is no compulsion to work for more hours to earn the fixed wages on their part and reluctance on the part of cultivators to hire labour beyond a certain number of labour days. On the other hand, cultivators working on their own fields for no wages can have flexible working days and are willing to supplement the work of agricultural labourers till the completion of the task. For agricultural labourers, they are able to work for as many days as cultivators are willing to hire them. In respect of the study groups, the employment of female cultivators and agricultural labourers in crop cultivation are more in Group A followed by Group B and Group C. The labour time involvement of female cultivators are around 119 days, 105 days and 94 days in Group A, B and C respectively as against around 91 days, 79 days and 67 days of female agricultural labourers in the same groups indicating possibility of higher resource base in Group A followed by Group B and Group C.

It is also evident from Table 4.03 that majority of female cultivators and agricultural labourers are engaged in food crop production rather than cash crops in all groups. Disaggregating by food crops and cash crops and aggregating over the groups, it has been observed that around 83 percent of female cultivators are engaged in food crops as against only around 17 percent in cash crops and about 84 percent of agricultural labourers in food crops as against only almost 16 percent in cash crops which is indicative of the predominance of family farming adopted by both the sections of the society. However, the labour time involvement of both female cultivators and agricultural labourers are more in rice cultivation than pulses and vegetables in the category of food crops. The labour time involvement of female cultivators and agricultural labourers in the cultivation of autumn, winter and summer rice are almost same i.e. almost 66 percent as rice is the major cultivation. For the cultivation of other food crops like pulses and vegetables, the labour time involvement of female cultivators and agricultural labourers is also same i.e. around 7-8 and 9-10 percent. It indicates that there is no major distinction in farming methods for production of food crops for both cultivators and labourers. Similar phenomenon has been observed in the cultivation of cash crops, i.e. oilseeds and sugarcane, where about 8 and 9 percent of labour time of female cultivators and about 7 and 9 percent of labour time of agricultural labourers are used in the cultivation of oilseeds and

sugarcane respectively. Thus, less than 10 percent of the labour time of both female cultivators and agricultural labourers are used in the cultivation of cash crops indicating a near subsistence village economy.

Though labour time involvement of female cultivators and agricultural labourers are higher in rice cultivation in respect of all groups, yet differences of labour time involvement have been observed where around 36 and 34 percent of labour time of female cultivators and agricultural labourers are used in the cultivation of winter rice in comparison to around 13 and 14 percent in autumn rice and around 15 and 18 percent in summer rice. This is primarily because winter rice is the principal Kharif crop in the study area with normal rainfall occurring during this period that is suitable for rice production. Scanty or deficient rainfall during the cultivation of autumn and summer rice may be the possible reason for lower time involvement of female cultivators and agricultural labourers. Moreover, labour time involvement of female cultivators and agricultural labourers are marginally higher in the cultivation of sugarcane in comparison to oilseeds. The labour time spent by female cultivators in the cultivation of oilseeds and sugarcane are about 8 and 9 percent respectively as against about 7 and 9 percent for agricultural labourers as oilseeds is mainly a Rabi crop grown under scanty or deficient rainfall in our study area and there is the lack of adequate irrigation system.

In respect of groups also, it has been observed that most of the female cultivators and agricultural labourers use their labour time in the cultivation of food crops rather than cash crops. It has been observed that approximately 83 percent of labour time of female cultivators in all the three groups is spent on the production of food crops as against approximately 16 percent in the cultivation of cash crops. For agricultural labourers, the labour time involvement in the cultivation of food crops hovered around 84 percent for Group A and Group B and around 83 percent in Group C as against 15-16 percent for in the production of cash crops in the three groups. Thus, the labour time spent in food crops and cash crops by female cultivators and agricultural labourers are almost similar indicating no major distinction in farming methods for the cultivation of these crops between female cultivators and agricultural labourers as well as between the groups of villages under study. However, differences in labour time use between female cultivators and agricultural labourers may be noted in case of the different types of crops in our study groups. In case of winter rice, the percentages of labour time involvement of female cultivators are higher than

agricultural labourers in different groups. It varies between 37-38 percent for female cultivators in Groups A, B and C as against 32-35 percent for female agricultural labourers in the three groups. But in case of autumn and summer rice, the time involvement of female agricultural labourers is higher than female cultivators in different groups. The time involvement of female agricultural labourers in autumn rice varies from 13 percent in Group C to around 15 percent in Group A as against around 13 percent of female cultivators in Groups A, B and C. Similarly, the time involvement of female agricultural labourers in summer rice is around 18 percent for the three groups as against 15-16 for female cultivators in the groups. The possible reason for such variation in labour time involvement may be the very seasonality of agricultural operations. As the cultivation of rice is predominately dependent upon the availability of water, variations in demand for labour time involvement occur due to the nature and amount of rain recorded. Generally, rains come on time during the sowing period of winter rice (June-August) and therefore agricultural operations run as scheduled and accordingly generate demand for female cultivators than agricultural labourers as the usual pattern as because cultivators working on their own field for no wages can have flexible working days and are not willing to supplement it with the work of agricultural labourers till the completion of the task. Conversely, labour time involvement of female agricultural labourers are noticeably higher than female cultivators for summer and autumn rice possibly due to scanty and deficient rainfall and reluctance on the part of cultivators to engage themselves in the arduous task of cultivation in the absence of proper irrigation thus relying on more of hired labour for this. Similar phenomenon has also been observed in the cultivation of pulses and vegetables where labour time involvement of female agricultural labourers is marginally higher than female cultivators in different groups. In case of pulses, the labour time involvement of female agricultural labourers is around 8 percent in the three groups as against 6-7 percent of cultivators. Similarly, in case of vegetables, the labour time involvement of female agricultural labourers is around 10 percent in the three groups in comparison to marginally lower percentage of female cultivators i.e. about 9 percent in the same groups. The possible reasoning is similar – scanty and deficient rainfall during this period and inclination to use more of hired labour by the female cultivators.

In case of cash crops, the time involvement of both female cultivators and agricultural labourers in sugarcane is more than oilseeds. The time involvement of

female cultivators and agricultural labourers in sugarcane are around 9-10 percent in Group A, B and C. But in case of oilseeds, the time involvement of female cultivators are around 8 in the three Groups as against 6-7 percent of agricultural labourers in the same Group of villages. The possible reason may be the differences in crop duration of sugarcane and oilseeds. Though the sowing period of sugarcane is April-June, the harvesting period is December-February requiring more use of labour time. But the crop duration of oilseeds is relatively shorter. The sowing period of oilseed is November-January and harvesting period is March-April requiring less use of farm labour.

Contract Mix:

Family labour as permanent labour accounts for much of the total labour use in crop cultivation. The terms of contract for hired labour are both permanent and casual in nature. Labour, which is engaged for a specific period - annual, bi-annual or seasonal basis is permanent, but the labourers who are employed on daily basis are casual. However, only men are hired as permanent labour on contract for the entire season, and women are not hired as permanent workers. Both men and women are hired as casual labour, and are engaged for specific agricultural operations either on piece rate or daily wage basis.

It has been observed from Table 4.04 that the time involvement of female cultivators in crop cultivation is higher as family labour and time involvement of female agricultural labourers as casual labour is higher than family labour. It is around 208 days as family labour for cultivators as against around 111 days as casual labour. On the other hand, about 133 days of female agricultural labourers using their labour time as casual labour as against about 104 days as family labour. As the female cultivators have their own land to cultivate, they prefer to use more time in farm works for their livelihood. But agricultural labourers do not have their own land. They prefer more to use their labour time in casual works as casual workers enjoy more freedom. Similar phenomenon has been observed in various groups where labour time involvement of female cultivators as family labour is around 81, 74 and 52 days in group A, B and C respectively as against only around 37 days as casual labour in group A followed by 31 in group B and 42 days in group C.

Table 4.04
Labour Contract Mix, by crop

Group	Workers	Labour	Person Days (8 hours per workers)										Total
			Food crops					Cash crops					
			Autumn rice 4	Winter rice 5	Summer rice 6	Pulses 7	Vegetables 8	Oilseeds 9	Sugarcane 10				
1	2	3	13.03 (15.98)	20.42 (28.73)	14.66 (17.98)	7.33 (8.99)	8.39 (10.29)	6.92 (8.49)	7.74 (9.49)	6.92 (8.49)	7.74 (9.49)	11	
A	Cultivators	Family Labour	5.57 (14.99)	11.32 (30.47)	6.31 (16.96)	3.34 (8.89)	4.08 (10.98)	2.78 (7.48)	3.75 (10.09)	2.78 (7.48)	3.75 (10.09)	37.14	
	Agricultural Labourers	Casual Labour	5.01 (13.1)	14.13 (36.88)	5.82 (15.2)	2.72 (7.1)	3.75 (9.8)	3.48 (9.1)	3.48 (9.1)	3.48 (9.1)	3.48 (9.1)	38.31	
		Family Labour	7.45 (14.1)	16.0 (30.24)	9.04 (17.1)	4.39 (8.3)	5.34 (10.1)	4.97 (9.4)	5.71 (10.8)	4.97 (9.4)	5.71 (10.8)	52.90	
		Permanently hired	11.8 (15.87)	20.88 (28.1)	13.00 (17.5)	6.24 (8.4)	7.57 (10.2)	6.01 (8.1)	8.81 (11.85)	6.01 (8.1)	8.81 (11.85)	74.31	
B	Cultivators	Family Labour	4.42 (14.19)	10.34 (33.21)	5.01 (16.1)	2.70 (8.7)	3.23 (10.4)	2.30 (7.4)	3.13 (10.07)	2.30 (7.4)	3.13 (10.07)	31.13	
	Agricultural Labourers	Casual Labour	5.57 (12.9)	16.37 (37.88)	6.39 (14.8)	3.02 (7.0)	4.27 (9.9)	3.75 (8.7)	3.84 (8.9)	3.75 (8.7)	3.84 (8.9)	43.21	
		Family Labour	4.97 (13.8)	10.7 (29.7)	6.08 (16.9)	3.20 (8.9)	3.63 (10.1)	3.27 (9.1)	4.17 (11.7)	3.27 (9.1)	4.17 (11.7)	36.02	
		Permanently hired	7.8 (15.2)	16.31 (31.42)	8.77 (16.9)	4.56 (8.8)	5.24 (10.1)	4.41 (8.5)	4.82 (9.3)	4.41 (8.5)	4.82 (9.3)	51.90	
C	Cultivators	Casual Labour	6.05 (14.3)	14.13 (33.34)	6.83 (15.9)	3.72 (8.8)	4.27 (10.1)	3.05 (7.2)	4.32 (10.2)	3.05 (7.2)	4.32 (10.2)	42.37	
	Agricultural Labourers	Family Labour	2.99 (13.1)	8.76 (38.33)	3.22 (14.1)	1.69 (7.4)	2.23 (9.8)	2.05 (9.0)	1.91 (8.4)	2.05 (9.0)	1.91 (8.4)	22.85	
		Permanently hired	6.28 (14.1)	14.87 (33.35)	7.22 (16.2)	3.61 (8.1)	4.36 (9.8)	3.92 (8.8)	4.32 (9.7)	3.92 (8.8)	4.32 (9.7)	44.58	
		Family Labour	32.63 (15.71)	60.61 (29.18)	36.43 (17.53)	18.13 (8.72)	21.2 (10.20)	18.91 (9.10)	17.62 (8.48)	18.91 (9.10)	17.62 (8.48)	207.70	
Total	Cultivators	Permanently hired	16.04 (14.49)	35.79 (32.34)	18.15 (16.40)	9.76 (8.82)	11.58 (10.46)	8.13 (7.34)	11.2 (10.12)	8.13 (7.34)	11.2 (10.12)	110.64	
	Agricultural Labourers	Casual Labour	13.57 (12.96)	39.26 (37.61)	15.43 (14.78)	7.43 (7.11)	10.25 (9.82)	9.2 (8.81)	9.23 (8.84)	9.2 (8.81)	9.23 (8.84)	104.37	
		Family Labour	18.7 (14.00)	51.57 (38.7)	22.34 (16.73)	11.2 (8.38)	13.33 (9.8)	14.16 (10.6)	15.2 (11.38)	14.16 (10.6)	15.2 (11.38)	133.50	
		Casual Labour											

Source: Field survey

N.B.: Figures in brackets are percentages.

The labour time involvement of female cultivators as family labour is maximum in group A followed by group B and lowest in group C indicating a possible correlation between time involvement as family labour and resource base. But labour time involvement of female cultivators as casual labour is higher in group C followed by group A and group B which indicates that resource base of group C is minimum and more poverty stricken and hence they are compelled to use their labour time more as casual labour. On the other hand, the resource base of agricultural labourers is low and they prefer to use their labour time more as casual labour. For agricultural labourers the labour time use as family labour is around 38, 43 and 23 in group A, B and C respectively as against higher labour time involvement as casual labour around 53 days in group A, 36 days in group B and around 44 days in group C indicating labour time involvement of labourers as family labour is maximum in group B and minimum in group C and labour time involvement as casual labour is maximum in group A and minimum in group B. The possible reason for such differences may be the same i.e., different resource base resulting mainly from different levels of socioeconomic development among group of villages under study.

Considering food crops and cash crops separately, it has been observed that labour time involvement of female cultivators and agricultural labourers as family labour is a little over 80 percent in case of food crops as against around 17 percent in cash crops for all groups. Similarly, the labour time involvement of female cultivators and agricultural labourers as casual labour is around 80 percent in food crops as against 17 percent approximately for cultivators and 19 percent for labourers in cash crops, indicating that labour time spent for cultivators as family labour and casual labour are almost uniform as there is no major distinction in farming methods between the two groups. Further, the labour time involvement as family labour and casual labour is higher in food crops than cash crops, indicating that agriculture is not yet commercialized and it has remained traditional and family-based.

Rice is the major crop among all the food crops. Rice cultivation accounts for around 62 percent of labour use as family labour as against 63 percent as casual labour in all groups among female cultivators. Similarly, the time involvement as family labour among agricultural labourers for the cultivation of rice is approximately 65 percent as against 69 percent as casual labour indicating use of marginally higher proportion of casual labour than family labour. Similar phenomenon has been observed in the cultivation of pulses and vegetables where labour time involvement of

female cultivators and agricultural labourers as casual labour is marginally higher than family labour, though the difference is small. In case of cash crops, the labour time involvement of female cultivators and agricultural labourers as casual labour is higher than family labour. Combining the two cash crops i.e. oilseeds and sugarcane, the labour time involvement of female cultivators and agricultural labourers as family labour is around 8 and 17 percent respectively as against almost 16 percent of cultivators and 22 percent of labourers as casual labour. The possible reason is that the traditional method of cultivation does not pay much attention to management problems (farm and labour management) as such, but relied more on the use of casual labour during peak seasons to fulfill the labour requirements.

In respect of groups, the labour time involvement of female cultivators as family labour is little over 80 percent in the three groups as against 82 percent of casual labour in groups A, B and group C indicating no major distinction in labour use pattern in various groups for the cultivation of food crops. Similarities are observed in labour time spent by agricultural labourers as family labour and casual labour in food crops where labour time involvement of agricultural labourers as family labour is around 82 percent of total labour time in group A, B and C as against around 80 percent of casual labour in groups A and B and 81 percent in group C, indicating no major differences in farming methods for the cultivation of food crops. But, the labour time use of female cultivators and agricultural labourers as family labour and casual labour in the cultivation of cash crops is low in comparison to food crops varying between 18 - 20 percent of family labour and casual labour with the latter having a higher time involvement by female cultivators in groups A, B and C. Similarly, 18-20 percent of family labour and casual labour is used by agricultural labourers in groups A, B and C. It shows that the labour time use of female cultivators and agricultural labourers as casual labour in the cultivation of cash crops is marginally higher than family labour indicating reluctance on the part of cultivators and labourers to engage themselves as family labour with no wages at all and intensity to use more of hire labour on casual basis.

Moreover, rice cultivation accounts for around 63 percent of labour use as family labour for female cultivators in group A, 62 percent in group B and approximately little over 63 percent in group C as against about 62, 64 and 63 percent of casual labour in group A, B and C respectively. Similarly, the time involvement as family labour among agricultural labourers for the cultivation of rice is around 65, 66

and 64 percent in group A, B and C respectively as against about 61 percent of casual labour in group A, 60 percent in group B and 64 percent in group C. Similar phenomenon has been observed in the cultivation of pulses and vegetables where labour time use of female cultivators as family labour and casual labour is hovering around 19 percent pointing to the absence of any major distinction between the use of family and casual labour. For agricultural labourers the labour time use as family labour, however, is marginally lower than casual labour. The possible reason may be the landlessness among agricultural labourers and preference given by them to casual labour to earn more wages necessary for their subsistence. In case of cash crops, although labour time involvement of female cultivators as family labour and casual labour has no major distinction, yet the labour time use of agricultural labourers as casual labour is higher than family labour. This is indicative of the compulsion to engage as casual labour to earn more wages as the sowing season of sugarcane and summer rice and both sowing and harvesting season of oilseeds and pulses is over the same period and hence the cultivators prefer to use more of hired labour as casual labour to meet the additional labour requirements.

Although labour time involvement of female cultivators and agricultural labourers in the form of family and casual labour is highest in the rice cultivation, yet such involvement is not the same among the three varieties of rice. The labour time use of female cultivators as family labour is the highest for winter rice as it is a major kharif crop and use of family labour is lowest for summer rice as summer rice is increasingly being substituted by jute in our study area due to low productivity of summer rice in comparison to jute. But, the use of casual labour is higher than family labour for winter rice and lower than family labour for autumn and summer rice for female cultivators. The use of casual labour by female cultivators for winter rice in group A, B and C indicate the willingness by the cultivators to supplement their work by the casual labour as family labour do not earn any wages for working on their own farm. But the labour time use of female cultivators as casual labour is lower for the cultivation of autumn rice in group A, B and C as against family labour in the same groups. Similarly, the labour time use of female cultivators as casual labour is marginally lower for the cultivation of summer rice in group A, B and C as against family labour in the same group. The possible reason may be the higher productivity of winter rice in comparison to autumn and summer rice and reluctance on the part of cultivators not to use hired labour.

But for agricultural labourers the use of labour time as casual labour is close to 14 percent for the cultivation of autumn rice in the three groups as against 13-15 percent of labour time use of family labour in the same group. Similarly, the use of labour time as casual labour is comparatively higher (highest for Group A) for the cultivation of summer rice in the groups than the percentage of family labour time in the same groups. Thus, the use of casual labour is higher than family labour for the cultivation of autumn and summer rice. The possible reason runs along similar lines which is — lower productivity of autumn and summer rice and inclination of the labourers to engage themselves as casual labourers to enjoy greater freedom with flexible working days and flexible wages.

In case of other food crops, the labour time use of female cultivators and agricultural labourers as family and casual labour is higher in vegetables than pulses. For cultivators the labour time use as family labour is around 9 percent for pulses in groups A, B and C as against 10 percent for vegetables in the same group. Similarly, the labour time use as casual labour for cultivation of pulses is around 9 percent with negligible variation amongst the groups A, B and C respectively for female cultivators as against approximately 10 percent of casual labour in the cultivation of vegetables in the groups. Similar is the case of agricultural labourers where labour time use for the cultivation of vegetables as family labour is around 10 percent in the groups A, B and C similar to percentage of days spent by casual labour for the same groups. Group B and C have comparatively higher percentage days by casual labour for the cultivation of pulses than group A. The finding is carried over family labour by the groups for the cultivation of pulses. The possible reason may be that the vegetables are grown throughout the year (both kharif and rabi season) while pulses are sown and harvested in a particular season i.e. November to mid-February in our study area.

In case of cash crops, the use of family and casual labour for female cultivators and agricultural labourers is higher for sugarcane than oilseeds. The labour time use of female cultivators as family labour in sugarcane is higher (highest in Group B) than family labour in the cultivation of oilseeds. Similarly, the labour use of female cultivators as casual labour for the cultivation of sugarcane is around 10 percent in the groups A, B and C, which is significantly higher than around 7 percent for cultivation of pulses in the groups. For agricultural labourers, the labour time use as family labour for the cultivation of sugarcane is higher by 1 percentage point in the groups than family labour for the cultivation of pulses. Very little variation is there

between labour time use of agricultural labourers as casual labour for the cultivation of sugarcane and casual labour for the cultivation of pulses within the groups. The possible reason for higher labour time involvement of family and casual labour in sugarcane for both female cultivators and agricultural labourers may be due to the longer gestation lag for sugarcane than oilseeds.

Segregated Activities

There is considerable specificity to the operations in which female cultivators and agricultural labourers participate in crop production as is evident from Table 4.05.

Table 4.05
Working days of Female Cultivators and Agricultural Labourers by farm activities
[Number of Days (8 hrs) spent]

Cultivators	Farm activities										Total Working Days
	Group	Land Preparation, Ploughing etc.	Irrigation	Fertilizers application	Sowing	Transplanting	Use of insecticides & Pesticides	Hand Weeding	Use of Weeder Herbicide	Harvesting	
A	--	5.69 (4.8)	9.25 (7.8)	8.06 (6.8)	37.24 (31.4)	--	7.47 (6.4)	--	37.0 (31.2)	13.92 (11.73)	118.63
B	--	4.85 (4.6)	7.80 (7.4)	6.74 (6.4)	32.79 (31.1)	--	5.37 (5.1)	--	32.46 (30.79)	16.26 (15.43)	105.44
C	--	3.58 (3.8)	6.50 (6.9)	5.46 (5.8)	27.43 (29.1)	--	4.33 (4.6)	--	28.10 (29.81)	17.16 (18.20)	94.27
Total	--	14.12 (4.43)	23.55 (7.39)	20.26 (6.36)	97.46 (30.61)	--	17.17 (5.39)	--	97.56 (30.64)	47.34 (14.87)	318.34
Labourers											
A	--	3.83 (4.2)	5.74 (6.3)	5.29 (5.8)	25.63 (28.1)	--	5.29 (5.8)	--	26.54 (29.1)	18.89 (20.71)	91.21
B	--	3.08 (3.9)	4.35 (5.5)	4.11 (5.2)	21.55 (27.2)	--	3.72 (4.7)	--	22.34 (28.2)	20.08 (25.31)	79.23
C	--	2.56 (3.8)	2.94 (4.8)	2.49 (3.7)	18.13 (26.9)	--	2.76 (4.1)	--	18.74 (27.8)	19.81 (29.37)	67.43
Total	--	9.47 (3.98)	13.03 (5.47)	11.89 (4.99)	65.31 (27.45)	--	11.77 (4.94)	--	67.62 (28.42)	58.78 (24.71)	237.87

Source: Field survey

N.B.: Figures in brackets are percentages

It has been observed from the above table that the total working days for female cultivators in crop cultivation is 318.34 days where 118.63 days is employed in Group A, 105.44 days in Group B and 94.27 days in Group C. Transplanting and harvesting is the major farm activity where more than 60 percent of labour time of female cultivators are used followed by around 7 percent in fertilizer applications and approximately 4 percent in irrigation. Post harvest operation accounts for around 15 percent of labour use and in the rest of the activities like sowing and hand weeding accounts for only 12 percent of labour time use among female cultivators. In respect of groups around 62 percent of labour time of female cultivators is used in transplanting and harvesting activities in group A, and B and about 59 percent in group C. Fertilizer application accounts for 7-8 percent of labour time of female cultivators in group A, B and C as against only 4-5 percent of labour time use in irrigation in the same group indicating that the method of agriculture is still traditional as the use of labour time in modern input is lower, like, application of chemical fertilizer and irrigation. In rest of the activities like sowing and hand weeding, around 13 percent of labour time of female cultivators are used in group A, approximately 11 percent in group B and 10 percent group C. It can further be noted that the labour time use of female cultivators in post harvest operations like grinding, de-husking, storing, winnowing and even marketing, is highest in group C which has been worked out at around 18 percent followed by 15 percent in group B and close to 12 percent in group A indicating that the resource base of group C cultivators is lowest followed by group B and A and as a result they are compelled to use their labour time in more labourious tasks like post harvesting activities.

On the other hand, the labour time use of agricultural labourers in crop cultivation is 237.87 days where 91.21 days is employed in group A, 79.23 days in group B and 67.43 days in group C. Transplanting and harvesting together accounts for 56 percent of labour use of the total working days followed by 25 percent in post harvest operations, 5 percent in fertilizer application and 3 percent in irrigation. For rest of the activities like sowing and hand weeding only 10 percent of labour time of female agricultural labourers are used. It indicates that transplanting and harvesting are the major farm activities where a significant proportion of agricultural labourers devoted their labour time and the demand for labourers increased during the period of transplanting and harvesting as both the activities are low paid and laborious. With respect to the groups, approximately 57 percent of labour time of agricultural

labourers is used in transplanting and harvesting activities in group A, around 55 percent in group B and 54 percent in group C. Fertilizer application accounts for 5-6 percent of labour time of agricultural labourers in the three groups as against only 4-5 percent of labour time used in irrigation indicating the lesser importance of modern inputs like irrigation and chemical fertilizer since method of agriculture is still traditional. In rest of the activities like sowing and hand weeding about 12 percent of labour time of agricultural labourers is used in group A, 10 percent in group B and 8 percent in group C. Moreover, the labour time use of female agricultural labourers in low paid and laborious post harvest operation is more in group C with about 29 percent followed by 25 percent in group B and 21 percent in group A indicating reluctance on the part of the cultivators to engage themselves in low paid and laborious tasks resulting in engagement of more agricultural labourers with fixed wages.

Seasonality in Employment:

It is well known that agricultural production systems are characterized by seasonality, with peak periods associated with the necessity to complete specific farm operations within a definite time frame leading to peak and slack season of female labour employment. Table 4.06 depicts the seasonal variations of employment of female cultivators and agricultural labourers.

Table: 4.06
Month-wise employment of labour days (8 hours) per worker

Month	Employed days of females in farm activities					
	Group A		Group B		Group C	
	Cultivators	Agricultural Labourers	Cultivators	Agricultural Labourers	Cultivators	Agricultural Labourers
May	8.3(6.99)	6.11(6.7)	7.16(6.8)	5.22(6.6)	6.41(6.7)	4.38(6.5)
June	11.3(9.52)	8.75(9.6)	9.59(9.1)	7.44(9.4)	9.49(10.06)	6.27(9.3)
July	19.53(16.46)	15.59(17.1)	18.97(17.99)	13.38(16.9)	16.36(17.35)	11.66(17.3)
August	17.6(14.83)	14.04(15.4)	16.23(15.39)	11.96(15.1)	14.85(15.75)	10.51(15.6)
September	3.8(3.2)	3.46(3.8)	3.26(3.1)	2.69(3.4)	3.94(4.17)	2.49(3.7)
October	5.6(4.72)	4.19(4.6)	4.85(4.6)	3.32(4.2)	5.33(5.86)	3.03(4.5)
November	10.2(8.59)	8.30(9.1)	8.85(8.4)	7.13(9.0)	8.83(9.36)	6.00(8.9)
December	17.1(14.41)	14.31(15.7)	14.65(13.9)	12.51(15.8)	13.00(13.8)	10.51(15.6)
January	7.8(6.57)	6.56(7.2)	6.53(6.2)	5.86(7.4)	5.75(6.1)	4.78(7.1)
February	6.6(5.56)	5.83(6.4)	5.58(5.3)	5.14(6.5)	4.90(5.2)	4.24(6.3)
March	5.6(4.72)	2.64(2.9)	4.85(4.6)	2.58(3.25)	4.14(4.4)	2.09(3.1)
April	5.2(4.38)	1.43(1.56)	3.92(4.3)	2.00(2.52)	1.27(1.34)	1.47(2.18)
Total	118.63	91.21	105.44	79.23	94.27	67.43

Source: Field survey

N.B.: Figures in brackets are percentages

It has been observed from Table 4.06 that the farm activities of female cultivators and agricultural labourers are not spread uniformly for the whole year. June to August are the busy months where a little over 40 percent of labour time of female cultivators are used in transplanting activities in winter rice in the groups, although labour force participation rate in group A is the highest followed by group B and group C. It is an indication of possible inverse relationship between resource base and employment of women in transplanting activities i.e., greater the resource base, less is the women engagement in transplanting activities as transplanting activities is a tedious job and therefore, preference is given by female cultivators on non-farm activities. November-December is the harvesting season where around 31 percent of labour time of female cultivators is used in the groups indicating no major distinction of employment patterns of female cultivators in harvesting activities in various groups as it is less tedious than transplanting activities. January-May and September-October is the lean period where 28 percent of labour time of female cultivators is used in group A, 27 percent in group B and 24 percent in group C as against about 8 percent in Sep-Oct in group A and B and about 10 percent in group C as these months corresponds to the cultivation of summer and autumn rice with scanty or deficient rainfall and therefore demand for female cultivators in farm activities are comparatively lower.

June-August is also busy months for agricultural labourers where around 42 percent of labour time of labourers is used in transplanting activities in winter rice in group A and C, and 41 percent in group B indicating no major distinction of female labour employment in various groups particularly in kharif crop. November-December is the harvesting period of winter rice and, therefore, 25 percent of labour time of female agricultural labourers is employed in group A and B and 24 percent of labour time in group C indicating almost same percentage of labour time use in various groups. Jan-May are the lean months where 18 percent of labour time of labourers are employed in group A, 16 percent in group B and 15 percent in group C as these months correspond to the cultivation of summer and autumn rice with inadequate rainfall. September-October is also the lean months where labour time use of female cultivators and labourers are the minimum. It is only 7-8 percent in the three groups as farm activities in these months are almost nil except minor irrigation in some selected plot of land and second time application of chemical fertilizer on winter rice known as 'topdressing'.

4.03. Female Cultivators and Agricultural Labourers in livestock and poultry related activities:

Female cultivators and agricultural labourers also spend considerable amount of time in economically productive allied activities. While some of these are recorded as such, it is more often the case that labour time spent on some of these activities is unaccounted for, or termed as 'household work'. A suitable example of unaccounted labour time is provided by the time spent in care of animals. In fact, female cultivators and agricultural labourers spend as much time in the care of livestock as in crop production activities.

Table 4.07
Female Cultivators and Agricultural Labourers in Livestock and Poultry related activities.
Number of Days (8 hrs) spent

Cultivators		Livestock activities							
Group	Cleaning Cattle/ Poultry Shed	Collection of fodder/ Preparation of feeds	Feeding	Grazing Cattle	Milking	Processing Livestock Products	Maintaining Poultry/Ducks	Attending Sick / Pregnant Animals	Total Working Days
A	11.52 (13.5)	15.71 (18.4)	9.73 (11.4)	6.91 (8.1)	7.51 (8.8)	6.31 (7.4)	15.50 (18.15)	9.56 (11.2)	85.4
B	9.96 (13.77)	13.58 (18.78)	9.1 (12.58)	5.84 (8.07)	6.12 (8.46)	5.2 (7.19)	13.2 (18.27)	8.30 (11.47)	72.3
C	8.80 (13.56)	12.42 (18.70)	8.1 (12.19)	5.62 (8.46)	5.48 (8.25)	4.62 (6.95)	13.56 (20.42)	7.80 (11.74)	66.4
Total	30.28 (13.51)	41.71 (18.61)	26.93 (12.01)	18.37 (8.19)	19.11 (8.52)	16.13 (7.19)	42.26 (18.85)	25.66 (11.45)	224.10
Labourers									
A	8.40 (13.52)	11.85 (19.08)	7.9 (12.72)	5.12 (8.24)	5.0 (8.05)	3.98 (6.40)	13.05 (21.01)	6.8 (10.95)	62.1
B	7.12 (12.62)	10.40 (18.43)	6.8 (12.05)	4.90 (6.68)	4.98 (8.82)	4.1 (7.26)	11.9 (21.09)	6.2 (10.99)	56.4
C	6.14 (12.73)	9.39 (19.48)	5.7 (11.82)	3.80 (7.88)	3.98 (8.25)	3.2 (6.63)	10.59 (21.97)	5.4 (11.20)	48.2
Total	21.66 (12.99)	31.64 (18.98)	20.4 (12.23)	13.82 (8.29)	13.96 (8.37)	11.28 (6.76)	35.54 (21.31)	18.4 (11.03)	166.70

Source: Field survey

N.B.: Figures in brackets are percentages

It has been observed from Table 4.07 that the total labour time use of female cultivators are 224.10 days where around 38 percent of labour time is used in group A, 34 percent in group B and around 32 percent in group C, indicating no major distinction of labour time use of female cultivators in livestock and poultry related activities among the group of villages. One possible reason for this is because of the presence of higher livestock base among the group of villages of cultivators. Collection of fodder/ preparation of feeds and maintaining poultry/ ducks accounts for 37 percent of total labour time use in livestock activities followed by 26 percent in cleaning cattle/ poultry shed and feeding and 35 percent of labour time use in rest of the activities like grazing cattle, milking, processing livestock products and attending to sick/ pregnant animals. In respect of groups, around 36 percent of labour time of female cultivators are used in collection of fodder/ preparation of feeds and maintaining poultry/ ducks in group A, 37 percent in group B and 39 percent in group C, indicating no major distinction of labour time use of cultivators in dairy and poultry farming as livestock base among group of cultivators are almost same. Cleaning cattle/poultry shed and feeding of livestock accounts for 25-26 percent of labour time use to the total working days in the three groups. In rest of the activities like grazing cattle, milking, processing livestock products and attending sick/ pregnant animals almost 35 percent of labour time of female cultivators are used in group A, B and C indicating no major differences among the groups as they have almost similar livestock base.

The total labour time use of agricultural labourers in livestock activities are 166.70 days where 37 percent of labour time is used in group A, 34 percent in group B and 29 percent in group C indicating no major distinction of labour time use of labourers in livestock and poultry related activities in various groups as they may have almost same livestock base. Collection of fodder/preparation of feeds and maintaining poultry/ ducks accounts for around 40 percent of labour time use to the total working days, 25 percent in cleaning/ poultry shed and feeding of livestock and 34 percent in rest of the activities like grazing cattle, milking, processing livestock products and attending sick/ pregnant animals as against 37, 25 and 35 percent of labour time of female cultivators used in the same activities, as mentioned earlier. It indicates that there is no major distinction between female cultivators and agricultural labourers regarding their use of labour time in cleaning/ poultry shed, feeding of livestock and other activities like grazing cattle, milking, processing livestock

products and attending sick/ pregnant animals except marginal difference (2.83) between cultivators and labourers on activities like collection of fodder/preparation of feeds and maintaining poultry/ ducks, although livestock base of cultivators are higher than labourers. In respect of groups 40-41 percent of labour time of agricultural labourers are used their labour time in collection of fodder/ preparation of feeds and maintaining poultry/ ducks in group A, B and C. Cleaning cattle/ poultry shed and feeding of livestock accounts for 24-26 percent of labour time use to the total working days in group A, B and C. In rest of the activities like grazing cattle, milking, processing livestock products and attending sick/ pregnant animals about 33 percent of labour time of female agricultural labourers are used in group A, 36 percent in group B and 34 percent in group C indicating no major distinction of labour time involvement of agricultural labourers in various activities of dairy farming in all the three groups. Subsistence farming may be an influencing factor for involvement of almost same labour time in various livestock and poultry related activities to supplement their income. Although labourers are less economically affluent than cultivators, yet livestock base of both the two groups may be the same due to the presence of 'livestock sharing' system under which the labourers are allowed to borrow livestock from cultivators and the income derived from such livestock are generally divided equally between the two groups.

4.04. Female Cultivators and Agricultural Labourers in Sericulture:

It has been observed that Eri (*Philosomia recini*) and Muga (*Antherea asama*) are two important sericultural activities in which female cultivators and agricultural labourers are engaged in belonging particularly to the Bodo women (Plain tribe). Two or three batches of Eri/Muga are reared per year depending on availability of seed cocoons, host plants and family labour. They are engaged in the entire gamut of activities of collecting leaves, feeding, ensuring that predators/ birds/ insects are kept away, reeling, spinning and weaving as depicted in table 4.08.

Table 4.08
Female Cultivators and Agricultural Labourers in Seri cultural activities
Number of Days (8 hrs) spent

Cultivators							
Group	Seri cultural activities						Total Working Days
	Collecting leaves	Feeding	Keeping away of Predators/ birds/ insects	Reeling	Spinning	Weaving	
A	8.3 (19.62)	10.0 (23.63)	4.6 (10.87)	9.2 (21.74)	4.2 (9.92)	6.0 (14.18)	42.3
B	7.2 (18.50)	9.2 (23.65)	4.8 (12.33)	8.2 (21.07)	3.6 (9.25)	5.9 (15.16)	38.9
C	6.4 (16.71)	9.4 (24.54)	4.2 (10.96)	8.8 (22.97)	3.1 (8.09)	6.4 (16.71)	38.3
Total	21.9 (18.32)	28.6 (23.33)	13.60 (11.38)	26.20 (21.92)	10.90 (9.12)	18.30 (15.31)	119.50
Labourers							
A	7.4 (16.01)	11.6 (25.10)	4.6 (9.95)	8.4 (18.18)	7.3 (15.80)	6.9 (14.93)	46.20
B	6.6 (16.05)	9.2 (22.38)	4.2 (10.21)	8.2 (19.95)	6.7 (16.30)	6.2 (15.08)	41.10
C	6.1 (16.26)	7.8 (20.8)	4.4 (11.73)	7.2 (19.20)	6.60 (17.60)	5.4 (14.40)	37.50
Total	20.1 (16.10)	28.6 (22.91)	13.20 (10.57)	23.80 (19.07)	20.6 (16.50)	18.50 (14.82)	124.80

Source: Field survey

N.B.: Figures in brackets are percentages

It has been observed from Table 4.08 that the total working days of female cultivators in sericultural activities were 119.50 days where almost 38 percent of labour time were used in group A, 33 percent in group B and 30 percent of labour time in group C indicating higher involvement of labour time in group A followed by group B and group C as group A contains more 'Bodo' (Plain tribe) population (Jalah and Baghmara) than group B (Khoirabari, Kalpani and Nichuka) and group C (Puthimari, Akaya and Bhogpur). It is evident that sericultural activities in our sample village is still traditional and family-based as total labour days used by female cultivators in this activity is only 119.50 days in comparison to 318.34 days in agriculture and 224.10 days in poultry and dairy farming. Feeding and reeling accounts for almost 46 percent of labour time to the total working days followed by 34 percent in collecting leaves and weaving, and 21 percent in rest of the activities like keeping away of predators/ birds/ insects and spinning indicating that the female cultivators is mostly used in unpaid/ low paid sericultural jobs. Similar phenomenon has been observed in various groups where almost 47 percent of labour time of female

cultivators were used in feeding and reeling activities in group A, 44 percent in group B and 42 percent in group C in comparison to 35 percent of labour time use in collecting leaves and weaving in group A followed by 32 percent in group B and 30 percent in group C. In rest of the activities like keeping away of predators/ birds/ insects and spinning, 21 percent of labour time of female cultivators was used in group A, 19 percent in group B and 17 percent in group C.

On the other hand, the total working days used by agricultural labourers in sericultural activities is 124.80 days which is marginally higher than cultivators as the difference of labour time use between cultivators and labourers is only 5.3 (2.16 percent) days. Out of total working days, 37 percent of labour time of labourers were used in group A, 34 percent in group B and 30 percent in group C indicating the same – more tribal population in group A than group B and group C. Feeding and reeling accounts for almost 42 percent of labour time use followed by 31 percent in collecting leaves and weaving and 27 percent in rest of the activities in comparison to 46 percent of labour time of female cultivators in feeding and reeling and 34 percent in collecting leaves and weaving indicating that labour time use of cultivators in these activities are higher than labourers which may be due to higher resource base of cultivators than labourers. For rest of the activities like keeping away of predators/ birds/ insects and spinning, 27 percent of agricultural labourers used their labour time as against 20 percent of cultivators indicating that labourers use their labour time more in tedious jobs than cultivators. In respect of groups, 44 percent of labour time of labourers is used in feeding and reeling in group A, 42 percent in group B and 40 percent group C as group A contains more tribal women than group B and C. Collecting leaves and weaving, accounts for almost 31 percent of labour time use of agricultural labourers in group A, and 30 percent in group B and C indicating no major distinction of labour time use in these activities. In rest of the activities like keeping away of predators/ birds/ insects and spinning 26 percent of labourers use their labour time in group A, 27 percent in group B and 29 percent in group C indicating that more labour time use by agricultural labourers in unpaid sericultural activities in group C out of necessity followed by group B and group A.

4.05. Female Cultivators and Agricultural Labourers in Handloom and Weaving:

Also important among other non-farm activities, is handloom and weaving, in which significant per cent of female cultivators and agricultural labourers are engaged in (Table 4.09).

Table 4.09
Female Cultivators and Agricultural Labourers in Handloom Weaving
Number of Days (8 hrs) spent

Cultivators		Handloom and Weaving activities							Total Working Days
Group	Purchase Yarn	Washing	Dyeing	Starching	Operation of 'Chekeri'	Passing the threads through Bamboo Comb	Weaving	Polishing	
A	5.20 (9.17)	3.92 (6.91)	4.33 (7.63)	3.04 (5.36)	6.87 (12.11)	7.04 (12.41)	21.87 (38.57)	4.33 (7.63)	56.70
B	4.98 (9.17)	3.62 (6.66)	4.10 (7.55)	3.82 (7.03)	6.07 (11.17)	6.98 (12.85)	21.11 (38.87)	3.62 (6.66)	54.30
C	3.78 (7.39)	2.90 (5.67)	3.91 (7.64)	3.69 (7.21)	5.98 (11.69)	7.10 (13.88)	20.75 (40.59)	3.01 (5.88)	51.12
Total	13.96 (8.61)	10.44 (6.43)	12.34 (7.61)	10.55 (6.50)	18.92 (11.67)	21.12 (13.02)	63.73 (39.31)	10.96 (6.76)	162.12
Labourers									
A	1.8 (3.71)	2.9 (5.99)	3.8 (7.85)	2.4 (4.95)	6.7 (13.84)	7.2 (14.87)	22.6 (46.69)	1.00 (2.06)	48.40
B	1.6 (3.36)	2.8 (5.89)	3.6 (7.57)	2.6 (5.47)	6.8 (14.31)	7.0 (14.73)	21.80 (45.89)	1.34 (2.82)	47.50
C	1.7 (3.72)	2.4 (5.25)	3.5 (7.66)	2.3 (5.03)	6.4 (14.01)	6.9 (15.11)	20.72 (45.37)	1.74 (3.81)	45.66
Total	5.1 (3.60)	8.1 (5.72)	10.9 (7.69)	7.3 (5.15)	19.9 (14.05)	21.1 (14.90)	65.12 (45.98)	4.08 (2.88)	141.60

Source: Field survey

N.B.: Figures in brackets are percentages

It has been observed from Table 4.09 that the total working days of female cultivators in handloom and weaving is 162.12 days as against 141.60 days of agricultural labourers where 56.70, 54.30 and 51.12 days of cultivators used their labour time in group A, B and C respectively. Agricultural labourers however spend lesser number of days in each group of villages. Labour time involvement of female cultivators in handloom weaving is more than agricultural labourers as the cultivators have greater number of commercial looms than labourers, although the number of commercial looms is very few. Weaving is the major activity where labour time use

of female cultivators is, however, lower than labourers. This is particularly because the labourers use their labour time when hired for the few commercial looms owned by cultivators. Operation of 'chereki' and passing threads through bamboo combs is a time consuming and tedious job and around 30 percent of labour time of agricultural labourers is used on this activity as against only 15 percent by cultivators indicating reluctance on the part of cultivators to engage themselves in tedious job of handloom and weaving which may be due to better economic condition of cultivators than labourers. Purchase of yarn relate to financial matter and only 4 percent of labour time is used by labourers on it, in comparison to almost 9 percent of labour time of cultivators indicating that the role of labourers in decision making activities is less than cultivators. In rest of the activities like washing, dying, starching and polishing 27 percent of labour time is used by cultivators in comparison to 21 percent of labourers as these activities are less tedious and less time consuming.

In respect of groups, there is very little variation of labour time use of cultivators in weaving activities. Similar observation has been made for labour time use of agricultural labourers in the groups, although the labourers spent 20 percent more labour time in weaving than cultivators. Thus, there is no major distinction of labour use in weaving within various groups of cultivators and labourers, although labour time use of labourers in weaving as a whole is higher than cultivators. In the activities like operation of 'chereki' and use of bamboo combs for the purpose of passing threads, around 24 percent of labour time is used by cultivators in groups A, B and C as against 29 percent of labour time by labourers in the same group. It indicate that the labour time use of labourers is higher than cultivators in some selected handloom activities as the cultivators are reluctant to use their labour time in tedious and time consuming job owing to better earnings from crop cultivation, dairy and poultry farming than agricultural labourers. The time spent by labourers in the purchase of yarn is almost negligible between various groups reflecting no major distinction in decision making capacity of labourers in groups as the society is mainly male dominated. However, the labour time use of cultivators in the purchase of yarn is comparatively higher in group A and B with 9 percent and lower in group C with only 7 percent indicating that group A and B can enjoy more independence in the purchase of yarn than group C. In rest of the activities like washing, dying, starching and polishing, 27 percent of labour time of cultivators is spent in group A, B and C as against 21-22 percent by labourers in the same groups indicating no major distinction

of labour time use between various groups, although the labour time use of cultivators is higher than labourers.

4.06. Female Cultivators and Agricultural Labourers in Food Processing:

Food Processing, particularly preparing varieties of rice products both for domestic consumption and sale, is done by female cultivators and agricultural labourers and they spent significant labour time as is depicted in Table 4.10

Table 4.10.
Female Cultivators and Agricultural Labourers in Food Processing
Number of Days (8 hrs) spent

Cultivators	Food Processing activities		Total Working Days
	Domestic Consumption	Commercial	
A	16.8 (63.15)	9.8 (36.84)	26.6
B	15.8 (63.20)	9.2 (36.80)	25.0
C	15.6 (63.15)	8.4 (34.00)	24.7
Total	48.2 (62.84)	27.4 (35.72)	76.7
Labourers			
A	15.2 (61.29)	9.6 (38.70)	24.8
B	14.3 (60.08)	9.5 (39.91)	23.8
C	13.84 (59.91)	9.26 (40.08)	23.1
Total	43.34 (60.44)	28.36 (39.55)	71.7

Source: Field survey

N.B.: Figures in brackets are percentages

It has been observed from Table 4.10 that the female cultivators used 76.7 days of labour time in food processing where around 63 percent were used in domestic consumption as against 36 percent in commercial purpose. On the other hand, the agricultural labourers used 71.7 days of labour time in food processing where around 60 percent were used in domestic consumption as against 40 percent in commercial purpose. It indicates that the agricultural labourers used more labour time than cultivators in commercial food processing as the labourers are landless and, therefore, they compel to use more of labour time in commercial food processing out of necessity particularly during lean period of crop cultivation. In respect of groups, the total working days in food processing for cultivators is 26.6, 25.0 and 24.7 days in group A, B and C respectively as against 24.8 days of agricultural labourers in group

A followed by 23.8 days in group B and 23.1 days in group C. Domestic consumption accounts for about 63 percent of labour time of female cultivators in group A, B and C as against 60-61 percent of labourers in the same group indicating no major distinction of labour time use of female cultivators and labourers in domestic consumption. But the percentage of labour time use of female cultivators in commercial consumption accounts for around 37 percent in group A and B and 34 percent in group C as against higher percent of labour time of labourers which is around 38-40 percent in the three groups as the labourers compel to pay particular attention to use their labour time in commercial food processing particularly during lean season of crop cultivation to supplement their income.

4.07. Women's Work in Aggregate:

Taking into account all the activities of female cultivators and agricultural labourers, it is being observed that they spent a significant labour time in rural household as in evident in Table 4.11.

Table 4.11
Aggregate Labour Time of Women Workers
Person days (8 hrs per worker)

Cultivators						
Groups	Crop Cultivation	Livestock and Poultry related activities	Sericultural activities	Handloom Weaving	Food Processing	Total Working Days
A	118.63 (35.98)	85.4 (25.90)	42.3 (12.83)	56.70 (17.20)	26.6 (8.06)	329.63 (36.61)
B	105.44 (35.62)	72.3 (24.43)	38.9 (13.14)	54.30 (18.34)	25.0 (8.44)	295.94 (32.86)
C	94.27 (34.30)	66.4 (24.16)	38.3 (13.93)	51.12 (18.60)	24.7 (8.98)	274.79 (30.52)
Total	318.34 (35.35)	224.10 (24.89)	119.50 (13.27)	162.12 (18.00)	76.7 (8.51)	900.36
Labourers						
A	91.21 (33.44)	62.1 (22.77)	46.20 (16.94)	48.40 (17.74)	24.8 (9.09)	272.71 (36.72)
B	79.23 (31.94)	56.4 (22.73)	41.10 (16.57)	47.50 (19.15)	23.8 (9.59)	248.03 (33.39)
C	67.43 (30.38)	48.2 (21.72)	37.50 (16.90)	45.66 (20.57)	23.1 (10.41)	221.89 (29.87)
Total	237.87 (32.03)	166.70 (22.44)	124.80 (16.80)	141.60 (19.06)	71.7 (9.65)	742.63

Source: Field survey

N.B.: Figures in brackets are percentages

The aggregate number of working days of female cultivators is 900.36 days where around 37 percent of labour time is used in Group A, 33 percent in Group B and 31 percent in Group C. It means labour time utilisation of cultivators is marginally higher in group A followed by group B and C. By activities, the evidence presented in Table 4.11 indicates that crop cultivation accounted for almost 35 percent of labour time of female cultivators to the total working days followed by 25 percent in livestock and poultry related activities, 13 percent in Sericultural activities, 18 percent in handloom weaving and around 8 percent in food processing. In respect of groups approximately 36 percent of labour time of female cultivators were used in crop cultivation in Group A and B and 34 percent in Group C. Livestock and Poultry related activities accounted for 26 percent of labour time of female cultivators in Group A, 24 percent in Group B and C. Sericultural activities accounted for almost 13 percent of labour time of female cultivators in Group A, 13 and B and 14 percent in Group C. But handloom weaving accounted for around 17 percent, 18 percent and 19 percent of labour time of female cultivators in Group A, B and C respectively. On the other hand food processing accounted for around 8-9 percent of labour time of female cultivators in the three groups. But most important to note is that only a little over one third of female cultivators – the 318.34 days spent in crop cultivation is visible and recognised as ‘work’.

On the other hand, the total working days of female agricultural labourers is 742.63 days where 272.71 days of labour time were used in Group A, 248.03 days in Group B and 221.89 days in Group C. It means almost 37 percent of labour time to the total working days were used in Group A, followed by 33 percent in Group B and 30 percent in Group C. By activities, crop cultivation accounted for around 32 percent of labour time of female agricultural labourers to the total working days followed by 22 percent in livestock and poultry related activities, 17 percent in sericultural activities, 19 percent in handloom weaving and 10 percent in food processing. In respect of groups 33.44 percent of labour time of agricultural labourers were used in crop cultivation in Group A, 31.94 percent in Group B and 30.38 percent in Group C. Livestock and poultry related activities accounted for around 23 percent of labour time of female agricultural labourers in Group A and B and 22 percent in Group C. Sericultural activities accounted for almost 17 percent of labour time of female agricultural labourers in the three Groups. But handloom weaving accounted for almost 18 percent, 19 percent and 21 percent of labour time of female agricultural

labourers were used in Group A, B and C respectively. On the other hand, food processing accounted for 9-10 percent of labour time of female agricultural labourers in Group A, B and C respectively. But, the number of days which is visible and accounted as 'work' for labourers is only 237.87 days spent in crop cultivation indicating 80.47 days less than cultivators. Moreover, almost 65 percent of labour days used by cultivators are not considered as 'work' as against 68 percent of labourers indicating percentage of time involvement of labourers in non-farm activities are higher than labourers as they are landless and such time involvement is invisible and do not considered as 'work'

4.08. Differences in Labour Time Use of Female Cultivators and Agricultural Labourers:

The difference of the labour time use of female cultivators and agricultural labourers is analysed in table 4.12.

Table 4.12
Difference in the labour time Use of Female & Agricultural Labourers

	A	B	C	Total
Time Spent by Cultivators	329.63	295.94	274.79	900.36
Time Spent by labourers	272.71	284.03	221.89	742.63
Difference	56.92	47.91	52.9	157.73
Percentage of difference	9.44	8.80	10.65	9.60

It has been observed from Table 4.12 that the difference of labour time use of female cultivators and agricultural labourers is 157.73 days i.e. around 10 percent. Similarly, in the three groups the cultivators is having more labour time use than the labourers and the percentage of difference is around 9 points in group A and B and around 11 points in group C. The difference is higher in group C followed by group A and B indicating more inequalities in the use of labour time among cultivators and labourers in group C. The possible reason for greater inequality of labour time use of group C workers may be the higher resource-base of cultivators and landlessness of labourers.

4.09. Variation of Labour Time use of Female Cultivators and Agricultural Labourers:

Group wise variation of labour time use of female cultivators and agricultural labourers is studied and is given in Table 4.13.

Table 4.13
Co-efficient of variation of labour time used

Cultivators			
Groups	Mean	S.D.	C.V
A	65.92	6.84	10.37
B	59.18	8.05	13.60
C	54.95	7.24	13.18
Total	60.01	7.37	12.38
Labourers			
A	54.54	6.62	12.13
B	49.60	5.79	11.67
C	44.37	4.85	10.93
Total	148.51	5.75	11.57

To compare the variation of labour time use of female cultivators and agricultural labourers the co-efficient of variation has been calculated and the result is represented in Table 4.13. It has been observed that the co-efficient of variation of cultivators is around 12 percent as against around 11 percent of labourers indicating that the labour time use of female cultivators is more inconsistent than labourers. The possible reason may be the higher resource base of cultivators than labourers with regular flow of income as they have their own land and reluctance on the part of cultivators to engage themselves in low paid and tedious job and intensity to use more labourers on hire basis. In respect of groups, the coefficient of variation (C.V.) of the cultivators is around 10, 14 and 13 percent in group A, B and C respectively indicating that the labour time use of group A and C is more consistent than group B as group A and C have more tribal (Bodo women) women than group B. It has been observed during field study that the tribal women use more labour time in agriculture and allied activities may be due to their poverty. Being dominated mainly by non-tribe women, the labour time use of group B villages is comparatively inconsistent, though the CV of this group is only 1 percent less than group C and around 4 percent less than group A. On the other hand the CV of group A and B is around 12 percent as against 11 percent of group C. It indicates that the labour time use of group C labourers is comparatively more consistent than group A and B as group C labourers

use more labour time in non-farm activities, particularly handloom weaving and food processing than group A and B.

4.10. Analysis of Variance of Labour Time-use of Female Cultivators and Agricultural Labourers:

Group wise labour time use of female cultivators and agricultural labourers has been analysed using ANOVA technique (one-way classification model) and the result is represented in Table: 4.14.

Table 4.14
ANOVA technique (One-way Classification Model)

Cultivators					
Source of Variation	Degree of freedom	Sum of Squares	Mean sum Of Squares	Variance Ratio	Critical value at 5% level of significance
Between Groups	2	310	155	F = 0.156	$F_{0.5} = 3.8853$
Within Groups	12	11890	990.83		
Total	14	12200			
Labourers					
Between Groups	2	255	127.5	F = 0.302	$F_{0.5} = 3.8853$
Within Groups	12	5056	421.33		
Total	14	5311			

It has been observed from Table 4.14 that the variance ratio (F) is 0.156 for female cultivators and 0.302 for female agricultural labourers in our sample villages as against critical value at 5 percent level of significance ($F_{0.5}$) 3.8853 indicating that $F < F_{0.5}$ and, therefore, the difference in the labour time use of female cultivators and agricultural labourers among various groups is statistically insignificant. In other words, there is no significant difference among group A, B and C of labour time use of female cultivators and agricultural labourers.

4.11. Comparison of labour time use of Female Cultivators and Agricultural Labourers within the Groups:

The labour time use of female cultivators and agricultural labourers is compared within the groups using "Z" test as given in Table 4.15

Let the labour time use of female cultivators and agricultural labourers be μ_1 and μ_2 . Let the null hypothesis (H_0) be $\mu_1 = \mu_2$ against the alternative hypothesis (H_1) be $\mu_1 > \mu_2$.

The test statistic is
$$Z = \frac{\bar{X}_1 - \bar{X}_2}{SE(\bar{X}_1 - \bar{X}_2)}$$

Where
$$SE(\bar{X}_1 - \bar{X}_2) = \sqrt{\frac{\delta_1^2}{n_1} + \frac{\delta_2^2}{n_2}}$$

The results are given in Table 4.15.

Table 4.15: 'Z' Test

Group	Labour Time Use		Mean		SD		Z Value	SE at 5% level of significance
	Cultivators	Labourers	Cultivators	Labourers	Cultivators	Labourers		
A	329.63	272.71	66	54	32.70	21.78	0.056	1.96
B	295.94	248.03	59	50	27.80	18.12	0.067	1.96
C	274.79	221.89	55	44	23.13	14.14	0.082	1.96

It has been observed from Table 4.15 that the calculated values of Z in all the groups (group A, B and C) are less than 1.96 SE at 5% level of significance, therefore, we may accept the null hypothesis (H_0) and reject the alternative hypothesis (H_1) i.e. labour time use of female cultivators and agricultural labourers within the groups provides no evidence of difference, although, the cultivators have their own land as against landlessness of labourers. It indicates that resource base particularly land ownership play a minor role for use of labour time of cultivators and labourers.

Conclusion

As agriculture is the mainstay in the economy of our sample villages, the contribution of female cultivators and agricultural labourers in terms of labour hours in the cultivation of both food and cash crops is significant. However, majority of female cultivators and agricultural labourers are engaged in food crop production rather than cash crops indicating predominance of subsistence family farming adopted by both the sections of the society. The labour time involvement of both the sections of the society is more in rice cultivation than pulses and vegetables as rice is the major food crops in our study area. In respect of groups, there is no major distinction of

labour time use of female cultivators and agricultural labourers in both food crops and cash crops. It indicates that there is no major distinction in farming methods in crop production for both cultivators and labourers. It has also been observed that the labour time involvement of cultivators and labourers is high during normal rainfall and low during dry months indicating the practice of traditional methods of cultivation and lack of adequate irrigational facilities. Moreover, the female cultivators prefer to use more labour time in farm works for their livelihood as they have their own land to cultivate. But, agricultural labourers do not have their own land. They prefer more to use their labour time in casual works. Further, there is also considerable specificity to the operation in which female cultivators and agricultural labourers participate in crop production. Transplanting and harvesting is the major farm activity where almost 60 percent of labour time of cultivators and labourers are used. There is also great deal of seasonality of labour time use of female cultivators and labourers. June to August is the busy months where almost 40 percent of labour time of cultivators and labourers are used in transplanting activity. November-December is the harvesting season where more than 31 percent of labour time of cultivators and labourers is used. But January-May and September-October is the lean period where around 28 percent of labour time is used by cultivators and labourers. The female cultivators and agricultural labourers also spend considerable time in economically productive allied activities like livestock and poultry farming, sericulture, handloom weaving and food processing. Combining labour time use in all the activities it has been found that the labour time use of cultivators is almost 10 percent more than labourers.

However, the analysis of variance of labour time use of female cultivators and agricultural labourers between groups (group A, B and C) using ANOVA technique in our sample villages provides no evidence of difference. Similarly, the analysis of variance of labour time use of female cultivators and agricultural labourers within the two groups using z-test shows no significant differences i.e., labour time use of female cultivators and agricultural labourers are almost the same, although the cultivators have their own land as against landlessness of labourers. Thus there is no inter-village and intra-village difference regarding labour time use of female cultivators and agricultural labourers.

CHAPTER V

COMPOSITION OF INCOME AND CONSUMPTION EXPENDITURE OF HOUSEHOLDS IN BARPETA DISTRICT

5. Composition of income and consumption expenditure of cultivators and agricultural labourers in the study villages:

The relative share of the different sources in the income and consumption expenditure of the female cultivators as well as of the agricultural labourers is important in the present context. The average income, per capita income and percentage share of the different sources of income among the study groups is being analysed in this chapter. The average income and consumption expenditure of the female cultivators and agricultural labourers in respect of various groups and categories is also highlighted in this chapter to observe the differential earnings and the differential consumption expenditure among the cultivators and labourers. The primary data on income and consumption has been collected during last two weeks prior to the date of interview.

5.01. Average Income from different sources:

Table 5.01 depicts the average income earned from various sources by the female cultivators and agricultural labourers in the study region.

It has been observed from Table 5.01 that the farm income is the major source of earnings for female cultivators in all the groups of villages under study. The average income earned by the female cultivators for all the groups is Rs.259410.72 i.e. around 48 percent to their annual average income. In respect of groups, cultivators in group A earn the highest with around 49 percent to the average income and the lowest being earned by group C with about 47 percent, indicating a difference of only 2 percent. In the absence of landholding by agricultural labourers, there is no farm income for this section of the rural society.

Income from permanent / family labour:

The female cultivators along with their other family members perform the jobs on their own farms. Agricultural labourers are also engaged as permanent or casual labourers. As the cultivators have their own land, therefore, the percentage of income of the permanent labourers to the average income among female cultivators in all

groups has been calculated at around 29 percent as against 22 percent of the agricultural labourers indicating that the cultivators are earning approximately 6 percent more than labourers. In respect of groups, there is no major distinction of income earned by cultivators as permanent labourers and it is around 28-29 percent to their respective annual average income. Similar phenomenon has been observed for the groups of villages of agricultural labourers where the income earned as permanent labourers varies from 21-24 percent to their respective average income indicating that the labourers are earning almost 5-7 percent less than cultivators in various groups as they are basically landless and are compelled to cultivate on the land owned by cultivators on hired basis.

Table 5.01
Farm and Non-farm Income of Female Cultivators and Agricultural Labourers
in group A, B & C of study villages

(in Rs.)

Groups	Female Cultivators				Agricultural Labourers			
	A	B	C	Average	A	B	C	Average
Income Source								
A. Farm Income								
1. Net Farm Income	317817.24 (48.77)	234836.34 (47.27)	225578.60 (46.89)	259410.72 (47.76)	---	---	---	---
2. Income from Permanent/ Family Labour	188752.20 (28.96)	145359.18 (29.26)	137902.70 (28.66)	157338.02 (28.97)	110900.25 (22.18)	106003.80 (24.02)	78348.80 (21.31)	98417.61 (22.56)
3. Income from Casual Labour	15394.08 (2.36)	12604.04 (2.53)	12371.45 (2.57)	13456.52 (2.47)	304048.50 (60.81)	254706.20 (57.73)	216801.28 (58.98)	258518.66 (59.26)
4. Income from Crop Sharing	3752.58 (0.57)	3126.89 (0.62)	2683.85 (0.55)	3187.77 (0.58)	21487.98 (4.29)	23755.90 (5.38)	18671.36 (5.08)	21305.08 (4.88)
5. Income from Subsidiary Occupations								
(a) Dairy	33547.80 (5.14)	26456.96 (5.32)	30451.20 (6.33)	30151.98 (5.55)	17522.55 (3.50)	15755.60 (3.57)	4389.76 (1.19)	12555.97 (2.87)
(b) Poultry	26561.34 (4.07)	22300.28 (4.48)	24031.15 (4.99)	24297.59 (4.47)	11743.80 (2.34)	11886.00 (2.69)	14238.08 (3.87)	12622.62 (2.89)
(c) Sale of manures	4857.84 (0.74)	4107.77 (0.82)	4063.80 (0.84)	4343.13 (0.79)	2266.65 (0.45)	2102.80 (0.47)	10298.24 (2.80)	4889.23 (1.12)
(d) Miscellaneous	12278.76 (1.88)	8620.89 (1.73)	8905.65 (1.85)	9935.10 (1.82)	1817.46 (0.36)	1518.30 (0.34)	1560.32 (0.42)	1632.02 (0.37)
Sub-Total (5)	77245.74 (11.85)	61485.90 (12.37)	67451.80 (14.07)	68727.80 (12.67)	33350.46 (6.67)	31262.70 (7.08)	30486.40 (8.29)	31699.84 (7.26)
Sub-Total (A)	602961.84 (92.53)	457412.35 (92.09)	445988.40 (92.71)	502120.83 (92.45)	469787.19 (93.97)	415728.60 (94.23)	344307.84 (93.67)	409941.19 (93.97)
B. Non-Farm Income								
(a) Salaries	24197.16 (3.71)	20684.91 (4.16)	19536.40 (4.06)	21472.82 (3.95)	17453.55 (3.49)	15831.20 (3.58)	14165.76 (3.85)	15816.83 (3.62)
(b) Pensions	7638.54 (1.17)	6127.15 (1.23)	5918.90 (1.23)	6561.53 (1.20)	3416.19 (0.68)	2127.30 (0.48)	2496.00 (0.67)	2679.83 (0.61)
(c) Interest	3994.38 (0.61)	3262.23 (0.65)	3055.00 (0.63)	3437.20 (0.63)	3112.59 (0.62)	2066.40 (0.46)	1969.02 (0.53)	2382.97 (0.54)
(d) Miscellaneous	12809.16 (1.96)	9211.83 (1.85)	6507.15 (1.35)	9509.38 (1.75)	6154.80 (1.32)	5387.20 (1.22)	4602.88 (1.25)	5381.62 (1.23)
Total Income (B)	48639.24 (7.46)	39286.12 (7.90)	35017.45 (7.28)	40980.93 (7.54)	30137.13 (6.02)	25412.10 (5.76)	23234.56 (6.32)	26261.25 (6.02)
Total (A + B)	651601.08	496698.47	481005.85	543101.76	499924.32	441140.70	367542.40	436202.44

Source: Field survey

N.B.: Figures in brackets are percentages

Since only a few cultivators are performing casual labour, so they earn approximately 2 percent to the average earnings from this source in all groups. But most of the agricultural labourers are performing casual labour, so they are earning around 59 percent to the average earnings from this source in all groups. In respect of groups of cultivators, the income earned as casual labour is almost negligible i.e. only around 2-3 percent. In contrast to this, the labourers are earning almost 58- 61 percent to the average income from casual labour in group A,B and C indicating little variation of income earned from casual labour among the groups of villages of labourers as labour time use as casual labour was almost same. A few cultivators are also performing farm jobs on crop sharing basis and they are earning less than 1 percent in all groups from this source and among the groups also the difference is almost negligible. But the labourers are earning almost 5 percent to the average income in all groups from crop sharing. In respect of groups, it varies from 4-5 percent to their respective average income.

While looking at the Table 5.01, it becomes clear that farm income is the main source of income for the cultivators while labour in the casual form is the main source of income of the labourers. The income from the family / permanent labour of the cultivators is higher than the labourers because of the fact that the cultivators can get opportunity to engage in some job or the other on their own farm but the labourers cannot enjoy such opportunities. However, the labourers are also earning from permanent / family job as because they are taking advance from the employer cultivator to fulfill their major financial requirements, although income earned by the labourers is lower than cultivators from this source.

Income from subsidiary occupations:

The income from subsidiary occupation is being contributed for both the cultivators as well as the labourers through different farm based activities. As the cultivators are having better resource base than labourers, they are earning around 13 percent to their average income from subsidiary sources in all groups as against only around 7 percent of labourers indicating that the labourers is earning almost half to that of the cultivators from subsidiary sources. In respect of groups of villages of cultivators, there is no major distinction between income earned from subsidiary sources and it varies from 12-14 percent. On the other hand, the agricultural labourers are earning only 7-8 percent from subsidiary sources in groups A, B and C.

Dairy farming is the major source of subsidiary occupation for both cultivators and labourers. As the cultivators are having certain facilities like their own land for fodder and space for the cattle shed, therefore they are earning almost 5 percent to the average income in all groups from dairy farming as against only 3 percent by labourers. In respect of groups, they are earning 5-6 percent from dairy farming indicating possibility of almost same livestock resources among group A, B and C. On the other hand, the group B labourers are earning maximum of around 4 percent to their total income from dairy farming as against the minimum of only 1 percent by group C labourers indicating a difference of around 3 percent between group B and group C labourers. The possible reason for such variation may be the lower livestock base of group C labourers than group B. It has been observed during survey that there is the practice of livestock sharing system in our study villages, just like crop sharing system. As income of the group B labourers is close to cultivators, therefore, group B labourers may share the livestock of their employer cultivators for dairy farming.

Poultry farming is the other source of earning. Poultry is generally reared in open grounds in the study villages. The cultivators are earning only around 4 percent to the average income from poultry farming as against 3 percent by labourers in all groups. In respect of groups of villages the earnings from poultry farming varies from 4-5 percent to their respective total earnings for cultivators as against 2-4 percent for labourers. The possible reason for lower earnings of labourers from poultry farming may be the lower poultry based resources and also lower financial resources than cultivators as they have no regular farm income due to their landlessness.

Sale of manure is another source of income of the cultivators where less than 1 percent of the average income is earned in all groups as against more than 1 percent for labourers indicating that the labourers are earning more than cultivators from this source as because cultivators use the manures mostly in their farm and the labourers mostly prefer to sale the manures as they have no land ownership. The highest income earned from sale of manure is found for group C cultivators with around 1 percent as against lowest in group A with less than one percent to their total income. But the labourers are earning maximum in group C with around 3 percent and minimum in group A with less than one percent i.e. only 0.45 percent. Income from miscellaneous sources like sale of straw, fruits, bamboo etc. is about 2 percent to the average income of cultivators as against less than 1 percent for labourers in all groups.

Non-farm income:

In respect of non-farm income, salary, pension, interest earned, etc., are the primary sources of income. The income of the cultivators from non-farm sources is around 8 percent to the average income as against around 6 percent for labourers of all groups indicating that the cultivators is earning almost 2 percent more than labourers from non-farm sources as the cultivators have better resource base than labourers. In respect of groups, the highest income is earned from non-farm sources by cultivators in group B with almost 8 percent to the total income and lowest in group C with about 7 percent. But for labourers the highest income earned from non-farm sources has been found in group C with around 6 percent to the total income and lowest in group B with around 5 percent. It indicates that there is no major distinction among the groups of villages of cultivators and labourers regarding income earned from non-farm sources as farm activities are the predominant source of income in the study villages.

Among the non-farm sources, income from salaries is contributing the maximum. It is about 3- 4 percent of the total income for cultivators and labourers in all groups. In respect of groups of cultivators and labourers the variation of income earned from salaries is almost negligible. For cultivators the maximum is being earned in group B with about 4 percent to the total income and minimum in group A with about 3 percent. On the other hand, among the labourers the maximum is being earned in group C with around 4 percent to the total income and minimum in group A with 3 percent approximately. The difference between maximum and minimum among groups of villages of cultivators and labourers is almost 1 percent. Pension is the other source of non-farm income. It is more than 1 percent of the average income for cultivators and less than 1 percent for labourers in all groups. In respect of the three groups, the difference between highest and lowest income earned from pension is negligible for both cultivators and labourers. It indicates that the benefit of old-age pension (mostly) has been enjoyed equally by both the sections, although such benefit is very small. The contribution of interest is very small for both the sections of the society. It is less than 1 percent for the cultivators and labourers in all groups. In respect of groups of cultivators and labourers there is little variability of income earned from interest indicating lower saving capabilities of these two sections of society. The miscellaneous sources such as weaving, sericulture, food processing, etc., are also contributing some amount to the average income. It is around 2 percent for

cultivators in all groups as against only 1 percent of labourers. The cultivators are earning maximum in group A with around 2 percent and minimum in group C with almost 1 percent and the range value is approximately 1 percent. But the earnings of the labourers from miscellaneous sources in the three groups are almost the same.

5.02. Per Capita Income:

Table 5.02 depicts the per capita income of the female cultivators and agricultural labourers.

Table 5.02
Per capita income of female cultivators and agricultural labourers
in the study villages

(in Rs.)

Groups	Female Cultivators				Agricultural Labourers			
	A	B	C	Average	A	B	C	Average
Income Source								
A. Farm Income								
1. Net Farm Income	4074.58	3505.02	3470.44	3684.00	---	---	---	---
2. Income from Permanent Labour	2419.90	2169.54	2121.58	2237.00	1607.25	1514.34	1224.20	1448.59
3. Income from Casual Labour	197.36	188.12	190.33	191.93	4406.50	3638.66	3387.52	3810.89
4. Income from Crop Sharing	48.11	46.67	41.29	45.35	311.42	339.37	291.74	314.17
5. Income from Sub Occupations								
(a) Dairy	430.10	394.88	468.48	431.15	253.95	225.08	68.59	182.54
(b) Poultry	340.53	332.84	369.71	347.69	170.20	169.80	222.47	187.49
(c) Sale of manures	62.28	61.31	62.52	62.03	32.85	30.04	160.91	74.60
(d) Miscellaneous	157.42	128.67	137.01	141.03	26.34	21.69	24.38	24.13
Sub-Total (5)	990.33	917.70	1037.72	981.90	483.34	446.61	476.35	468.76
Sub-Total (A)	7730.28	6827.05	6861.36	7140.18	6808.51	5938.98	5379.81	6042.41
B. Non-Farm Income								
(a) Salaries	310.22	308.73	300.56	306.50	252.95	226.16	221.34	233.48
(b) Pensions	97.93	91.45	91.06	93.48	49.51	30.39	39.00	39.63
(c) Interest	51.21	48.69	47.00	48.96	45.11	29.52	30.78	35.13
(d) Miscellaneous	164.22	137.49	100.11	133.94	89.20	76.96	71.92	79.36
Total Income (B)	623.58	586.36	538.73	582.88	436.77	363.03	363.04	387.60
Total (A+B)	8353.86	7413.41	7400.09	7723.06	7245.28	6302.01	5742.85	6430.01

Source: Field survey

It has been observed from Table 5.02 that the average per capita income of female cultivators is around Rs.7723 whereas it is Rs.6430 for the labourers in all groups indicating that the per capita income of cultivators is about 9 percent more than labourers as they can earn regular income from farm activities. In respect of groups, the per capita income of cultivators is highest in group A with about Rs.8354 and lowest in group C with Rs.7400 and therefore, the per capita income of group A cultivator is almost 6 percent more than group C indicating that the resource base of group A cultivators is higher than group C. It also indicates possibility of lower family size of group A cultivators than group C. In case of labourers it is the maximum in group A with about Rs.7245 and minimum in group C with Rs.5743, and, therefore, the group A labourers is earning almost 11 percent more than group C indicating the possibility of a larger resource base and smaller family size of group A labourers than group C.

The average per capita net farm income of cultivators is Rs.3684. It is the maximum in group A with around Rs.4074 and minimum in group C with Rs.3470. In fact, group A cultivators is earning almost 6 percent more than group C. There is no farm income of agricultural labourers by being landless. The average per capita income of female cultivators by the family labour / permanent labour is around Rs.2237 in all groups and it is around Rs.1448 for the agricultural labourers indicating that the per head income of cultivators is almost 21 percent more than labourers as because labourers cannot enjoy adequate opportunity to engage themselves permanently on their farm due to their landlessness. In respect of groups, it is the maximum in group A with around Rs.2420 and minimum in group C with about Rs.2121 for the cultivators and therefore group A cultivator is earning almost 7 percent more than group C which may be due to their higher resource base. On the other hand, in case of labourers it is the maximum in group A with almost Rs.1607 and minimum in group C with Rs.1224 where the coefficient of range is only 0.13 or 13percent.

The average per capita income from subsidiary occupation is almost Rs.982 for the female cultivators and about Rs.469 for the labourers in all groups indicating that the per head income of cultivators is more than double which may be due to higher income earned by the cultivators than labourers from subsidiary sources like diary and poultry farming due to their larger livestock base. In respect of groups, it is the maximum for group C cultivators with around Rs.1038 and minimum in group B

with about Rs.918 where the coefficient of range between maximum and minimum per capita is about 0.06 or 6 percent. But for the labourers, it is the maximum in group A with about Rs.483 and minimum in group B with almost Rs.447 and therefore group A labourers is earning almost 4 percent more than group B from subsidiary sources. Among subsidiary occupations, the income from dairy is the major source of income. The average per capita income from this source is more than Rs.400 for the cultivators and less than Rs.200 for the labourers in all groups. It is highest in group C with around Rs.468 and lowest in group B with about Rs.395 for the cultivators. On the other hand, in the section of labourers it is highest in group A with almost Rs.254 and lowest in group C with only Rs.68 for the labourers. The range value between highest and lowest per capita income from dairy farming is around Rs.74 for cultivators as against Rs.185 for the labourers. Poultry farming is the other source where the average per capita income from this source for cultivators is around Rs.348 and for labourers it is almost Rs.187 in all groups indicating that per head income of cultivators from poultry farming is almost 30 percent more than labourers which may be due to their larger poultry based resources. In respect of groups, the per capita income from poultry farming is highest for group C cultivators with around Rs.370 and lowest in group A with almost Rs.340 indicating no major distinction of per capita income earned from poultry farming among the groups of villages of cultivators as they may have almost similar poultry based resources. But for the labourers it is highest in group C with almost Rs.222 and lowest in group B with about Rs.170 indicating that the group C labourers is earning approximately 13 percent more than group B from poultry farming. The possible reason for higher per capita income earned by group C labourers than group B may be due to their larger poultry based resources which may be collected from employer cultivators on 'livestock sharing' system.

The average per capita income from the sale of manures is only Rs.62 for the cultivators and it is almost Rs.75 for the labourers in all groups. In fact, the labourers are earning almost 9 percent more than cultivators from sale of manure as they have no own land to use manures obtained from their limited livestock. In respect of groups of villages of cultivators the per capita earning from sale of manure is almost same indicating almost similar livestock base. But the per head income for labourers is the maximum in group C with around Rs.161 and minimum in group B with only Rs.30 indicating that the group C labourers is earning almost 68 percent more than

group B from sale of manure which may be due to their larger livestock base obtained mainly from 'livestock sharing' system as mentioned earlier. The average per capita income from the miscellaneous source based on farm is around Rs.141 for the cultivators and it is only Rs.24 for the labourers in all groups indicating that per head income of cultivators is almost 71 percent more than labourers from this source due to their higher resource base. It is the maximum in group A with around Rs.157 and minimum in group B with approximate to Rs.129 for the cultivators and in case of labourers it is the maximum in group A with only Rs.26 and minimum in group B with about Rs.22.

The average per capita non-farm income of the cultivators is around Rs.583 and it is Rs.388 for the labourers in all groups indicating that the per head income of cultivators is almost 20 percent more than the labourers from this source as the farm income of the cultivators was higher than labourers and they can use their surplus farm income in non-farm sources (like interest). In respect of groups, it is highest in group A with Rs.623 and lowest in group C with Rs.539 and therefore group A cultivators is earning almost 7 percent more than group C indicating higher resource base of group A cultivators than group C. In case of labourers, it is highest in group A with around Rs 437 and lowest in group B with Rs 363 indicating that the per capita non-farm income of group A labourers is almost 9 percent more than group C.

The average per capita income from salary which is the major source of non-farm income contributes around Rs.306 for the cultivators and it is Rs.233 for the labourers in all groups and thus the per capita income of cultivators is almost 13 percent more than labourers from this source. It is the maximum for group A cultivators with around Rs.310 and minimum in group C with approximate to Rs.300. Similarly, it is the maximum for group A labourers with about Rs.253 and minimum in group C with Rs.221. The average per capita income from pension in all groups is Rs.93 and only Rs.40 for cultivators and labourers respectively. Income from source of interest is very small for both the sections of the society. It is being calculated around Rs.49 for the cultivators and only Rs.35 for the labourers on an average. In respect of groups, it varies from Rs.51 to Rs.47 for the cultivators and on the other hand it is the maximum in group A with almost Rs.45 for the labourers and minimum in group B with Rs.30. The average per capita income from miscellaneous sources is Rs.134 in all groups for the cultivators and Rs.73 for the labourers indicating that per head income of cultivators is almost 28percent more than labourers from this source.

Combining both farm income and farm based subsidiary occupations, it has been found that the average per capita income in all groups is around Rs.7140 for the cultivators and it is Rs.6042 for the labourers indicating that the per capita income of the cultivators from farm activities is almost 8 percent more than labourers. In respect of groups, it is highest in group A with around Rs.7730 and lowest in group B with Rs.6827 for the cultivators and in case of labourers it is the maximum in group A with around Rs.6808 and minimum in group C with Rs.5380. The average per capita non-farm income in all groups is Rs.583 for the cultivators and Rs.388 for the labourers and therefore, the per capita income of cultivators is almost 20 percent more than labourers from non-farm sources. It varies from Rs.539 to Rs.623 in groups for the cultivators and for the labourers it varies from Rs.363 to Rs.437.

Although the average per capita income of female cultivators in all groups is Rs.7723 as against Rs.6430 of agricultural labourers, the difference is very small and has been worked out at only 9 percent indicating that the standard of living of both the sections of the society is almost same even though per capita income is not considered as a proper index of living standard. Though land contributes a lot for the income of the cultivators but still they have to depend on their family labour so to earn their livelihood. On the other hand, the agricultural labourers are largely depending on their labour and casual labour is the main source of their income. Moreover, the female cultivators is also earning more non-farm income than labourers and the difference is about 20 percent as against only 8 percent difference of farm income between the two sections of rural society indicating that the cultivators is earning larger amount of both farm and non-income than labourers as land contributes a lot for their higher income.

5.03. Percentage share of various sources of income to the per capita income:

Table 5.03 shows the contribution of various sources of income to the per capita income of female cultivators and agricultural labourers in the study villages.

Table 5.03
Percentage share of income

(in percent)

Groups	Cultivators				Labourers			
	A	B	C	Average	A	B	C	Average
Income Source								
A. Farm Income								
1. Net Farm Income	48.77	47.27	46.21	47.41	---	---	---	---
2. Income from Permanent Labour	28.96	29.26	29.05	29.26	22.18	24.02	21.49	22.56
3. Income from Casual Labour	2.36	2.53	2.60	2.49	60.81	57.73	59.48	59.34
4. Income from Crop Sharing	0.57	0.62	0.54	0.57	4.29	5.38	5.12	4.93
5. Income from Subsidiary Occupations								
(a) Dairy	5.14	5.32	6.41	5.62	3.50	3.57	3.90	3.65
(b) Poultry	4.07	4.48	5.06	4.53	2.34	2.69	2.82	2.61
(c) Sale of manures	0.74	0.82	0.83	0.79	0.45	0.47	0.42	0.44
(d) Miscellaneous	1.88	1.73	1.87	1.82	0.36	0.34	0.36	0.35
Sub-Total (5)	11.83	12.35	14.17	12.76	6.65	7.07	7.50	7.05
Sub-Total (A)	92.49	92.03	92.57	92.32	93.93	94.2	93.59	93.88
B. Non-Farm Income								
(a) Salaries	3.71	4.16	4.11	3.99	3.49	3.58	3.88	3.65
(b) Pensions	1.17	1.23	1.24	1.21	0.68	0.48	0.68	0.61
(c) Interest	0.61	0.65	0.64	0.63	0.62	0.46	0.54	0.54
(d) Miscellaneous	1.96	1.85	1.37	1.72	1.23	1.22	1.26	1.23
Sub-Total	7.45	7.89	7.36	7.55	6.02	5.74	6.36	6.03
Total (A+B)	100	100	100	100	100	100	100	100

Source: Field survey

It has been observed from Table 5.03 that the female cultivators and agricultural labourers are deriving major share of their income from farm activities and a small percent of their income from non-farm sources. As shown by the Table it is being observed that the cultivators and labourers are deriving 92-94 percent of income to the average per capita income in all groups from farm activities as

agriculture and agro-based activities are the major economic activities in the study villages. Income derived from non-farm activities is very small. It varies only 6-8 percent to the average per capita income of cultivators and labourers from non-farm sources. It indicates that there is limited occupational diversification of female cultivators and labourers and primary activity is their main occupation.

The farm and farm based activities has been divided into five parts on the basis of the sources of contribution. In case of cultivators the maximum income is contributed by the farm income i.e. around 47 percent in all groups. On the other hand, in case of labourers, there is no question of farm income, and they are dependent on the income from their labour, subsidiary activities and from the non-farm income earned through salaries, pension, interest etc. The income from performing of their labour on their own farms is calculated about 29 percent of the average per capita income of cultivators in all groups as against around 23 percent of labourers indicating that the per capita income of cultivators is almost 6 percent more than labourers from this source as the cultivators have their own land in relation to landlessness of labourers.

The main source of income of labourers is casual labour from which about 59 percent of average per capita is earned in all groups as against approximately 3 percent of cultivators. Being landless, labourers can enjoy limited choice and opportunity and are thus compelled to engage as casual labourers. Some of the cultivators are also engaged in crop sharing and its contribution is almost negligible in all groups in comparison to around 5 percent of labourers. In fact, labourers are deriving almost eight times more than cultivators from crop sharing. In other farm activities the maximum is contributed by the subsidiary occupations based on agriculture which is around 13 percent for the cultivators in all groups and in case of labourers it is only 7 percent indicating that the cultivators are deriving almost 6 percent more than labourers from this source in all groups as cultivators have more resource base than labourers. In respect of subsidiary occupations, dairy farming is the main contributor, where it is contributing around 6 percent of the average per capita income of cultivators in all groups as against 4 percent of labourers indicating that the cultivators is earning 2 percent more than the labourers. The possible reason may be the higher livestock base of cultivators than labourers. Almost the same reason may be attributed to the higher percentage of average per capita income of cultivators than labourers from poultry farming where the cultivators is deriving around 5 percent in

all groups and the labourers is deriving almost 3 percent from this source. The miscellaneous activities based on farm like the bee-keeping, piggery, sheep rearing, processing of vegetables etc. contributes almost 2 percent to the average per capita income for cultivators in all groups as against less than 1 percent of labourers. In fact, cultivators are deriving almost five times more than labourers from miscellaneous sources in all groups which may be due to higher resource base of cultivators as mentioned earlier.

In respect of groups of villages of cultivators the share of net farm income is around 46-49 percent to the average per capita indicating that there is no major distinction regarding per capita net farm income which may be due to almost similar level of resource base of group A, B and C cultivators. Similarly the income derived from permanent / family labour is almost same in the three groups i.e. around 29 percent to the average per capita of cultivators as they have their own land. In case of labourers the maximum earning from permanent / family labour has been found in group B with around 24 percent and minimum in group C with almost 21 percent indicating that the use of labourers by their employer cultivators may be different among the group of villages of labourers, although such differences is marginal. Some of the female cultivators are performing casual labour also. But this source is contributing negligible percent to the average per capita i.e. only 2-3 percent in group A, B and C. On the other hand the labourers are deriving around 60 percent to the average per capita from casual labour as they have no land of their own and compel to depend upon cultivators for providing employment at least in casual form for their livelihood. Crop sharing is also an important source of per capita income for the labourers, although the contribution from this source for the cultivators is very low. It is less than one percent for group of villages of cultivators as against around 4- 5 percent of labourers as it has been observed that the cultivators prefer to allow the labourers to cultivate their land on crop sharing system particularly in dry agricultural season when rainfall is scanty or deficient.

The cultivators as well as agricultural labourers both are having certain subsidiary occupations like dairy, poultry farming etc., so that they can earn a supplementary income. Among these occupations, dairy is contributing the maximum to the per capita income for both the cultivators and agricultural labourers. As the cultivators are having better facilities like availability of paddy straw and space for

the cattle shed, and with higher per capita earnings to invest in livestock, they are earning 5-6 percent from dairy as against 3-4 percent of labourers in the three groups.

Poultry farming is another source of subsidiary income from where the cultivators are deriving 4-5 percent to their per capita income as against only 2-3 percent of labourers in group A, B and C. Some of the cultivators as well as labourers are selling their manures and they are earning some income from this source, though it is very small. The contribution of selling manures to the per capita income of cultivator is around 1 percent in group A, B and C and less than one percent for labourers in the same group. Some of the income is being earned by miscellaneous activities based on farming which is around 2 percent for group of villages of cultivators as against negligible percentage for group of villages of labourers.

Among the non-farm income, the sources are salary, pension, interest and miscellaneous income. In respect of the non-farm income the major contribution is that of the salaries. Among the groups this share is almost same for cultivators and labourers i.e. around 4 percent to their respective per capita income. Pension is the other source of non-farm income. In respect of groups the contribution of pension to the per capita income is around 1 percent for cultivators whereas its contribution is less than one percent for labourers indicating no major distinction in enjoying social security benefits by cultivators and labourers in the three groups. A small amount of income is also being earned because of interest on the deposits both of the female cultivators as well as of the labourers. However, its share to the total per capita income is almost negligible for both the sections of the society indicating minimum amount savings. The share of the miscellaneous sources is highest in group A with around 2 percent and lowest in group C with around 1 percent for cultivators whereas it is approximate to just one percent for group of villages of labourers.

Combining all the non-farm sources of income, it has been found that the share of non-farm income to the per capita income of cultivators is around 7-8 percent in group A, B and C as against approximate to 6 percent for labourers in the same group indicating no major distinction among the group of villages of cultivators and labourers indicating limited diversification of occupation for both the sections of the society.

It is obvious that the farm income is the main contributor to the average income of the female cultivators and farm labour is the main source of income for the labourers. The permanent labour is the second important source of income for the

labourers whereas it is the family labour performed by the family members of female cultivators that is also an important source of income for the female cultivators. The cultivators having a better source base are earning more from the subsidiary occupations than that of the agricultural labourers. Income from the non-farm sources are also the significant source of income both for the cultivators as well as for the agricultural labourers.

5.04. Group-wise Differences in income of Female cultivators and Agricultural Labourers:

The difference in the income of female cultivators and agricultural labourers in various groups is calculated in Table 5.04

Table 5.04
Income of Female Cultivators and Agricultural Labourers in the study Villages

(in Rs.)

Income	A	B	C	Average
Income of Cultivators	651601.08	496698.47	481005.85	543101.76
Income of Labourers	499924.32	441140.70	367542.40	436202.44
Difference	151676.76	55557.77	113463.45	106899.32
Percentage difference	13.17	5.92	13.37	10.91

The difference in the average income of female cultivators and agricultural labourer is around 11 percent indicating that the cultivators are earning more than labourers as the cultivators have their own land. Similarly, in the three groups, the cultivator is having higher income than the labourers and the percentage of difference is almost 13 percent in group A and C as against around 6 percent in group B. It indicates that income difference of group A and C cultivators and labourers is almost the same and the percentage of difference in group B is the minimum. The possible reason may be that the group B villages (Khairabari, Kalpani and Nichuka) are situated in proximity to the urban commercial centre i.e., Barpeta Road, and therefore the labourers may be better paid by the cultivator employer as the cultivators can sell their agricultural produce at reasonable prices at the nearest commercial centre without any difficulty.

5.05. Group-wise variation of income of cultivators and labourers:

Group-wise variation of income of female cultivators and agricultural labourers is studied and it is given in Table 5.05

Table 5.05
Variation in income between cultivators and labourers in study villages

Cultivators			
Group	Annual Average Income (Rs.)	S.D.	C.V.
A	651601.08	1386.36	2.55
B	496698.47	1181.05	2.85
C	481005.85	1148.27	2.86
Average	543101.76	1238.56	2.75
Labourers			
Group	Annual Average Income (Rs.)	S.D.	C.V.
A	499924.32	1353.85	3.17
B	441140.70	1219.78	3.24
C	367542.40	1118.10	3.44
Average	436202.44	1230.57	3.28

To compare the variation in income of female cultivators and agricultural labourers, the co-efficient of variation is computed which is found to be around 3 percent for cultivators and labourers indicating that the income of the cultivator and labourers provides no evidence of difference, as labour time use of cultivators and labourers was statistically insignificant. It indicates possible relationship between labour time use and income of the cultivators and labourers. In respect of groups of cultivators, the coefficient of variation of group A, B and C is almost same i.e. around 3 percent indicating absence of inter village differences in income among female cultivators, as there is no significant difference in labour force participation among the groups of villages of cultivators. Similar phenomenon has been observed for groups of villages of labourers where the coefficient of variation is close to 3 percent in group A, B and C indicating absence of inter village differences of income of labourers too.

5.06. Analysis of variance of Income of Cultivators and labourers among study groups:

Group-wise analysis of variance of average income of female cultivators and agricultural labourers has been analysed using ANOVA (One-way classification model) and the results are given in Table 5.06.

Table 5.06
ANOVA (One-way classification model)

Cultivators					
Source of Variation	Degree of Freedom	Sum of Squares	Mean Sum of Squares	Variance Ratio	Critical Value at 5% level of significance
Between Groups	2	1481780748	740890374	F = 0.11	F _{0.5} = 3.3158
Within Groups	33	214921117828	6512761146.30		
Total	35	216402898576	7253651520.30		
Agricultural Labourers					
Between Groups	2	3283095531	164154765.50	F = 0.0013	F _{0.5} = 3.3158
Within Groups	30	376590018337	125530006112		
Total	32	376918327868	125694160877		

It has been observed from Table 5.06 that the variance ratio (F) for female cultivators is 0.11 and it is 0.0013 for agricultural labourers. The variance ratio (F) of cultivators and labourers are less than critical value at 5% level of significance (3.3158). Therefore, the income difference of cultivators and labourers among various study groups is not significant.

5.07. Analysis of variance of income of cultivators and labourers within study groups:

The variance of annual average income of female cultivators and agricultural labourers within the study groups has been analysed using z-test.

Let the annual average income of female cultivators and labourers be μ_1 and μ_2 . Let the null hypothesis (H_0) be $\mu_1 = \mu_2$ against the alternative hypothesis (H_1) be $\mu_1 > \mu_2$.

The test statistic is

$$Z = \frac{\bar{X}_1 - \bar{X}_2}{SE(\bar{X}_1 - \bar{X}_2)}$$

$$\text{Where } SE(\bar{X}_1 - \bar{X}_2) = \sqrt{\frac{\sigma_1^2 + \sigma_2^2}{n_1 + n_2}}$$

The results of the z-test are represented in Table 5.07.

Table 5.07: Results of z-test

Group	Annual Average Income		Z-Value	Critical value at 1% level of significance	Critical value at 5% level of significance
	Cultivators	Labourers			
A	651601.08	499924.32	0.152	1.96	2.58
B	496698.47	441140.70	0.312	1.96	2.58
C	481005.85	367542.40	0.237	1.96	2.58

It has been observed from Table: 5.07 that the calculated value of z for average income of cultivators and labourers in group A (0.152), group B (0.312) and group C (0.237) is lower than critical value at 1% level of significance (1.96) and 5% level of significance (2.58). Hence, we may accept the null hypothesis (H_0) and reject the alternative hypothesis (H_1) i.e. annual average income of female cultivators and agricultural labourers provides no evidence of difference within study groups as the differences of labour time involvement of cultivators and labourers were statistically insignificant.

Thus, there is no inter-village and intra-village difference of income of female cultivators and agricultural labourers.

5.08. Consumption Expenditure:

The relative share of consumption expenditure is indicative of the level of development of a society. Literature suggests that the relative share of expenditure on food items is the minimum in the developed countries whereas it is the maximum on the items of comforts and luxuries. Contrary to this, in the underdeveloped countries and in the social groups of the lower section, the maximum expenditure is being made on the food items and very less on the non-food items. A very small amount is being spent on comforts and luxuries.

The average consumption expenditure of female cultivators and agricultural labourers in our study villages is shown in Table 5.08.

It has been observed from Table 5.08 that the annual average consumption expenditure of female cultivators is higher (Rs.523848.35) than agricultural labourers (Rs.414983.09) indicating that the cultivators is spending almost 12 percent more than labourers as earnings of the cultivators from farm and non-farm sources was higher than labourers. In respect of groups, it is the maximum for group A cultivators with around Rs 6 lakhs as their average income was highest among the study groups and minimum in group C by almost 16 percent less than group A as their average income was lowest. Similar trend has been observed for the agricultural labourers where the maximum consumption expenditure has been found in group A with close to Rs 5 lakhs as their average income was highest and minimum in group C with around Rs 4 lakhs indicating that the group A labourers is spending almost 12 percent more than group C as their average income was lowest.

It has also been observed that both female cultivators and agricultural labourers are spending more on food items and a very small amount on non-food items indicating underdevelopment of the society. The female cultivators are spending almost 76 percent to the total consumption expenditure in all groups on food items and around 24 percent on non-food items. But the labourers are spending around 85 percent on food items in all groups and only about 15 percent of total consumption expenditure on non-food items. In fact, the labourers are spending more on food items than cultivators and cultivators are spending more on non-food items than labourers indicating that the cultivators are relatively well off than labourers, although both the sections of the rural society are living on subsistence.

Table 5.08
Group-wise Average Consumption Expenditure of Female Cultivators and the Agricultural Labourers (in Rs.)

2	Female Cultivators				Labourers			
	A	B	C	Average	A	B	C	Average
3	4	5	6	7	8	9	10	
Food Items								
Rice	122771.22 (19.67)	104553.50 (21.42)	107385.85 (23.36)	111570.19 (21.29)	105376.80 (22.76)	105208.60 (25.02)	79630.08 (22.02)	96738.49 (23.31)
Wheat	21471.06(3.44)	18136.23(3.71)	19637.80(4.27)	19748.36(3.76)	14678.37(3.17)	15170.40(3.60)	26211.84(7.24)	18686.87(4.50)
Maize	4214.34(0.67)	3610.63(0.73)	2898.35(0.63)	3574.44(0.68)	2727.57(0.58)	2950.50(0.70)	2773.12(0.76)	2817.06(0.67)
Milk Products	59241.00 (9.49)	49801.10 (10.2)	51055.55 (11.07)	53365.88 (10.18)	43950.24 (9.49)	42716.10 (10.16)	41391.36 (11.44)	42685.90 (10.28)
Pulses	18740.28(3.00)	16004.96(3.27)	15982.20(3.47)	16909.14(3.22)	17180.31(3.71)	17740.80(4.21)	16229.76(4.48)	17050.29(4.10)
Oil	27675.96(4.43)	26011.41(5.33)	25642.50(5.57)	26443.29(5.04)	29240.13(6.31)	29414.00(6.99)	27386.88(7.57)	28680.33(6.91)
Sugar	31048.68(4.97)	29306.47(6.00)	26370.50(5.73)	28908.55(5.51)	29186.31(6.30)	29486.10(7.01)	25866.88(7.15)	28179.76(6.79)
Confectionery	8179.86(1.31)	5060.51(1.03)	4862.00(1.05)	6034.12(1.15)	5149.47(1.11)	5217.80(1.24)	4575.36(1.26)	4980.87(1.20)
Meat/Fish/Eggs	81478.02(13.05)	68379.53 (14.01)	57255.25 (12.45)	69037.60 (13.17)	60395.01 (13.04)	59542.70 (14.16)	47318.40 (13.08)	55752.03 (13.43)
Vegetables	18879.90(3.02)	14432.47(2.95)	14712.75(3.20)	16008.37(3.05)	16119.78(3.48)	14767.20(3.51)	14845.44(4.10)	15244.14(3.67)
Fruits	2571.66(0.41)	2362.42(0.48)	2213.25(0.48)	2382.44(0.45)	2844.18(0.61)	2988.30(0.77)	2714.88(0.75)	2849.12(0.68)
Cond. Species	10092.42(1.61)	8553.22(1.75)	8650.85(1.88)	9098.83(1.73)	8205.48(1.77)	8479.10(2.01)	8037.76(2.22)	8240.78(1.98)
Tea Leaves	20826.00(3.33)	17131.23(3.51)	17352.40(3.77)	18436.54(3.51)	18304.32(3.95)	17078.60(4.06)	16816.64(4.65)	17399.85(4.19)
Spices	7711.86(1.23)	6661.14(1.36)	6712.55(1.46)	7028.51(1.34)	7198.77(1.55)	6985.30(1.66)	5893.76(1.63)	6692.61(1.61)
Biscuits/Sweets	8828.04 (1.41)	6365.00 (1.30)	7679.10 (1.67)	7624.04 (1.45)	8697.45 (1.87)	8666.70 (2.06)	7185.28 (1.98)	8183.14 (1.97)
Ice Cream								
Total (A)	443730.30 (71.11)	376369.82 (77.12)	368410.90 (80.14)	396170.34 (75.62)	369254.19 (79.75)	366412.20 (87.15)	326879.36 (90.40)	354181.91 (85.34)
Non-Food Items								
Tobacco	489.06(0.078)	376.54(0.17)	355.55(0.077)	407.05(0.077)	333.96(0.078)	256.20(0.06)	197.76(0.05)	262.60(0.06)
Liquor	7877.22(1.26)	3439.11(0.70)	4716.25(1.02)	5344.24(1.02)	3387.90(0.73)	2359.00(0.56)	1913.60(0.52)	2553.50(0.61)
Opium	603.72(0.096)	504.51(0.10)	471.25(0.10)	526.49(0.10)	667.23(0.14)	466.20(0.11)	353.92(0.09)	495.78(0.11)
Fuel	11800.62(1.89)	11168.23(2.28)	6222.45(1.35)	9730.43(1.85)	6433.56(1.38)	4272.80(1.01)	1992.96(0.55)	4233.10(1.02)
Cloth	23850.06(3.82)	14817.05(3.03)	11997.70(2.61)	16888.27(3.22)	13152.78(2.84)	8666.70(2.06)	6069.76(1.67)	9296.41(2.24)
Household	19453.98(3.11)	11386.65(2.33)	9155.90(1.99)	13332.17(2.54)	9443.34(2.03)	1624.40(0.38)	2888.32(0.79)	4318.68(1.04)
Lighting	15007.98(2.40)	9073.81(1.85)	8708.05(1.89)	10929.94(2.08)	8185.47(1.76)	5218.50(1.24)	3474.56(0.96)	5625.17(1.35)
Medicine	12129.78(1.94)	8262.44(1.69)	7868.90(1.71)	9420.37(1.79)	7380.97(1.59)	4678.80(1.11)	2147.20(0.59)	4735.65(1.14)
Traveling	7139.34(1.14)	4379.12(0.89)	3883.10(0.84)	5133.85(0.98)	3864.69(0.83)	1988.00(0.47)	1062.40(0.29)	2305.03(0.55)
Education	11910.60(1.90)	10068.09(2.06)	8158.75(1.77)	10045.83(1.91)	8493.90(1.83)	4566.80(1.08)	2303.36(0.63)	5121.35(1.23)
Religion	5754.06(0.92)	3982.48(0.81)	3366.35(0.73)	4367.63(0.83)	3594.21(0.77)	1943.20(0.46)	1021.44(0.28)	2186.28(0.52)
Social	22006.92 (3.52)	9064.43 (1.85)	8680.75 (1.88)	13250.70 (2.52)	7798.38 (1.68)	5049.10 (1.20)	2819.84 (0.77)	5222.44 (1.25)
Shoes	5810.22(0.93)	2968.10(0.60)	2042.30(0.44)	3606.87(0.68)	2722.05(0.58)	2146.90(0.51)	1795.84(0.49)	2221.59(0.53)
Footwears	1392.30(0.22)	564.81(0.11)	492.05(0.10)	816.38(0.15)	517.50(0.11)	339.50(0.080)	235.52(0.06)	364.17(0.08)
Radio/ T.V. etc	1252.68(0.20)	876.36(0.17)	629.20(0.13)	919.41(0.17)	663.09(0.14)	443.10(0.10)	218.24(0.06)	441.49(0.10)
Watch	1182.48(0.18)	807.35(0.16)	731.25(0.15)	907.02(0.17)	687.93(0.14)	466.20(0.11)	213.76(0.05)	455.96(0.10)
Electric Fan	1354.86(0.21)	765.14(0.15)	688.35(0.14)	936.11(0.17)	591.33(0.12)	382.20(0.09)	236.16(0.06)	403.23(0.09)
Sewing Machine	726.18 (0.11)	578.88 (0.11)	432.25 (0.09)	579.10 (0.11)	455.40 (0.09)	254.80 (0.06)	178.56 (0.04)	296.25 (0.07)
Suits/ Bedding	4027.92(0.64)	2085.71(0.42)	1920.75(0.41)	2678.12(0.51)	1947.18(0.42)	1145.90(0.27)	828.80(0.22)	1307.29(0.31)
Utensils	2592.72(0.41)	1887.39(0.38)	1665.30(0.36)	2048.47(0.39)	1609.08(0.34)	1225.00(0.29)	743.04(0.20)	1192.37(0.28)
Cycle/ Mobile	14183.52(2.27)	9482.51(1.94)	6906.25(1.50)	10190.75(1.94)	7712.13(1.66)	5233.90(1.24)	2338.56(0.64)	5094.86(1.22)
Entertainment	9636.90(1.54)	4462.87(0.91)	2153.45(0.46)	5417.74(1.03)	4084.80(0.88)	2274.30(0.54)	1641.60(0.45)	2666.90(0.64)
Total (B)	180183.12 (28.87)	111604.58 (22.8)	91246.35 (19.85)	127678.01 (24.37)	93726.84 (20.24)	54001.50 (12.84)	34675.20 (9.59)	60801.18 (14.65)
A + B	623913.42	487974.40	459657.25	523848.35	462981.03	420413.70	361554.56	414983.09

Source: Field survey

N.B.: Figures in brackets are percentages

In respect of groups, the consumption expenditure on food items is highest for female cultivators in group C with around 80 percent and lowest in group A with around 71 percent to the total consumption expenditure. Similarly, the agricultural labourers are also spending highest on food items in group C with about 90 percent and lowest in group A with almost 80 percent to their total consumption expenditure. On the other hand, the expenditure on non-food items is lower for group C cultivators and labourers with about 20 and 9 percent respectively and higher for group A cultivators and labourers with around 29 and 20 percent respectively. As group C cultivators and labourers are spending more on food items than non-food items, it can be said that group C cultivators and labourers are relatively poorer than group A and B. However, group C labourers are spending almost 10 percent more than group A on food items indicating that group C labourers are relatively poorer than group A, although both the sections are living on subsistence.

Consumption expenditure on food items:

Among the food items, the maximum is being spent on rice which is the staple food. The cultivators are spending almost 21 percent on rice in all groups as against 23 percent of labourers. In fact, labourers are spending almost 2 percent more on rice than cultivators as it was observed during the field survey that the average size of family of labourers is marginally higher than cultivators. In respect of groups, the expenditure made on rice is the maximum for group C cultivators with around 23 percent to the total consumption expenditure and minimum in group A with about 20 percent indicating that the group C cultivators is spending almost 4 percent more than group A as they (group C) earn more income from farm and non-farm sources reflecting the Keynesian income consumption relationship. But the labourers are spending the maximum in group B with around 25 percent to their total consumption expenditure on rice and minimum in group C with about 22 percent indicating that the group B labourers are spending almost 3 percent more than group C on rice, although average size of family of group C labourers may be higher than group B as mentioned earlier. This possible reason may be that the consumption of individuals is not only governed by income, it is also influenced by psychological factors like consumers' preferences, habits and tastes etc as suggested by literature. The milk and milk products is the other main food items. The cultivators and labourers are spending almost same percent of their consumption expenditure i.e. around 10 percent on milk and milk products in all groups. In respect of groups, the maximum consumption

expenditure on milk and milk products is made by the group C cultivators with around 11 percent and minimum by the group A cultivators with about 9 percent to their total consumption expenditure. Similarly labourers are also spending maximum expenditure on milk and milk products in group C with around 11 percent and minimum in group A with about 9 percent. Thus maximum and minimum consumption expenditure by the groups of villages of cultivators and labourers on milk and milk products are almost same as income of the cultivators and labourers provided no evidence of difference. Oil is a favorite item and so about 5 percent of the total consumption expenditure is spent by the cultivators on edible oil in all groups as against around 7 percent by the labourers. Although the labourers are spending about 2 percent more on edible oil than cultivators, yet the difference is almost negligible. In respect of groups, it varies from 4-6 percent for cultivators in comparison to 6-7 percent for labourers. Similarly labourers are spending almost 7 percent to their total consumption expenditure on sugar in all groups as against around 5 percent by the cultivators. In respect of groups, the expenditure made on sugar varies from 5-6 percent for cultivators as against 6-7 percent for labourers indicating almost same percent of expenditure on sugar by the group of villages of cultivators and labourers. Another favourite item is meat / fish, eggs and so around 13 percent of the total consumption expenditure is spent by the cultivators and labourers on this item in all groups as fish and eggs are easily available in our study villages. In respect of groups, there is no major distinction of expenditure made by cultivators and labourers on this item which ranges between 12-14 percent of total consumption expenditure of cultivators and labourers. It indicates that the group of villages of cultivators and labourers spend a significant percent on consumption of non-vegetarian items. The expenditure made on wheat is much less than the expenditure made on rice. The cultivators and labourers are spending around 4 percent of their total consumption on wheat in all groups. In respect of groups of villages of cultivators, the percentage of consumption expenditure made on wheat ranges between 3-4 percent to their respective total consumption indicating almost negligible variability of consumption expenditure on wheat. On the other hand the labourers are spending maximum expenditure on wheat in group C with around 7 percent to their total consumption expenditure and minimum in group A with only 3 percent. Thus group C labourers are spending almost 4 percent more on wheat than group A. It has been observed during field survey that group C labourers prefer 'Roti' in their breakfast than rice cake

which may be the possible reason for spending higher percent of their total consumption expenditure on wheat than group A. Further, the expenditure made on vegetables is also almost same for both cultivators and labourers in all groups i.e. around 3-4 percent to their total consumption expenditure indicating that the cultivators and labourers are spending little amount on vegetables. In respect of groups of villages of cultivators and labourers the percentage of expenditure to the total consumption expenditure made on vegetables are almost same. Although tea is an item of physical and social necessity, yet only 3-4 percent of total consumption expenditure is spent on this item by the cultivators and labourers in all groups. Almost same picture has been observed in groups of villages of cultivators and labourers where the cultivators are spending 3-4 percent of their respective total consumption expenditure as against marginally higher percent of labourers i.e. around 4-5 percent. The expenditure made on biscuits /sweets /rice cake is around 1 percent for cultivators in all groups as against 2 percent of labourers. However there are no differences among the group of cultivators and labourers regarding expenditure made on this item.

Consumption expenditure on non-food items:

Though less of the income is being spent on non-food items still there are certain items on which much of the amount is being spent. Clothing being the necessity of life and so about 3 percent of the total consumption expenditure is spent by the cultivators on this item in all groups as against lower percentage by the labourers i.e. only 2 percent. Although the resource base of the cultivators is higher than labourers, yet they are spending only 1 percent more than labourers on clothing. In respect of groups, the cultivators are spending around 3-4 percent to their respective total consumption expenditure on clothing as against 2-3 percent of labourers indicating subsistence levels of living of both the sections of the rural society as they are spending meager amount on a necessary item like clothing. The expenditure made on social ceremonies is another important item involving lot of expenditure. The cultivators are spending more than double on social ceremonies in comparison to labourers. It is around 2 percent to the total consumption expenditure for cultivators in all groups as against only 1 percent of labourers. In groups, it varies from about 2 -4 percent for cultivators and approximately 1- 2 percent for labourers indicating almost same amount of expenditure by cultivators and labourers on

clothing. Entertainment is another item where the percentage of expenditure to the total consumption of cultivators and labourers is almost negligible in all groups i.e. around 1 percent. In respect of groups of cultivators and labourers the expenditure made on entertainment varies from 1-2 percent to their respective total consumption expenditure. The money spent on house construction is also a significant item. The cultivators are spending around 3 percent to the total consumption expenditure on house construction in all groups as against only 1 percent by the labourers. It indicates deplorable housing conditions for both the sections of the society as it has been observed during field survey that most of the houses of cultivators and labourers are 'kucha' houses and they are not maintained well. In respect of groups the expenditure made on house construction varies from 2-3 percent for cultivators. But for labourers, although maximum expenditure on house construction is made in group A with around 2 percent, the group B labourers are spending negligible percent on house construction to their total consumption expenditure.

The money spent on education which is most important for improvement in the quality of life is very small for both the sections of the rural society. However, the cultivators are spending marginally higher than labourers on education. It is almost 2 percent to the total consumption expenditure for cultivators in all groups as against only 1 percent of labourers. In respect of groups, the cultivators and labourers are spending only 1-2 percent to their total consumption expenditure on education indicating lower literacy rate and poor level of educational attainment. The expenditure made on religious function is about 1 percent for cultivators and labourers in all groups. In respect of groups also the percentage of variation regarding expenditure made on religious function is almost negligible for both cultivators and labourers. The expenditure made on medicine is around 2 percent for cultivators in all groups as against marginally lower percentage of labourers i.e. about 1 percent. In respect of groups, the expenditure made on medicine varies from 1-2 percent to their total consumption expenditure for both cultivators and labourers. It has been observed during field survey that majority of cultivators and labourers mostly rely on rural bej / kabiraj for their medical treatment due to their poverty and ignorance and it may be the possible reason for spending meager amount on medicine. The amount spent on liquor is the main item of intoxicants. The cultivators is spending around 1 percent to the total consumption expenditure on three important intoxicants i.e. tobacco, liquor and opium, in all groups as against lower percentage by the labourers i.e. less than 1

percent. In respect of groups of cultivators and labourers the expenditure made on intoxicants is similar.

It can be concluded that there is a little difference in the amount spent by the cultivators and labourers in the groups of villages. Similarly, there are also negligible differences of the percentage of expenditure made on different items of consumption. The difference between the consumption expenditure of cultivators and labourers is not significant. Both these sections are not very well off and they are spending much on the food items and less on their necessities like clothing, house, health care etc. A small amount is being spent for comforts and luxuries by both the sections.

5.09. Per-capita Consumption Expenditure:

The per capita expenditure on consumption is calculated to be more familiar about the money spent by a person on the various food and non-food items. Just like the total amount of expenditure spent by the cultivators and labourers, the per capita expenditure is also having the similar pattern. It is because of the fact that there is small variation in the size of the families among the cultivators and labourers.

As shown in the Table 5.09, the average per capita expenditure of the cultivators is around Rs.7498 whereas it is about Rs.6121 for the labourers indicating that the per capita income of cultivators is greater than labourers by almost 10 percent. Among the groups, it is maximum for group A cultivators and labourers with around Rs.8000 and about Rs.6700 respectively as against minimum in group C with approximately Rs.7000 and Rs.5600 respectively. However, the difference in the per capita expenditure between group A and group C cultivators is almost 6 percent as against approximately 8 percent between group A and group C labourers. The per capita expenditure for both the sections is higher in food items than non-food items. The average per capita expenditures on food items for cultivators is around Rs.5700 for the cultivators as against approximately Rs.1790 on non-food items. In fact, cultivators are spending almost 52 percent more on food items than non-food items. On the other hand, the per capita expenditures on food items for labourers is around Rs.5200 as against only Rs.890 on non-food items in all groups indicating that the labourers are spending almost 71 percent more on food items than non-food items. In respect of groups, the per capita expenditure on food items is the maximum for group A cultivators and minimum for group B. But for labourers the maximum per capita expenditure on food item has been found in group A and minimum in group C.

Table 5.09
Group-wise Per -Capita Consumption of Female Cultivators and
Agricultural Labourers

(in Rs.)

		Cultivators				Labourers			
		A	B	C	Average	A	B	C	Average
1	2	3	4	5	6	7	8	9	10
(A) Food Items									
1	Rice	1573.99	1560.50	1652.09	1595.52	1527.20	1502.98	1244.22	1424.80
2	Maize	275.27	270.69	302.12	282.69	212.73	216.72	409.56	279.67
3	Milk Products	54.03	53.89	44.59	50.83	39.53	42.15	43.33	41.67
4	Oil / Ghee	759.50	743.30	785.47	762.75	636.96	610.23	646.74	631.31
5	Sugar	240.26	238.88	245.88	241.67	248.99	253.44	253.59	252.00
6	Jaggery	354.82	388.23	394.50	379.18	423.77	420.20	427.92	423.96
7	Wheat	398.06	437.41	405.70	413.72	422.99	421.23	404.17	416.13
8	Meat/ Eggs	104.87	75.53	74.80	85.06	74.63	74.54	71.49	73.55
9	Pulses	1044.59	1020.59	880.85	982.01	875.29	850.61	739.38	821.76
10	Vegetables	242.05	215.41	226.35	227.93	233.62	210.96	231.96	225.51
11	Fruit	32.97	35.26	34.05	34.09	41.22	42.69	42.42	42.11
12	Cond. Species	129.39	127.66	133.09	130.04	118.92	121.13	125.59	121.88
13	Tea Leaves	267.00	255.69	266.96	263.21	265.28	243.98	262.76	257.34
14	Pickles	98.87	99.42	103.27	100.52	104.33	99.79	92.09	98.73
15	Biscuits/ Sweets/ Rice Cakes	113.18	95.00	118.14	108.77	126.05	123.81	112.27	120.71
Sub-Total (A)		5688.85	5617.46	5667.86	5707.99	5351.51	5234.46	5107.49	5231.13
(B) Non- Food Items									
1	(a) Tobacco	6.27	5.62	5.47	5.78	4.84	3.66	3.09	3.86
	(b) Liquor	100.99	51.33	72.56	74.96	49.10	33.70	29.90	37.56
	(c) Opium	7.74	7.53	7.25	7.50	9.67	6.66	5.53	7.28
2	Fuel	151.29	166.69	95.73	137.90	93.24	61.04	31.14	61.88
3	Cloth	305.77	221.15	184.58	237.16	190.62	123.81	94.84	136.42
4	House	249.41	169.95	140.86	186.74	136.86	8.92	45.13	63.63
5	Lighting	192.41	135.43	133.97	153.93	118.63	74.55	54.29	82.49
6	Medicine	155.51	123.32	121.06	133.29	106.97	66.84	33.55	68.78
7	Traveling	91.53	65.36	59.74	72.21	56.01	28.40	16.60	33.67
8	Education	152.70	150.27	125.52	142.83	123.10	65.24	35.99	74.77
9	Religion	73.77	59.44	51.79	61.66	52.09	27.76	15.96	31.93
10	Social Ceremonies	282.14	135.29	133.55	183.66	113.02	72.13	44.06	76.40
11	Soaps	74.49	44.30	31.42	50.07	39.45	30.67	28.06	32.72
12	Foot-wears	17.85	8.43	7.57	11.28	7.50	4085	3.68	5.34
13	Radio/ T.V. etc	16.06	12.08	9.68	12.60	9.61	6.33	3.41	6.45
14	Watch	15.16	12.05	11.25	12.82	9.97	6.66	3.34	6.65
15	Electric Fan	17.37	11.42	10.59	13.12	8.57	5.46	3.69	5.90
16	Sewing Machine	9.31	8.64	6.65	8.20	6.60	3.64	2.79	4.34
17	Quits/ Bedding	51.64	31.13	29.55	37.44	28.22	16.37	12.95	19.18
18	Utensils	33.24	28.17	25.62	29.01	23.22	17.50	11.61	17.47
19	Cycle	181.84	141.53	106.25	143.20	111.77	74.77	36.54	74.36
20	Entertainment	123.55	66.61	33.13	74.43	59.20	32.49	25.65	39.11
Sub-Total (B)		2310.04	1665.74	1403.79	1789.79	1358.36	771.45	541.80	890.19
Total (A + B)		7998.89	7283.20	7071.66	7497.78	6709.87	6005.91	5649.29	6121.32

Source: Field survey

However, the difference in the per capita food expenditure between maximum and minimum amount of cultivators (between group A and group B) is less than 1 percent as against 2 percent (between group A and group C) of labourers. The per capita expenditure on non-food item varies from Rs 1400-2300 in the group of villages of cultivators as against Rs 500-1400 approximately for the labourers.

Rice is the staple food for both the sections where the per capita expenditure in all groups is around Rs.1600 for cultivators and approximately Rs.1400 for labourers indicating that the per capita expenditure on rice for cultivators is almost 7 percent than labourers. In respect of groups, there is no major distinction in per capita expenditure on rice among the groups of villages of cultivators. But for labourers, the maximum per capita expenditure on rice is found in group A and minimum in group C. The per capita expenditure on milk products is around Rs.51 for the cultivators and Rs.42 for the labourers in all groups. In the section of cultivators it is highest in group A with around Rs.54 and lowest in group C with about Rs.44 indicating a difference of around 10 percent. On the other hand, in case of labourers it varies from Rs.39-43 in the groups indicating a difference of only 5 percent. The per capita expenditure on sugar is around Rs.242 for cultivators and Rs.252 for the labourers in all groups indicating that the labourers are spending almost 2 percent more on sugar than cultivators. In respect of groups of villages of cultivators and labourers it varies approximately from Rs239-253 indicating no major distinction regarding per capita expenditure on sugar. The per capita expenditure on wheat is almost the same for cultivators and labourers in all groups i.e. around Rs.416. In respect of groups, the per capita expenditure on wheat is highest in group B with about Rs.437 and lowest in group A with Rs.398 for cultivators and for labourers it is highest in group A with almost Rs.423 and lowest in group C with Rs.404.

The per capita expenditure on vegetables is around Rs 225-228 for cultivators and labourers in all groups indicating that both the sections of the rural society spending almost same amount on vegetables. In case of fruits the per capita amount is very small. It is about Rs.34 for the cultivators and Rs.42 for the labourers in all groups. In fact, the per capita expenditure on fruits is almost 10 percent higher for labourers than cultivators in all groups. In respect of groups, the per capita expenditure on fruits is almost similar for cultivators i.e. around Rs 33-34. Similarly, for the groups of villages of labourers also it varies from Rs 41-43 indicating that the per capita expenditure on fruits for labourers is almost same in group A,B and C.

The per capita expenditure on tea leaves is around Rs.263 for the cultivators and it is Rs.257 for the labourers in all groups indicating that the cultivators is spending almost 1 percent more than labourers on tea leaves. It varies from Rs.255-267 among different groups for the cultivators and in case of labourers it varies from Rs.244-265.

Among the non-food items the per capita expenditure on clothing is around Rs.237 for the cultivators and it is Rs.136 for the labourers in all groups indicating that the per capita expenditure on clothing for cultivators is higher than labourers almost by 27 percent. The per capita expenditure made on house repair / construction is around Rs.187 for the cultivators and Rs.63 for the labourers in all groups. The per capita expenditure on house repair and construction is very small for both the sections of the society indicating rural poverty in the group of study villages. However, the per capita expenditure on house repair and house construction for labourers is less than cultivators by almost 50 percent indicating mass poverty among labourers than cultivators. In respect of groups of villages of cultivators, it is highest in group A with around Rs.249 and lowest in group C with about Rs.141 and for labourers it varies approximately from Rs.54 to Rs.119 in the groups. In fact, per capita expenditure on house repair / construction of group A cultivators and labourers is almost double in comparison to group C indicating poverty among group C villages of cultivators and labourers than group A. The per capita expenditure on traveling is only Rs.72 for the cultivators and around Rs.34 for the labourers in all groups indicating that the labourers are spending less than cultivators on traveling as they have lower mobility which may be due to their illiteracy, ignorance and lack of adequate skill development. The per capita expenditure on liquor is around Rs.75 for the cultivators and Rs.37 for the labourers in all groups. In respect of groups, it is highest in group A with around Rs.101 and lowest in group B with about Rs.51 for cultivators and the labourers are spending less in group C with Rs.30 as against Rs.49 in group A. In fact, group A cultivators and labourers are spending more on liquor than group C. The possible reason may be the higher concentration of tribal population in group A villages than group C who mainly prefer to use rice beer as a part of their traditional culture. The per capita expenditure on social ceremonies is around Rs.184 for the cultivators and Rs.76 for the labourers in all groups. Similarly, the per capita expenditure on education which is very important is just Rs.143 for the cultivators and Rs.75 for the labourers in all groups. Although, both the sections of the society is spending less on education, yet cultivators are spending almost 31 percent more on

education indicating more illiteracy and school drop out rates among labourers than cultivators. In respect of groups, the per capita expenditure on education is highest for group A cultivators with around Rs.153 and lowest in group C. Similarly for labourers, the per capita expenditure on education is highest in group A and lowest in group C even though there is higher concentration of tribal population in group A. The per capita expenditure on entertainment is around Rs.74 for the cultivators and it is just Rs.39 for the labourers in all groups. It is the maximum in group A with around Rs.123 for cultivators and minimum in group C with only Rs.31. Similarly, the labourers are spending highest on entertainment in group A and lowest in group C.

5.10. Percentage share of per capita consumption expenditure:

The percentage share of per capita consumption expenditure of female cultivators and agricultural labourers is given in Table 5.10

It has been observed from Table 5.10 that the percentage of expenditure to the total per capita consumption expenditure of agricultural labourers on food items is marginally higher than cultivators in all groups. It is around 85 percent of labourers as against 76 percent of cultivators on food items indicating that the propensity to consume of labourers is higher than cultivators which may be due to their poverty, although, per capita expenditure of cultivators is around Rs.7500 as against Rs.6100 of the labourers in all groups. Among the groups, the percentage expenditure on food items is highest for group C cultivators (around 80 percent) and lowest in group A (around 71 percent). Similar trend has been observed for agricultural labourers where it is the maximum in group C with around 90 percent as against minimum of about 80 percent in group A. It indicates mass poverty among group C cultivators and labourers than group A, although, both the sections of the society are not well-off. The percentage expenditure on the rice is the highest for both the sections of the society and it is around 21 percent for the cultivators and labourers in all groups indicating that the percentage to the per capita expenditure on rice by both the cultivators and labourers is almost same as rice is the main staple food in our study villages. However, group C cultivators are spending around 23 percent to the per capita expenditure on rice as against about 20 percent in group A.

Table 5.10
Percentage Expenditure to the Per Capita income

(in Percent)

		Cultivators				Labourers			
		A	B	C	Average	A	B	C	Average
1	2	3	4	5	6	7	8	9	10
(A) Food Items									
1	Rice	19.67	21.42	23.36	21.48	22.76	20.17	22.02	21.83
2	Maize	3.44	3.71	4.27	3.80	3.17	6.81	7.24	5.74
3	Milk Products	0.67	0.73	0.63	0.67	0.58	0.72	0.76	0.68
4	Oil / Ghee	9.49	10.20	11.10	10.26	9.49	10.76	11.44	10.56
5	Sugar	3.00	3.27	3.47	3.24	3.71	4.22	4.48	4.13
6	Jaggery	4.43	5.33	5.57	5.11	6.31	7.12	7.57	7.00
7	Wheat	4.97	6.00	5.73	5.56	6.30	6.72	7.15	6.72
8	Meat/ Eggs	1.84	1.34	1.31	1.49	1.39	1.42	1.39	1.40
9	Pulses	13.05	14.01	12.45	13.17	13.04	12.31	14.47	12.81
10	Vegetables	4.25	3.83	3.99	4.02	4.46	4.03	4.46	4.31
11	Fruit	0.41	0.48	0.48	0.45	0.61	0.70	4.10	0.68
12	Cond. Species	1.61	1.75	1.88	1.74	1.77	2.09	2.45	2.10
13	Tea Leaves	3.33	3.51	3.77	3.53	3.95	4.37	2.22	4.32
14	Pickles	1.23	1.36	1.46	1.35	1.55	1.53	4.65	1.57
15	Biscuits/ Sweets/ Rice Cakes	1.41	1.30	1.67	1.46	1.87	1.86	1.63	1.90
Sub-Total (A)		70.84	77.05	80.08	76.00	79.75	87.15	90.40	85.45
(B) Non- Food Items									
1	(a) Tobacco	0.07	0.07	0.007	0.049	0.07	0.06	0.05	0.06
	(b) Liquor	1.26	0.70	1.026	0.995	0.73	0.56	0.52	0.60
	(c) Opium	0.09	0.10	0.010	0.066	0.14	0.11	0.09	0.11
2	Fuel	1.89	2.28	1.350	1.840	1.38	1.01	0.55	0.98
3	Cloth	3.82	3.03	2.61	3.153	2.84	2.06	1.67	2.19
4	House	3.11	2.33	1.99	2.476	2.03	0.14	0.79	0.98
5	Lighting	2.40	1.85	1.89	2.046	1.76	1.24	0.96	1.32
6	Medicine	1.94	1.69	1.71	1.78	1.59	1.11	0.59	1.09
7	Traveling	1.14	0.89	0.84	0.95	0.83	0.47	0.29	0.53
8	Education	1.90	2.06	1.77	1.91	1.83	1.08	0.63	1.18
9	Religion	0.92	0.81	0.73	0.82	0.77	0.46	0.28	0.50
10	Social Ceremonies	3.52	1.85	1.88	2.41	1.68	1.20	0.77	1.21
11	Soaps	0.93	0.60	0.44	0.65	0.58	0.51	0.49	0.52
12	Foot-wears	0.22	0.11	0.10	0.14	0.11	0.80	0.06	0.32
13	Radio/ T.V. etc	0.20	0.16	0.13	0.16	0.14	0.10	0.06	0.10
14	Watch	0.18	0.16	0.15	0.16	0.14	0.11	0.05	0.10
15	Electric Fan	0.21	0.15	0.14	0.16	0.12	0.09	0.06	0.09
16	Sewing Machine	0.11	0.11	0.90	0.37	0.09	0.06	0.04	0.06
17	Quits/ Bedding	0.64	0.42	0.41	0.49	0.42	0.27	0.22	0.30
18	Utensils	0.41	0.38	0.36	0.38	0.34	0.29	0.20	0.27
19	Cycle	2.27	1.94	1.50	1.90	1.66	1.24	0.64	1.18
20	Entertainment	1.54	0.91	0.46	0.97	0.88	0.54	0.45	0.62
Sub-Total (B)		29.16	22.95	19.92	24.0	20.25	12.5	9.60	14.81
Total (A + B)		100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Field survey

But, the labourers are spending maximum percentage in group A with around 23 percent and minimum in group B with about 20 percent. The percentage to the per capita consumption expenditure on milk product is almost negligible for cultivators and labourers which is less than 1 percent in all groups indicating that the cultivators

and labourers are spending little amount on nutritional diet like milk and milk products. The same phenomenon has been observed in the groups of villages of cultivators and labourers where a negligible percent of per capita expenditure are spent by the cultivators and labourers in group A, B and C. Taking of tea being a habit in Assamese society, the expenditure made by female cultivators on tea leaves is around 3 percent whereas this percentage is about 4 for the labourers in all groups indicating that the labourers are spending almost 1 percent more on tea leaves. In groups, it is highest in group C and lowest in group B for cultivators. But for labourers percentage expenditure on tea leaves is highest in group B and lowest in group C. The other main item is that of pulses where about 13 percent of per capita expenditure is made by the cultivators and labourers in all groups. In respect of groups also there is little variation in the percentage expenditure spent on these items. For cultivators and labourers it varies from about 12 -14 percent in group A, B and C indicating that the percentage expenditure on pulses is almost same among various groups as pulses are one of the major food items next to rice. The percentage of per capita expenditure made on meat / fish / eggs etc. is almost similar for both the sections of the society. It is little over 1 percent for cultivators and labourers in all groups. In respect of groups also there is little variation. It is the maximum for cultivators in group A with around 2 percent and minimum in group C with almost 1 percent. However, such percentages for labourers are almost similar like the group C cultivators i.e. around 1 percent in group A, B and C. Similar is the case for oil / ghee where percentage of per capita consumption expenditure is almost same for cultivators and labourers in all groups which has been work out at around 10 percent. In respect of groups of cultivators and labourers, maximum expenditure is made in group C with around 11 percent and minimum in group A with almost 9 percent to their per capita consumption expenditure. But the percentage expenditure made on sugar is approximately 1 percent higher for labourers than cultivators in all groups. It is around 4 percent for labourers and 3 percent for cultivators. It is highest in group C and lowest in group A both for cultivators and labourers. Similarly, the percentage expenditure made on jaggery is around 2 percent more for labourers than cultivators in all groups. It is 7 percent for labourers as against 5 percent for cultivators in all groups. Both the cultivators and labourers made higher percent of expenditure on jaggery in group C as against lower in group A. Vegetables are the items of daily use in every household. They are easily available in the group of study villages. The

percentage of per capita consumption expenditure on vegetables is almost same for both cultivators and labourers in all groups i.e. around 4 percent. In respect of groups of cultivators and labourers almost 4 percent to the per capita consumption expenditure is spent on vegetables.

Regarding non-food items, the cultivators are spending around 24 percent as against almost 16 percent of the labourers to the total per capita consumption expenditure in all groups. In fact, the cultivators are spending about 8 percent more than labourers on non-food items as they have more resource base than labourers. In respect of groups, it is the maximum for group A cultivators with around 29 percent and minimum in group C with about 20 percent. In fact, group A cultivators are spending almost 9 percent more on non-food items than group C indicating that the economic well-being of group A cultivators are better than group C. But the labourers are spending around 21 percent of per capita consumption expenditure on non-food items in group A which is maximum and about 10 percent in group C where the difference between the maximum and minimum expenditure is around 11 percent indicating that there is greater variation of the percentage of per capita consumption expenditure on non-food items in various groups of labourers than cultivators. It also indicates that the economic well-being of group A labourers are better than group C as percentage of per capita consumption expenditure on non-food items for group A labourers is more than group C, although, such percentages are lower than the groups of cultivators. The main non-food item of consumption in both the sections is that of clothing where the share of the cultivator's expenditure is worked out around 3 percent and it is almost 2 percent for the labourers in all groups. The cultivator is spending highest in group A (around 4 percent) and lowest in group C (around 3 percent) and the difference is about 1 percent between highest and lowest. Similarly, labourers are also spending maximum in group A with around 3 percent to their per capita consumption expenditure and minimum in group C with around 2 percent. In fact, the groups of villages of cultivators and labourers are spending almost same percent to their per capita consumption expenditure on clothing even though resource base of cultivators are higher than labourers. As the labour time use of cultivators in handloom weaving was more than labourers, therefore there is possibility of using more of home made cloths by the cultivators than labourers. Among the expenditure on intoxicants the expenditure on liquor shares about 1 percent to the per capita consumption expenditure of the cultivators and less than one percent of labourers' per

capita consumption expenditure in all groups. The percentage of per capita consumption expenditure on liquor is highest in group A with little over 1 percent for cultivators and lowest in group B with less than 1 percent. But the labourers are spending almost negligible percent to their per capita consumption expenditure on liquor in group A, B and C. The expenditure on health care or on medicines is also significant but it shares only 2 percent approximately to the per capita consumption expenditure for the cultivators and around 1 percent for the labourers in all groups indicating that both the sections depend more on rural bej / kabiraj for their health care. It also indicates inadequate growth of public and private health care facilities in our study villages. In respect of groups of cultivators the percentage of per capita consumption expenditure on health care is around 2 percent in group A, B and C. But the labourers are spending less in group C with less than 1 percent and high in group A with more than 1 percent. Thus the groups of villages of cultivators and labourers are spending meager amount on health care indicating lower levels of living for both the sections of the rural society. The per capita consumption expenditure on social ceremonies is also a most important non-food item both for the cultivators as well as for the labourers. It is around 2 percent for cultivators and almost 1 percent for labourers in all groups. In fact, cultivators are spending one percent more than labourers on social ceremonies. In respect of groups of cultivators it is the maximum with around 3 percent to the per capita consumption expenditure in group A and minimum in group B with around 2 percent. But for labourers, the maximum percent of expenditure on social ceremonies has been found in group A with around 2 percent to the per capita consumption expenditure as against negligible percent in group C. The percentage of per capita consumption expenditure made on housing is around 2 percent for cultivators and 1 percent for labourers in all groups. In respect of groups, it varies from 2-3 percent for cultivators and 0.14- 2 percent for labourers. The expenditure made on entertainment is again very important non-food item. It is about 1 percent to the per capita consumption expenditure for cultivators and labourers in all groups. In respect of groups this percentage of expenditure on this item is highest in group A and lowest in group C for both cultivators and labourers, although group C labourers are spending negligible percent on entertainment.

Less of expenditure is made by both the sections on education. It has been found that around 2 percent of per capita expenditure is spent by the cultivators on this item as against 1 percent by the labourers in all groups. In respect of groups of

cultivators almost 2 percent of the per capita expenditure is spent on education. But for labourers, the maximum expenditure has been found in group A with around 2 percent and minimum in group C with less than 1 percent on education. Although the cultivators are spending almost 1 percent more than labourers on education, yet such percentages are very small in comparison to expenditures on food items.

So, it can be concluded that the percentage expenditure spent on food items by the cultivators as well as by labourers is much higher as compared to the non-food items. It shows that both the sections are living on subsistence. They are having very small amount to spend on non-food items. The expenditure spent on various items is having less of variation among the groups of cultivators as well as for the labourers. They have to ignore education and health care because they are to fulfill their food requirement first. So, very small percentage is being spent on education, social ceremonies, entertainment, etc. by both the sections of the society.

5.11. Difference in consumption expenditure:

Table 5.11
Difference of consumption expenditure

(in Rs.)

	Group A	Group B	Group C	Average
Cultivators' consumption expenditure	623913.42	487974.40	459657.25	523848.35
Labourers' consumption expenditure	462981.03	420413.70	361554.56	414983.09
Difference	160932.39	67560.70	98102.69	108865.26
Percentage of the difference	14.80	7.43	11.94	11.39

It has been observed from Table 5.11 that the consumption expenditure of labourers is less than cultivators in all groups by around 11 percent as the main source of income of labourers are casual jobs with irregular income and therefore they compel to curtail their consumption on food and non-food items. In respect of groups, the difference of the consumption expenditure among group A and C cultivators and labourers is around 12-15 percent as their income difference was around 13 percent. On the other hand, the income difference of group B cultivators and labourers was around 6 percent which may be the possible reason for minimum difference of consumption expenditure among group B cultivators and labourers by around 7

percent. In fact, the percentage of difference of consumption expenditure between group B cultivators and labourers is almost half compared to the group A and C.

5.12. Average propensity to consume of female cultivators and agricultural labourers:

The average propensity to consume of the female cultivators and agricultural labourers is given in Table 5.12.

Table 5.12
Average propensity to consume

(in Rs.)

	Cultivators				Labourers			
	A	B	C	Average	A	B	C	Average
Consumption (c)	623913.42	487974.40	459657.25	523848.35	462981.03	420413.70	361554.56	414983.09
Income (y)	651601.08	496698.47	481005.85	543101.76	499924.32	441140.70	367542.40	436202.44
A.P.C. (c/y)	0.95	0.98	0.95	0.96	0.92	0.95	0.98	0.95
A.P.S. (1-APC)	0.05	0.02	0.05	0.04	0.08	0.05	0.02	0.05

It has been observed from table 5.12 that the average propensity to consume of cultivators and labourers in all groups is almost same. It is around 95-96 percent for cultivators and labourers in all groups. It has also been observed that the average propensity to consume is very high for both the sections of the society as they spend major portion of their limited income on consumption and little has been left for savings i.e. only 4-5 percent. It indicates poverty and underdevelopment of both the sections of the society. The same phenomenon has been observed in the groups of villages of cultivators and labourers where the average propensity to consume is around 95-98 percent leading to lower propensity to save which is about 2-5 percent. It indicates that that the groups of cultivators and labourers in our study villages are giving more importance to present consumption than future consumption which may be due to their low income from farm and non-farm sources and poverty.

5.13. Group-wise variation in consumption expenditure:

Group-wise variation of consumption expenditure of female cultivators and agricultural labourers is studied and the result is given in Table 5.13.

Table 5.13
Group-wise Variation in Consumption of the Female Cultivators
and Agricultural Labourers

Cultivators			
Group	Annual Average Consumption (Rs.)	S.D.	C.V.
A	623913.42	1120	6.64
B	487974.40	1081	8.19
C	459657.25	699.71	5.62
Average	523848.35	866.90	6.81
Labourers			
A	462981.03	1247	9.96
B	420413.70	1145	10.07
C	361554.56	1007	10.38
Average	414983.09	1133	10.13

To compare the variation of consumption expenditure of female cultivators and agricultural labourers, the coefficient of variation is computed which is found to be around 7 percent for cultivators as against around 10 percent for labourers indicating that the consumption expenditure of cultivators is more consistent than labourers as C.V. of the cultivators is less than labourers. The possible reason may be that the cultivators have their own land and larger livestock resources. Therefore they can earn more income than labourers from farm and non-farm sources. In respect of groups, C.V. of the group B cultivators is highest (around 8 percent) followed by group A (around 7 percent) and group C (around 6 percent) indicating that the consumption expenditure of group C and group A cultivators is more consistent than

group B. The possible reason may be the lower family size of group C and A villages for cultivators than group B. But the C.V. of the group A, B and C labourers are almost same (around 10 percent) indicating that there is absence of intra village differences of consumption expenditure of group A, B and C labourers.

5.14. Analysis of variance of consumption expenditure of cultivators and labourers among study villages:

Group-wise analysis of variance in average consumption expenditure of female cultivators and agricultural labourers has been analysed by using ANOVA (one-way classification model) and the results are given in Table 5.14.

Table: 5.14.
ANNOVA (One-way Classification Model)

Cultivators					
Source of Variation	Degree of freedom	Sum of Squares	Mean sum of Squares	Variance Ratio	Critical Value at 5% level of significance
Between Groups	2	200133	100066	F = 0.00025	$F_{0.5} = 3.09$
Within Groups	108	42539079945	393880370		
Labourers					
Between Groups	2	106782	53391	F = 0.00011	$F_{0.5} = 3.09$
Within Groups	108	49436699684	457747219		

It has been observed from Table 5.14 that the variance ratio (F) is less than critical value at 5% level of significance ($F_{0.5}$) of female cultivators and agricultural labourers and therefore, the difference of the consumption expenditure among various groups is insignificant, although consumption expenditure of group A and C cultivators was found to be more consistent as per calculation of C.V,

5.15. Analysis of variance of consumption expenditure of cultivators and labourers within study groups:

The variance of consumption expenditure of female cultivators and agricultural labourers within the study groups has been analysed by using z-test.

Let the annual average consumption expenditure of female cultivators and labourers are μ_1 and μ_2 . Let the null hypothesis (H_0) be $\mu_1 = \mu_2$ against the alternative hypothesis (H_1) be $\mu_1 > \mu_2$.

The test statistic is

$$Z = \frac{\bar{X}_1 - \bar{X}_2}{SE(\bar{X}_1 - \bar{X}_2)}$$

$$\text{Where, } SE(\bar{X}_1 - \bar{X}_2) = \sqrt{\frac{\sigma_1^2 + \sigma_2^2}{n_1 + n_2}}$$

The result of the z-test is represented in Table 5.15.

Table 5.15: Results of z-test

Group	Annual Average Consumption		Z Value	Critical value	
	Cultivators	Labourers		1% level of significance	5% level of significance
A	623913.42	462981.03	22.33	1.96	2.58
B	487974.40	420413.70	9.97	1.96	2.58
C	459657.25	361554.56	18.59	1.96	2.58

It has been observed from Table 5.15 that the calculated value of z for consumption expenditure of cultivators and labourers in group A (22.33), group B (9.97) and group C (18.59) is higher than critical value at 1% and 5% level of significance. Therefore, we may reject the null hypothesis (H_0) and accept the alternative hypothesis (H_1) i.e. annual average consumption expenditure of female cultivators is greater than the labourers within the study groups, even though annual average income of cultivators and labourers provides no evidence of difference within study groups. This may be possible as consumption function is a psychological concept and it is influenced by subjective factors, like consumer's preferences, habits etc. Although variance of consumption expenditure among various groups is not significant, it is significant within the groups. Thus there are no inter-village differences of average consumption expenditure of cultivators and labourers. However, there are intra-village differences of average consumption expenditure between the two sections of rural society.

Conclusion: It is obvious that the farm income is the main source of income of female cultivators as against farm labour of agricultural labourers as the labourers have no land of their own. The permanent labour is the second important source of income for the labourers whereas it is the family labour performed by the family members of female cultivators that is also an important source of income for the female cultivators. The cultivators having a better resource base are earning more from the subsidiary occupations than that of the agricultural labourers. Income from the non-farm sources are also the significant sources of income for both the cultivators as well as for the labourers. However, the variation of income of the cultivators and labourers has been calculated by using coefficient of variation which is found to be around 3 percent for cultivators and labourers indicating that there is no difference in the income of the cultivators and labourers, as labour time use of cultivators and labourers were statistically insignificant indicating possible relationship between labour time use and income of the cultivators and labourers. In respect of groups of cultivators, the coefficient of variation of group A, B and C is almost the same indicating absence of inter village differences in income among female cultivators, as labour time use among groups of villages of cultivators was almost uniform. Similar phenomenon has been observed for groups of villages of labourers where the coefficient variation is close to 3 percent in groups A, B and C. Group-wise analysis of variance of average income of female cultivators and agricultural labourers has been analysed using ANOVA. It has been found that the variance ratio (F) of cultivators and labourers are less than the critical value at 5 percent level of significance and, therefore, the income difference of cultivators and labourers among various study groups is not significant. Further, the variance of income of female cultivators and agricultural labourers within the study groups has been analysed using Z-test. It has been found that the average income of cultivators and labourers in groups A, B and C is lower than the critical value at 1 percent and 5 percent level of significance and therefore it can be concluded that the annual average income of female cultivators and agricultural labourers provides no evidence of difference within study groups. Thus there is no inter-village and intra-village difference in income of female cultivators and agricultural labourers.

As income difference of female cultivators and agricultural labourers is statistically insignificant, therefore, it is obvious that there is little difference in the amount spent by the cultivators and labourers in the groups of villages. Similarly,

there is negligible difference in the percentage of expenditure made on different items of consumption. However, both these sections have very high spending on food items and less on their necessities like clothing, house, education, health care etc., indicating their living under poverty with very high marginal propensity to consume. To compare the variation in consumption expenditure of female cultivators and agricultural labourers, the C. V. is computed which is found to be around 7 percent for cultivators as against around 10 percent for labourers indicating that the consumption expenditure of cultivators is more consistent than labourers as C.V. of the cultivators is less than labourers. In respect of groups, C.V. of the group B cultivators is highest followed by group A and group C indicating that the consumption expenditure of group C and group A cultivators is more consistent than group B. But the C.V. of the groups A, B and C labourers are almost uniform (around 10 percent) indicating that there is absence of intra village differences in consumption expenditure between groups of A, B and C labourers. Group-wise analysis of variance of average consumption expenditure of cultivators and labourers has been analysed by using ANOVA and it has been observed that the variance ratio (F) is less than critical value at 5 percent level of significance and therefore, it can be calculated that the difference in consumption expenditure among various groups is insignificant, although consumption expenditure of group A and C cultivators was found to be more consistent as per result of the C.V. The variance of consumption expenditure of female cultivators and agricultural labourers within the study groups has been analysed using Z-test. It has been found that the calculated value of Z for consumption expenditure of cultivators and labourers in group A, B and C is higher than critical value at 1 percent and 5 percent level of significance. It can therefore be concluded that the annual average consumption expenditure of female cultivators is greater than the labourers within the study groups, even though income difference of cultivators and labourers was statistically insignificant which may be possible due to psychological nature of consumption function. Thus there is no inter-village differences in average consumption expenditure of cultivators and labourers as against intra village differences between the two sections of the rural society.

CHAPTER VI

ECONOMIC STATUS OF FEMALE CULTIVATORS AND AGRICULTURAL LABOURERS

Economic status of the female cultivators and agricultural labourers is a crucial factor in determining and influencing female labour force participation, income, consumption and hence their standard of living. Thus the primary objective of this chapter is to analyse the standard of living of female cultivators and agricultural labourers in the study villages using various indicators like asset holding, liabilities, housing conditions, percentage of households having electricity as source of lighting, access to safe drinking water within premises, sanitary facility, percentage of population having access to radio, television, telephone, access to healthcare services and also adult literacy rate.

6.01. Relative share of assets of cultivators and labourers:

Assets are economic resources. Assets represent ownership of value that can be converted into cash, although cash itself is also considered as an asset.

The economic conditions faced by the female cultivators and agricultural labourers are affected by a variety of assets, particularly physical and financial assets held at household and community levels. Their physical assets include natural capital like land, machines and tools and structures, stock of domestic animals and food, and financial assets mainly include jewellery, insurance and savings. The relative share of physical and financial assets of female cultivators and agricultural labourers has been depicted in Table: 6.01 which were collected from our study villages during last two weeks prior to the date of interview.

It has been observed from Table: 6.01 that the average value of assets of female cultivators is more than double in comparison to agricultural labourers. Being landless, the average value of assets for labourers is approximately 36 percent less than cultivators restricting their capabilities to access modern inputs, technology and credit. In respect of groups, the value of assets is the maximum for group A cultivators and minimum in group C. In fact, the value of assets for group A cultivators is almost 20 percent more than group C. Similarly, the value of assets for group A labourers is almost 16 percent higher than group C.

Table: 6.01

Value of assets of cultivators and labourers in study villages (in Rs.)

	Cultivators				Labourers			
	A	B	C	Average	A	B	C	Average
A. Physical Assets								
Land (Cultivable)	413416.00 (34.65)	314612.00 (32.84)	261090.17 (33.2)	329706.05 (33.56)	—	—	—	—
Dwelling House	20418.86 (19.57)	18752.96 (18.2)	143127.74 (17.11)	178264.85 (18.29)	86325.57 (16.8)	78318.87 (16.14)	56668.64 (15.2)	73771.02 (16.13)
Loom	6896.76 (0.57)	5567.03 (0.58)	4639.85 (0.59)	5701.21 (0.58)	6679.95 (1.3)	6264.90 (1.29)	4101.02 (1.1)	5681.95 (1.24)
Hand tube well	9497.28 (0.79)	10001.09 (1.04)	7549.59 (0.96)	9015.98 (0.93)	3545.51 (0.69)	3228.52 (0.66)	2087.79 (0.56)	2953.94 (0.64)
Sewing Machine	4296.24 (0.36)	3396.90 (0.35)	2516.53 (0.32)	3403.22 (0.34)	1644.29 (0.33)	1578.28 (0.32)	1043.89 (0.28)	1422.15 (0.31)
Furniture, Utensils, Croceries	37423.42 (3.13)	28155.05 (2.93)	24378.90 (3.10)	29985.79 (3.05)	19012.18 (3.7)	18522.28 (3.81)	10811.78 (2.9)	16115.41 (3.52)
Bicycle/ Scooter	18429.06 (1.54)	11982.95 (1.25)	8729.21 (1.11)	13047.07 (1.30)	7193.79 (1.5)	6847.82 (1.41)	4473.84 (1.2)	6171.81 (1.34)
Radio/ TV/ Telephone	12097.80 (1.01)	8586.05 (0.89)	5662.19 (0.72)	8782.01 (0.87)	4059.35 (0.79)	3808.42 (0.78)	1081.17 (0.29)	2982.98 (0.65)
Stove/ Gas, Torch/ Lantern	3731.52 (0.31)	3490.70 (0.36)	2201.96 (0.28)	3141.39 (0.31)	1490.14 (0.29)	1394.28 (0.28)	783.00 (0.21)	1222.47 (0.26)
Electric Fan	17185.74 (1.44)	11510.60 (1.20)	7706.87 (0.98)	12134.40 (1.20)	6166.11 (1.3)	5824.21 (1.20)	3653.63 (0.98)	5214.65 (1.14)
1. Live Stock Assets								
Buffaloes/ Bullocks	165072.96 (13.83)	143302.00 (14.96)	122680.92 (15.6)	143685.29 (14.79)	131543.73 (25.6)	119526.85 (24.64)	98424.48 (26.4)	116498.35 (25.48)
Cows	99948.42 (8.37)	77935.49 (8.82)	73699.71 (9.37)	83861.20 (8.85)	100723.13 (19.6)	88149.00 (18.17)	75309.64 (20.2)	88060.59 (19.26)
Goats/ Sheep	5426.54 (0.54)	5757.06 (0.60)	10111.70 (1.28)	7098.43 (0.80)	8879.00 (1.72)	8274.00 (1.70)	7829.22 (2.1)	8327.40 (1.82)
Poultry	17185.75 (1.44)	14435.82 (1.50)	22268.09 (2.83)	17963.22 (1.92)	78515.16 (15.28)	78246.00 (16.13)	70090.16 (18.8)	75617.10 (16.53)
Others	14132.82 (1.18)	2264.60 (0.23)	7549.59 (0.96)	7982.33 (0.79)	10790.69 (2.1)	12584.00 (2.59)	8698.00 (2.33)	10690.89 (2.33)
2. Miscellaneous								
Sub Total (A)	1057371.01 (88.62)	858738.30 (89.66)	719251.11 (91.45)	878453.47 (89.91)	471193.39 (91.70)	444992.43 (91.75)	348086.76 (93.36)	421424.32 (92.17)
B. Financial Assets								
Jewellery	45451.38 (3.80)	30286.68 (3.16)	21395.68 (2.72)	32377.91 (3.22)	13359.91 (2.6)	12946.92 (2.66)	7456.40 (2.0)	11254.41 (2.46)
Insurance	72415.00 (6.06)	54112.00 (5.64)	36332.42 (4.62)	54286.47 (5.44)	23636.76 (4.60)	21546.80 (4.44)	14167.16 (3.8)	19783.57 (4.32)
Cash in hand/ Bank	11419.20 (0.95)	10212.00 (1.06)	6448.61 (0.82)	9359.93 (0.94)	4007.97 (0.78)	3946.92 (0.81)	2087.79 (0.56)	3347.56 (0.73)
Others	6412.00 (0.53)	4410.00 (0.46)	2988.38 (0.38)	4603.46 (0.45)	1644.29 (0.32)	1542.08 (0.31)	1043.89 (0.28)	1410.08 (0.30)
Sub Total (B)	135697.58 (11.37)	99020.68 (10.33)	67165.09 (8.54)	100627.77 (10.08)	42648.93 (8.30)	39982.72 (8.21)	24755.24 (6.63)	35795.63 (7.82)
Total (A+B)	1193068.59	957758.98	786416.20	979081.24	513842.72	484975.15	372820.00	457212.62

Source: Field survey

N.B.: Figures in brackets are percentages

The assets are divided into two parts as physical assets and financial assets. It has been observed that the value of physical assets to the total value of assets for cultivators and labourers is almost uniform in all groups i.e. around 90-92 percent. Moreover, the value of financial assets to the total value of assets for cultivators and labourers is also almost same in all groups i.e., around 8-10 percent as there was no major distinction of average propensity to save for both the sections of the society i.e. around 4-5 percent. In respect of groups, the average value of physical assets for cultivators varies from about 89-91 percent as against 8-11 percent of financial assets indicating no major distinction of the value of physical and financial assets among the groups of villages of cultivators as their farm income was almost same i.e. around 47-48 percent to their total income. Similar trend has been observed for the groups of villages of labourers where the value of physical assets varies from about 92-93 percent to their average value of assets. But their value of financial assets is lower than cultivators which are around 7-8 percent to their total values of assets in group A, B and C as they have no farm income and casual labour is the main source of their income.

Among the physical assets, the value of land is around 33 percent of the total value of assets for cultivators in all groups. Although value of land depends upon situational advantage and proximity to urban centres, yet almost same value of land was found for the groups of villages of cultivators. The value of land ranges between 33-35 percent of the total values of assets for groups of villages of cultivators. In the absence of landholding there is no land asset for agricultural labourers. The value of dwelling houses is about 18 percent of the total value of assets for cultivators as against around 16 percent for labourers indicating no major distinction of housing conditions of cultivators and labourers. In respect of groups of villages of cultivators the value of dwelling houses varies from about 17-19 percent of the total value of assets indicating that the housing conditions of group A, B and C cultivators are almost same. On the other hand, the value of dwelling houses for labourers varies between 15-17 percent of the total value of assets indicating the same thing i.e. almost same housing conditions for group A, B and C labourers. It has been observed during our field survey that loom and livestock are the two important physical assets for labourers. The value of loom for female cultivators is almost 1 percent of the total value of assets as against less than 1 percent for labourers in all groups. But by combining all the livestock assets, it has been observed that the value of livestock

assets for labourers is around 65 percent to their total value of assets as against only 27 percent for cultivators. The possible reason for higher value of livestock assets for labourers may be the 'livestock sharing' system under which the labourers are allowed to borrow livestock from employer cultivators. The major livestock assets for both cultivators and labourers are buffaloes / bullocks, cows and poultry. The value of buffaloes / bullocks, cows and poultry for labourers is around 25, 19 and 16 percent respectively in all groups as against around 15, 9 and only 2 percent for cultivators, although income from dairy and poultry farming of cultivators were marginally higher than labourers. The possible reason for higher values of livestock assets for labourers compared to cultivators may be the same i.e. prevalence of 'live stock sharing' system. Most of the labourers borrowed livestock from cultivators and the income is shared between the two sections on the basis of contract settled between them. In respect of groups, the value of all the livestocks varies from around 63-70 percent of the total value of all assets for labourers as against 25-30 percent for cultivators. It indicates that the values of livestocks for the groups of villages of labourers are higher than cultivators, although the labourers are less economically affluent than cultivators. The possible reason may be the same i.e. prevalence of livestock borrowing system. Sometime the labourers are allowed to use the cattle yards owned by cultivators under this system as observed during field survey. The value of hand tube well which is an important devices for safe drinking water is very low for both the sections of the society. The value of hand tubewells to the total values of assets is less than 1 percent for both cultivators and labourers in all groups indicating that the majority of cultivators and labourers accessed drinking water from other sources like wells, ponds and river, although the resource base of cultivators is higher than labourers. In respect of groups, the value of hand tubewells varies from less than 1 percent to 1 percent approximately for both cultivators and labourers. Similarly, the values of sewing machines are negligible for both cultivators and labourers as farm and farm based activities are the major economic activities for both the sections of the society. The value of furniture, utensils and crockeries for cultivators and labourers is around 3 percent of their total value of assets in all groups. In respect of groups, the value for such item varies from around 3-4 percent for both cultivators and labourers. It indicates that the dowry system in our study villages may be less prominent as it has been observed that dowry is an important mode to acquire furniture and utensils (bell-metal) like other parts of the state. The value of bicycle / scooter which is the major

mode of rural transport is almost same for both the sections of the society. It is around 1 percent of their total value of assets for cultivators and labourers in all groups. In respect of groups of cultivators and labourers the values of bicycle and scooter is little over 1 percent to their total value of assets. The value of Radio / TV and telephone which is the major mode of communication in rural areas is negligible i.e., around 1 percent for cultivators and labourers in all groups. In respect of groups also there is little variation of the values of Radios, TVs and Telephones for group A, B and C cultivators and labourers, although the cultivators are more economically affluent than labourers indicating their little attention for assessing latest information and entertainment, possibly may be due to their poverty. Both the sections use mostly firewood and agricultural extracts as source of fuel. This may be the possible reason for negligible values of stove, LPG gas etc. for cultivators and labourers in all groups as well as among the groups of villages. The value of electric fan is approximately 1 percent of the total value of assets for cultivators and labourers in all groups. Same phenomenon has been observed for groups of villages of cultivators and labourers where the values of electric fan hovered around 1 percent to their total values of assets. It indicates reluctance on the parts of cultivators and labourers to use electric fan and prefer to use handmade bamboo fan possibly may be due to their poverty or due to prolonged power cuts, although almost 60 percent of households for cultivators and labourers are electrified. In respect of groups of villages for cultivators and labourers the values of electric fan is little over 1 percent indicating the same thing mentioned just now.

Among the financial assets, the value of insurance is highest for both the sections of the society as it was observed during the field survey that the insurance agents belonging to their family or relatives manage privately to deposit their respective premiums on installment. Sometime the said agents collect premiums per day and deposit it either quarterly or half yearly or annually. The value of insurance is around 5 percent of the total value of assets for cultivators as against almost 4 percent for labourers in all groups. In respect of groups, the insurance values varies from around 5-6 percent of the total value of assets for cultivators compared to 4-5 percent for labourers indicating no major distinction of the values of insurance among the groups of villages for cultivators and labourers as APS for both the two sections was almost the same. The value of jewellery which is less liquid than money is around 3 percent for cultivators as against almost 2 percent of labourers in all groups as it is

customary to ornate a married girl (for both cultivators and labourers), although dowry system in our study villages is not prominent like other parts of the country as mentioned earlier. In respect of groups, the value of jewellery varies from around 3-4 percent of the total values of assets for cultivators compared to 2-3 percent for labourers indicating no major distinction of the value of jewellery among the groups of villages for cultivators and labourers. The value of cash in hand / bank which is the most liquid asset is around 1 percent for cultivators and labourers in all groups as average propensity to save for both the sections of the society was almost the same. In respect of groups, it is the maximum for group B cultivators and labourers with around 1 percent and minimum in group C with less than 1 percent to their total value of assets. The value of other financial assets like stocks, shares, bonds etc., is almost negligible for cultivators and labourers. It has been observed that the cultivators and labourers are totally unaware about such financial assets as most of them are illiterate and the level of educational attainment is low.

6.02. Per capita assets:

The per capita value of assets is a useful measure to be familiar with the economic position of an individual. The per capita value of assets for female cultivators and agricultural labourers is depicted in Table: 6.02.

It has been observed from Table: 6.02 that the per capita value of assets for female cultivators is higher than labourers. It is around Rs.14000 for cultivators as against Rs.7000 approximately for labourers in all groups. In fact, the per capita value of assets for cultivators is more than double compared to labourers. It may indicate better economic position of cultivators than labourers, although per capita value of assets is not the sole indicator of economic betterment. In respect of groups, the per capita value of assets for group A cultivators and labourers is almost 12 percent higher than group C indicating higher resource base for group A cultivators and labourers than group C.

The per capita value of physical assets for cultivators and labourers in all groups is almost same i.e. around 90-93 percent to their total per capita values of assets. In respect of groups, it varies from about 89-92 percent to their total per capita assets for cultivators compared to about 89-93 percent for labourers. It indicates that there is no distinction of per capita values of physical assets for cultivators and

labourers in all groups as well as among the groups indicating almost same economic position for cultivators and labourers.

Table: 6.02:
Per capita value of assets (in Rs.)

	Cultivators				Labourers			
	A	B	C	Average	A	B	C	Average
A. Physical Assets								
1. Land (Cultivable)	5300.20 (34.65)	4695.70 (32.84)	4016.77 (33.19)	4670.89 (33.61)	—	—	—	—
2. Dwelling House	2958.85 (19.47)	2798.89 (19.57)	2201.96 (18.19)	2653.32 (19.09)	1251.09 (16.79)	1118.84 (16.14)	885.44 (15.19)	1085.12 (16.11)
3. Loom	88.42 (0.57)	83.09 (0.58)	71.38 (0.58)	83.63 (0.60)	96.81 (1.29)	89.49 (1.29)	64.07 (1.09)	83.45 (1.23)
4. Hand tube wells	121.76 (0.79)	149.27 (1.04)	116.14 (0.95)	129.05 (0.92)	51.38 (0.68)	46.12 (0.66)	32.62 (0.55)	43.37 (0.64)
5. Sewing Machine	55.08 (0.36)	50.7 (0.35)	38.71 (0.31)	48.16 (0.34)	23.83 (0.31)	22.54 (0.32)	16.31 (0.27)	20.89 (0.31)
6. Furniture, Utensils, Crockeries	479.78 (3.13)	420.22 (2.93)	375.06 (3.09)	425.02 (3.05)	275.53 (3.69)	264.60 (3.81)	168.93 (2.89)	236.35 (3.51)
7. Bicycle/ Scooter	236.27 (1.54)	178.85 (1.25)	134.29 (1.10)	183.13 (1.31)	104.25 (1.39)	97.82 (1.41)	69.90 (1.19)	90.65 (1.34)
8. Radio/ TV/ Telephone	155.10 (1.01)	128.15 (0.89)	87.11 (0.71)	123.45 (0.88)	58.83 (0.79)	54.40 (0.78)	16.89 (0.28)	43.37 (0.64)
9. Stove/ Gas, Torch/ Lantern	47.84 (0.31)	52.10 (0.36)	33.87 (0.27)	44.60 (0.32)	21.59 (0.28)	19.91 (0.28)	12.23 (0.20)	17.91 (0.26)
10. Electric Fan	220.33 (1.44)	171.80 (1.20)	118.56 (0.97)	170.23 (1.22)	89.36 (1.19)	83.20 (1.20)	57.08 (0.97)	76.54 (1.13)
11. Live Stock Assets								
a) Buffaloes/ Bullocks	2116.32 (13.83)	2138.83 (14.96)	1887.39 (15.59)	2047.51 (14.73)	1812.70 (24.34)	1707.52 (24.64)	1537.88 (26.39)	1686.03 (25.03)
b) Cows	1281.39 (8.37)	1163.21 (8.13)	1133.84 (9.37)	1192.81 (8.58)	1422.31 (19.09)	1259.27 (18.17)	1176.71 (20.19)	1286.09 (19.09)
c) Goats/ Sheep	69.57 (0.45)	85.92 (0.60)	155.56 (1.28)	103.68 (0.74)	128.68 (1.72)	118.20 (1.70)	122.33 (2.09)	123.07 (1.82)
d) Poultry	220.33 (1.44)	215.46 (1.50)	342.58 (2.83)	259.45 (1.86)	1105.63 (14.84)	1117.80 (16.13)	1095.15 (18.79)	1106.19 (16.42)
e) Others	181.19 (1.18)	33.80 (0.23)	65.30 (0.53)	93.43 (0.67)	212.78 (2.85)	179.77 (2.59)	135.90 (2.33)	176.15 (2.61)
12. Miscellaneous	365.28 (2.38)	301.68 (2.11)	235.92 (1.94)	300.96 (2.16)	174.05 (2.33)	177.50 (2.56)	47.00 (0.80)	132.85 (1.97)
Sub Total (A)	13556.03 (88.62)	12816.98 (89.66)	11065.40 (91.45)	12479.47 (89.80)	6828.89 (91.70)	6357.03 (91.75)	5438.85 (93.36)	6208.25 (92.19)
B. Financial Assets								
1. Jewelleries	582.71 (3.80)	452.04 (3.16)	329.16 (2.72)	454.63 (3.27)	193.62 (2.59)	184.95 (2.66)	116.50 (1.99)	165.02 (2.45)
2. Insurance	928.39 (6.06)	807.64 (5.64)	558.96 (4.61)	764.99 (5.50)	342.56 (4.59)	307.81 (4.44)	221.36 (3.79)	290.57 (4.31)
3. Cash in hand/ Bank	146.40 (0.95)	152.41 (1.06)	99.20 (0.81)	132.67 (0.95)	58.08 (0.77)	56.38 (0.81)	32.62 (0.55)	49.03 (0.72)
4. Others	82.20 (0.53)	65.82 (0.46)	45.97 (0.37)	64.66 (0.46)	23.83 (0.31)	22.02 (0.31)	16.31 (0.27)	20.72 (0.30)
Sub Total (B)	1739.71 (11.37)	1477.92 (10.33)	1033.30 (8.54)	1416.97 (10.19)	618.10 (8.29)	571.18 (8.24)	386.80 (6.63)	525.36 (7.80)
Total	15295.75	14294.91	12098.71	13896.45	7446.99	6928.21	5825.31	6733.50

Source: Field survey

N.B.: Figures in brackets are percentages

On the other hand, the per capita value of financial assets is around 10 percent for cultivators as against almost 8 percent for labourers to their total per capita value of assets in all groups. In respect of groups, it varies from about 9-11 percent to their respective per capita value of assets for cultivators as against 7-8 percent for labourers. It indicates that the per capita value of financial assets for cultivators is marginally higher than labourers, although average propensity to save (APS) for both the sections was almost the same. The possible reason may be the differences in willingness to save rather than capacity to save as income level for both the two sections was almost the same.

Among the physical assets, the most important is the land where the per capita value of land asset is around 34 percent to their total value of assets for cultivators in all groups. In respect of groups, there are little variations in per capita value of land assets for cultivators which are around 33-35 percent to their respective per capita value of assets, although group A and group B villages are situated in close proximity to the urban centre. On the other hand, there is no per capita value of land asset for labourers as they have no land holdings.

The per capita value of dwelling houses is indicative of the pattern of dwelling houses where cultivators and labourers are living. It is around 19 percent to the total per capita value of assets for cultivators in all groups as against almost 16 percent for labourers indicating possibility of more pucca or semi-pucca houses for cultivators than labourers. In respect of groups, the per capita value of dwelling houses varies from about 18-19 percent to their respective per capita value of assets for cultivators as against almost 15-16 percent for labourers. It indicates that there is no major distinction between per capita values of dwelling houses for cultivators and labourers within the groups, although the cultivators have their own land. The possible reason for almost the same per capita values of dwelling houses for cultivators and labourers may be that the level of income for both the two sections was almost the same as mentioned in the previous chapter.

Handloom and weaving is one of the most important subsidiary occupations for cultivators and labourers. The per capita value of loom for labourers is marginally higher than cultivators. It is more than 1 percent to their total per capita values of assets for labourers compared to less than 1 percent for cultivators. In respect of groups of villages for cultivators and labourers there is negligible difference of per capita value of loom which is around 1 percent to their respective values of assets for

labourers compared to only about 0.5 percent for cultivators as the cultivators have their own land and they are reluctant to acquire loom to supplement their income.

The per capita value of hand tube wells is low for both the sections of the society. It is only around 1 percent to their total per capita values of assets for both cultivators and labourers in all groups indicating that the cultivators and labourers assessed drinking water mostly from other sources like wells, ponds and river. In respect of groups of villages for cultivators it is around 1 percent compared to less than 1 percent for labourers as the resource base of the cultivators is higher than labourers.

Furniture, utensils and crockery are the important house hold instruments indicating levels of living. The per capita value of such assets is almost the same for cultivators and labourers in all groups i.e. around 3 percent to their total per capita values of assets. In respect of groups it varies from about 3-4 percent for cultivators and labourers indicating almost similar levels of living for both the two sections of the society.

Bicycles /scooters are the important modes of rural transport. But the per capita value of such assets is almost the same for both the sections of the rural society. It is around 1 percent to their total per capita value of assets for cultivators and labourers in all groups. In respect of groups, there is little variation of per capita value for bicycle and scooter for cultivators and labourers i.e., around 1 percent to their total value of assets indicating almost the same level of living for both the two sections of society.

Similarly the per capita values of Radio / TV / telephone for cultivators and labourers are also same i.e., around 1 percent to their total value of assets for both the sections of the society indicating their inabilities to access latest and up-to-date information. In respect of groups also there is little variation of the per capita values of such assets. It is almost 1 percent to their total per capita values of assets for group A cultivators and less than 1 percent for cultivators and labourers of other groups.

Availability of electric fan is indicative of level of living of a household. But the per capita value of electric fan is almost the same for cultivators and labourers i.e. around 1 percent in all groups. In respect of groups of villages for cultivators and labourers also, the per capita value of electric fan varies from less than 1 percent to little over 1 percent indicating almost the same level of living for both the two sections of the society.

Combining all the livestock assets, it has been observed that the per capita value of livestock assets for cultivators is lower than labourers. The per capita value of livestock assets for labourers is around 65 percent to their total per capita assets as against almost 26 percent for cultivators in all groups as landlessness compels the labourers to acquire larger livestock assets to supplement their income either through their own source of income or through 'livestock sharing' system prevailing in our study villages. In respect of groups, the per capita value of livestock assets to their total per capita value of assets is around 70 percent and 63 percent respectively for group C labourers and cultivators respectively as against almost 25-30 percent for group A cultivators and labourers.

The per capita value of financial assets is indicative of economic soundness of an individual or a household as the surplus income over consumption is generally saved in various types of liquid assets. It has been observed from the Table that the per capita value of financial assets for cultivators is marginally higher than labourers in all groups. It is around 10 percent to the total per capita value of assets for cultivators in all groups as against 8 percent for labourers, although the APS for both the two sections was almost the same. The possible reason for this may be the differences of willingness to save rather than their capacity as income level for both the sections was almost the same. Similar phenomenon has been observed for the groups of villages of cultivators and labourers where the per capita value of financial assets varies from around 9-11 percent to their total per capita value of assets for cultivators compared to about 7-8 percent for labourers indicating little variation of the per capita values of financial assets among the study groups.

Among the financial assets, the per capita value of jewellery is around 3 percent to the total per capita value of assets for cultivators as against almost 2 percent for labourers indicating no major distinction of the per capita value of jewellery between cultivators and labourers as both the sections are living on subsistence. In respect of groups, the per capita value of jewellery varies from about 3-4 percent to their total per capita values of assets for cultivators compared to around 2-3 percent for labourers.

However, the per capita value of insurance is marginally higher for cultivators than labourers. It is around 6 percent to their total value of assets for cultivators in all groups compared to about 4 percent for labourers. The possible reason may be the differences in willingness to save rather than their capacity to save as mentioned

earlier. In respect of groups the per capita values of insurance varies from about 5-6 percent to their respective per capita values of assets for cultivators as against almost 4-5 percent for labourers indicating no major distinction of the per capita values of insurance within the groups of villages of cultivators and labourers.

The per capita value of cash in hand or bank deposit is low for both the sections of the society. It is around 1 percent to the total per capita value of assets for cultivators as against less than 1 percent for labourers in all groups, although the resource base of cultivators is higher than labourers. In groups, there is little variation in per capita values of cash in hand or bank deposit which is around 1 percent to the total per capita value of assets for cultivators as against negligible percent for labourers as it has been observed that both the sections are poor and their marginal propensity to consume is high.

6.03. Liabilities of female cultivators and agricultural labourers:

Liabilities are the big burden for any household. Although it is a medium for their growth and development, yet repayment of liabilities is always a big problem, as it involves transfer of wealth. The liabilities on loan outstanding of female cultivators and agricultural labourers is available from two sources — the institutional sources which includes the Nationalised Commercial Banks, Grameen Banks, Co-operative Societies and Self-Help Groups and the non-institutional sources including village money lender, employers, shopkeepers, relatives and others.

Table 6.03 depicts the total amount of loan provided by the different sources including the institutional and non-institutional to the female cultivators and agricultural labourers collected during last two weeks prior to the date of interview.

It has been observed from Table 6.03 that the amount of loan for the cultivators is more than labourers in all groups. It is about Rs.1,42,000 for cultivators as against only Rs.92,000 for labourers in all groups. In fact, cultivators are taking almost 21 percent more loans from institutional and non-institutional sources than labourers as the cultivators have land assets of their own. Although labour force participation and income of the labourers were almost the same to that of the cultivators, yet the labourers are taking less loan than cultivators from various sources as they have no land of their own to mortgage. In respect of groups, the amount of loan taken by the cultivators ranges approximately between Rs1,40,000-1,50,000 as labour force participation and income among the groups of villages of cultivators

provided no evidence of difference. Similar phenomenon has been observed for labourers where amount of loan taken by the groups of villages ranges between Rs.86,000-1,00,000.

Table 6.03
Loan obtained by cultivators and labourers from different sources (in Rs.)

Sl. No.		Cultivators				Labourers			
		A	B	C	Average	A	B	C	Average
A. Institutional Sources									
1	SHG	32510.00 (21.23)	23480.00 (16.75)	22400.00 (16.26)	26130.00 (18.31)	15682 (15.67)	14144 (15.53)	12807 (14.8)	14211 (15.35)
2	Grameen Bank	31707.00 (21.1)	29210.00 (20.84)	28210.00 (20.48)	29709.00 (20.81)	—	—	—	—
3	Commercial Bank	25829.00 (17.2)	23165.00 (16.52)	21753.00 (15.8)	23582.33 (16.52)	—	—	—	—
4	Co-operative Societies	13374.00 (8.9)	12060.00 (8.60)	10188.00 (7.4)	11874.00 (8.32)	7917 (7.91)	6904 (7.58)	6143 (7.10)	6988 (7.54)
Sub-Total (A)		103420.00 (64.6)	87915.00 (62.73)	82551.00 (59.95)	91295.33 (62.42)	23599 (23.58)	21048 (23.1)	18950 (21.90)	21199 (22.90)
B. Non-institutional Sources									
1	Money Lender	23737 (15.79)	18880.00 (13.47)	19860.00 (14.42)	20825.66 (14.59)	23460 (23.30)	21221 (23.44)	20594 (23.8)	21758.33 (23.50)
2	Employers	—	—	—	—	9123 (9.11)	8562 (9.4)	8220 (9.5)	8635 (9.32)
3	Shopkeepers and Commission Agents	13499.00 (8.98)	12050.00 (8.59)	12966.00 (9.41)	12838.33 (8.99)	22458 (22.44)	20493 (22.5)	18961 (22.7)	20637.33 (22.29)
4	Relatives	18314.00 (12.18)	17080.00 (12.08)	17920.00 (13.01)	17771.33 (12.45)	17658 (17.64)	16212 (17.8)	15575 (18.0)	16481.66 (17.80)
5	Others / Miscellaneous	4020.00 (2.67)	4220.00 (3.01)	4380.00 (3.18)	4206.66 (2.94)	3780 (3.77)	3542 (3.88)	4229 (4.88)	3850.33 (4.15)
Sub-Total (B)		53210.00 (35.40)	52230.00 (37.25)	55126.00 (40.04)	53522.00 (37.50)	76479 (76.41)	70030 (76.89)	67579 (78.09)	71362.66 (77.09)
Total (A+B)		150270.00	140145.00	137677.00	142697.33	100078.00	91078.00	86529.00	92561.66

Source: Field survey

N.B.: Figures in brackets are percentages

It has also been observed that the cultivators are taking more loans from institutional sources and less from non-institutional sources. The loan taken from institutional sources by the cultivators is around 64 percent to their total loans in all groups as against about 37 percent from non-institutional sources. On the other hand, the labourers are taking more loans from non-institutional sources than institutional one. The loan obtained by labourers from non-institutional sources in all groups is about 77 percent to their total loans as against about 23 percent from institutional sources. In the absence of landholdings, the labourers are not able to offer any collateral security to the Nationalised Commercial Banks and Grameen Banks and it may be the possible reason for getting higher loans by the labourers from non-institutional sources in comparison to institutional sources. In other words, the

labourers are compelled to depend more on non-institutional sources due to their limited capacity.

In case of institutional sources of loan, the Grameen Banks (Assam Grameen Vikash Bank) is contributing the maximum loan to the cultivators. It is around 21 percent to the total loan taken by the cultivators in all groups as the branches of Grameen Banks are situated proximity to our study villages in comparison to Nationalised Commercial Banks. On the other hand, the labourers are not getting any loans from Grameen Banks as they are unable to offer any collateral security due to their landlessness and poverty, although one of the basic objectives of Grameen Banks is to extend rural credit to agricultural labourers. In respect of groups, there are negligible differences of extending rural credit to the cultivators from this source. It is around 21 percent to the total loan for group A, B and C cultivators.

The second important institutional source of loans is Commercial Banks. The amount of loan taken by the cultivators from this source is around 16 percent in all groups to their total loans whereas the labourers are not getting any loans from this source due to their landlessness and poverty as mentioned earlier. In respect of groups of villages for cultivators the amount of loan taken from commercial banks varies from about 16-17 percent to their total loans indicating no major distinction of loan taken by the groups of villages of cultivators as their value of land assets was almost the same.

The Co-operative Societies are contributing only 7-8 percent to the total loan taken by the cultivators and labourers in all groups as it has been observed that most of the co-operative Societies are not functioning well due to their weak management and inadequate financial resources. In respect of groups, there is no major distinction of loan taken by the cultivators and labourers from this source which is around 7-9 percent only to their total loans, although financial assets of cultivators were more than labourers. It indicates minimum role played by the co-operative societies in extending rural credit to the cultivators and labourers.

Among the non-institutional sources, the village money lender or Mahajan (local name) is contributing maximum loan to the labourers than cultivators. It is around 23 percent to the total loan for labourers in all groups as against around 14 percent for cultivators as it has been observed that the money lender supply credit almost freely for productive and non-productive purposes and he is easily accessible and maintains a close and personal contact with the cultivators and labourers, often

having relations with family extending over generations. In respect of groups, the share of loan from this source is around 23 percent to their total loans for group A, B and C labourers as against about 13-16 percent for cultivators. In fact, the groups of villages of labourers is taking almost 10 percent more loans from money lenders than cultivators as the labourers has no option rather than to depend on money lenders to overcome their financial emergencies relating to productive and unproductive purposes indicating possibility of rural indebtedness as the rate of interest of loan taken from village money lender is comparatively higher than loans taken from other sources.

Another important non-institutional source of credit for labourers is the loan taken from employer cultivators. It is around 9 percent to the total loan of labourers in all groups. In respect of groups there is no major distinction of loan taken by the labourers from this source which is around 9-10 percent to the total loan of group A, B and C villages. It has been observed during field survey that the labourers takes loans from employer cultivators for productive and consumption purposes by pledging their labour as they have no option due to their meager value of physical and financial assets.

Shopkeepers and commission agents also supply funds to cultivators and labourers mainly for productive purposes much before the crops mature. They force the cultivators and labourers to sell their produce at lower prices and they charge a heavy commission from them. It has been observed from Table 6.03 that the labourers are taking more loans from this source than cultivators. It is around 22 percent to their total loans for labourers in all groups as against 9 percent of cultivators as resource base of the labourers is less than cultivators and they take loan from this source particularly against cash crops like coconut and fruit orchards. In respect of groups of villages of labourers it is around 22 percent to their total loans as against almost 9 percent of cultivators.

Cultivators and labourers also borrow from their own relatives in cash or kind in order to tide over their temporary emergencies. These loans are generally contracted in an informal manner; they carry low or no interest and they are returned soon after the harvest. It is again the labourers who borrow more from this source than cultivators. It is around 18 percent in all groups for labourers as against 12 percent for cultivators. In respect of groups, it varies from 12-13 percent to their total loans for cultivators as against 17-18 percent for labourers.

Both the cultivators and labourers also take loans from miscellaneous sources like loan from friends, neighbours etc. Further, it is the labourers who borrow more from this source than cultivators. It is around 4 percent in all groups to their total loans for labourers as against almost 3 percent for cultivators. In respect of groups it varies from around 4-5 percent to their total loans for labourers in comparison to almost 3 percent for cultivators.

6.04. Per capita liabilities:

Per capita or per head liabilities is a better measure of indebtedness of female cultivators and agricultural labourers. Table 6.04 depicts the per capita liabilities of female cultivators and agricultural labourers in our study villages.

Table: 6.04
Per capita liabilities (in Rs.)

	Cultivators				Labourers			
	A	B	C	Average	A	B	C	Average
A. Institutional Source								
1. SHG	417.79 (20.02)	350.04 (16.73)	344.61 (16.27)	370.81 (17.66)	227.27 (15.66)	202.05 (14.50)	200.10 (14.80)	209.80 (15.00)
2. Grameen Banks	406.50 (19.48)	435.97 (20.84)	434.00 (20.49)	425.49 (20.27)	—	—	—	—
3. Commercial Banks	326.94 (15.67)	345.74 (16.53)	334.66 (15.80)	335.78 (16.0)	—	—	—	—
4. Co-operattive Societies	171.46 (8.21)	180.00 (8.60)	156.73 (7.39)	169.39 (8.07)	114.73 (7.91)	98.62 (7.07)	95.98 (7.09)	103.11 (7.37)
Sub-Total (A)	1322.69 (63.39)	1311.75 (62.72)	1270.00 (59.96)	1301.48 (62.01)	342.00 (23.58)	300.67 (21.58)	296.08 (21.89)	312.91 (22.37)
B. Non-institutional Source								
1. Money Lender	304.32 (14.58)	281.79 (13.47)	305.53 (14.42)	297.21 (14.16)	340.00 (23.44)	335.14 (24.05)	321.78 (23.80)	332.30 (23.76)
2. Employers	—	—	—	—	132.21 (9.11)	130.32 (9.35)	128.43 (9.49)	130.32 (9.31)
3. Shopkeepers and Commission Agents	173.06 (8.29)	179.85 (8.59)	199.47 (9.41)	184.12 (8.77)	325.47 (22.47)	320.82 (23.02)	296.26 (21.91)	314.18 (22.46)
4. Relatives	234.79 (11.25)	254.94 (12.19)	275.69 (13.01)	255.14 (12.15)	255.91 (17.64)	252.25 (18.10)	243.35 (17.99)	250.50 (17.91)
5. Other / Miscellaneous	51.53 (2.46)	62.98 (3.01)	67.38 (3.18)	60.63 (2.88)	54.78 (3.77)	54.00 (3.87)	66.07 (4.88)	58.28 (4.16)
Sub-Total (B)	763.70 (36.60)	779.56 (37.27)	848.07 (40.03)	797.11 (37.98)	1108.37 (76.41)	1092.53 (78.41)	1055.89 (78.10)	1085.58 (77.62)
Total (A+B)	2086.39	2091.31	2118.07	2098.59	1450.37	1393.20	1351.97	1398.49

Source: Field survey

N.B.: Figures in brackets are percentages

It has been observed from Table 6.04 that the per capita liabilities of female cultivators are more than labourers in all groups. It is around Rs.2100 for cultivators as against approximate to Rs.1400 for labourers in all groups indicating that the per capita liabilities for cultivators are almost 20 percent more than labourers as the

cultivators enjoys better opportunities than labourers for acquiring loans from institutional sources due to their land ownership. In respect of groups of villages of cultivators and labourers there is no major distinction of per capita liabilities which is around Rs.2100 for cultivators and Rs1300-1400 for labourers in group A, B and C.

It has also been observed that the per capita liabilities of cultivators from institutional sources are more than non-institutional sources as because they have their own land. The per capita liabilities for cultivators from institutional sources are around 62 percent to their total per capita liabilities in all groups as against only 38 percent from non-institutional sources. In absence of land holdings, the per capita liabilities of labourers from non-institutional sources are more than institutional sources. It is around 78 percent to their total per capita liabilities from non-institutional sources in all groups' as against only 22 percent from institutional sources.

In case of institutional sources, the per capita liabilities of cultivators from Grameen Banks are highest with around 20 percent to their total per capita liabilities in all groups. In respect of groups of villages of cultivators it varies from 19-20 percent to their total per capita liabilities. The second important source of institutional loans for cultivators is Self Help Groups where the per capita liabilities for cultivators in all groups are around 18 percent to their total per capita liabilities. It is the maximum for group A cultivators with around 20 percent to their total per capita liabilities and minimum in group C with about 16 percent indicating that the Self Help Groups in group A villages is better organised than group C. The per capita liabilities of cultivators from Commercial banks are almost 16 percent to the total per capita liabilities in all groups. In respect of group A, B and C cultivators there is no major distinction of per capita liabilities originated from commercial banks which is around 16 percent. The per capita liabilities for cultivators originated from Co-operative Societies is only 8 percent to the total per capita liabilities in all groups which is lowest among all the institutional sources as the Co-operative Societies are not functioning well in our study villages. In respect of groups, it varies from 7-8 percent for group A, B and C cultivators.

On the other hand, the sources of institutional credit for labourers are very limited. In the absence of landholdings they are not allowed to take loan from Grameen Banks and Commercial Banks. The two important sources of institutional credit for labourers are SHGs and Co-operative Societies. The per capita liabilities

originated from Self-Help Groups are almost 15 percent to their total per capita liabilities for labourers in all groups. In respect of groups of villages for labourers the per capita liabilities from SHGs varies from 14-16 percent to their total per capita liabilities. On the other hand, the per capita liabilities for labourers originated from Co-operative Societies are only 7 percent to their total per capita liabilities in all groups as the Co-operative Societies offer loans only for productive purposes. In respect of group A, B and C labourers it varies from 7-8 percent indicating no major distinction of per capita liabilities originated from Co-operative societies as financial assets and physical assets among them was almost the same.

Among the non-institutional sources, the village money lender or Mahajan is contributing maximum to the per capita liabilities of labourers than cultivators. It is around 24 percent for labourers in all groups as against only 14 percent for cultivators as the irregular earnings of labourers from casual jobs compel them to depend more on money lenders to tide over their financial emergencies. Moreover, there are also possibilities of loans inherited from their husband or father-in-law. In respect of groups, the per capita liabilities originated from money lender ranges between 23-24 percent to the total per capita liabilities for group A, B and C labourers as against 13-14 percent for cultivators as the cultivators can earn regular income from farm activities due to their land ownership. The per capita loan taken by the labourers from employer cultivator is around 9 percent in all groups. In respect of groups, almost the same percent of per capita liabilities have been observed for group A, B and C labourers as such loans are easily available by pledging their own labour. The per capita loan taken from shopkeepers and commission agents is higher for labourers than cultivators. It is around 22 percent to their total per capita liabilities for labourers in all groups as against approximate to 9 percent for cultivators. It indicates acute poverty among labourers as the labourers compel to take higher loans from this source before the maturity of cash crops like coconut and fruit orchards. In respect of groups, the per capita liabilities originated from shopkeepers and commission agents varies from about 23-24 percent to their total per capita liabilities for group A, B and C labourers as against around 8-9 percent for cultivators. The per capita liabilities originated from relatives are also higher for labourers than cultivators. It is around 18 percent to their total per capita liabilities for labourers in all groups as against around 12 percent for cultivators. The per capita liabilities originated from relatives ranges between 17-18 percent to their total per capita liabilities for group A, B and C

labourers in comparison to 11-13 percent for the groups of villages of cultivators. The per capita loan taken from miscellaneous sources like friends and neighbours is also higher for labourers than cultivators. It is around 4 percent to their total per capita liabilities for labourers in all groups as against 3 percent for cultivators. The per capita liabilities originated from miscellaneous sources varies from about 4-5 percent to their total per capita liabilities for group A, B and C labourers as against 2-3 percent for cultivators.

6.05. Purpose wise liabilities:

The female cultivators as well as agricultural labourers are having outstanding loans on their names and they are making the use of their loan for the different purposes like production, consumption, house construction, marriages, social ceremonies, health care and repayment of old debt. Table 6.05 shows the distribution of loan on the basis of the purpose of loan.

Table 6.05
Distribution of liabilities on the basis of purpose (in Rs.)

Purpose of Loan	Cultivators				Labourers			
	A	B	C	Average	A	B	C	Average
A. Outstanding Loans	61280.00 (40.78)	58931.00 (42.05)	59380.00 (43.13)	59864.00 (41.95)	45395.00 (45.36)	40603.00 (45.36)	39630.00 (45.8)	41876.00 (45.24)
B. Current Loans								
i) Production	54803.00 (36.47)	50298.00 (35.89)	47884.00 (34.78)	50995.00 (35.73)	7276.00 (7.27)	6284.00 (6.90)	5122.00 (5.92)	6227.33 (6.72)
ii) House construction or repairing	13164.00 (8.76)	12753.00 (9.10)	13217.00 (9.60)	13044.66 (9.14)	7516.00 (7.51)	6467.00 (7.10)	5625.00 (6.50)	6536.00 (7.06)
iii) Consumption	7664.00 (5.10)	7358.00 (5.25)	8398.00 (6.10)	7806.66 (5.47)	12129.00 (12.12)	12223.00 (13.42)	11941.00 (13.80)	12097.66 (13.06)
iv) Marriage, Social Ceremonies & Festivals	3231.00 (2.15)	2621.00 (1.87)	2754.00 (2.00)	2868.66 (2.01)	11419.00 (11.41)	11110.00 (12.20)	11301.00 (13.06)	11276.66 (12.18)
v) Health care	2569.00 (1.71)	2831.00 (2.02)	3580.00 (2.60)	2993.33 (2.09)	13490.00 (13.48)	12478.00 (13.70)	12036.00 (13.91)	12668.00 (13.68)
vi) Repayment of old debts	7559.00 (5.03)	5353.00 (3.82)	2464.00 (1.79)	5125.33 (3.59)	2853.00 (2.85)	1913.00 (2.10)	874.00 (1.01)	1880.00 (2.03)
Sub-Total (B)	88990.00 (59.22)	81214.00 (57.95)	78297.00 (56.87)	82833.66 (58.04)	54683.00 (54.64)	50475.00 (56.20)	46899.00 (54.20)	50685.66 (54.75)
Total (A+B)	150270.00	140145.00	137677.00	142697.00	100078.00	91078.00	86529.00	92561.66

Source: Field survey

N.B.: Figures in brackets are percentages

The amount of the outstanding loan is the most significant liability for both the cultivators and labourers. It has been observed from Table 6.05 that the percentage of outstanding loan of labourers in all groups is more than cultivators. It is around 45

percent to the total loans for labourers as against almost 42 percent for cultivators. In fact, outstanding loans for labourers are almost 3 percent higher than cultivators as they earn irregular income from casual jobs. In respect of groups of cultivators the percentage of outstanding loan varies from 41-43 percent to their total loans as there were no inter village difference of income.

On the other hand, the percentage of outstanding loans for the groups of villages of labourers is marginally higher than cultivators which have been worked out around 45-46 percent to their total loans, even though there were no intra village differences of income. Both the two phenomena indicate indebtedness among cultivators and labourers in our study villages.

However, current loans for both cultivators and labourers in all groups are higher than outstanding loans. It is around 58 percent to their total liabilities for cultivators in all groups as against 55 percent for labourers. It has been observed from the Table that a major part of current loans is taken by the cultivators for productive purpose, like improvement of land and purchase of agricultural inputs. The percentage of current loans for productive purposes for cultivators is around 36 to their total liabilities in all groups. In respect of groups of villages of cultivators the percentage of productive loans varies from about 35-36 to their total liabilities indicating no major distinction of productive loans taken by group A, B and C cultivators as the value of assets between groups was almost the same. On the other hand, the percentage of productive loans to the total liabilities for labourers is only 7 percent in all groups as they have no land of their loan. Although the labourers are uncertain about their land tenure, yet there may be the possibility of using this small amount of productive loan for purchasing agricultural inputs as the cultivators do not supply any inputs to labourers except land. It indicates the failure of land reform measure undertaken by the government particularly 'The Assam Adhiars Protection and Regulation Act'. In respect of groups of villages of labourers the percentage of productive loans to the total liabilities varies from about 6-7 percent. As the value of dwelling houses of cultivators was more than labourers, therefore the percentage of loans taken for house construction or repair is around 9 percent for cultivators in all groups as against around 7 percent to total liabilities for labourers. In respect of groups, the percentage of loans to the total liabilities for house construction / repair is about 9-10 for cultivators as against 6-7 for labourers.

Both the cultivators and labourers are also availing loans for consumption purposes particularly during lean agricultural period or when crop fails mostly due to irregular monsoons. It has been observed from the Table that the share of loan taken for consumption purpose is more than double for labourers than cultivators in all groups which is around 13 percent to the total liabilities for labourers in comparison to almost 5 percent for cultivators. As consumption loans are basically unproductive, therefore, the possibility of money burden and real burden for such loans may be higher for labourers than cultivators. In respect of groups, the percentage of such unproductive loans varies from about 12-13 for labourers as against 5-6 for cultivators.

Loan taken for the purpose of social ceremonies, marriages and festivals are also unproductive loans. It is again higher for labourers than cultivators. It is around 12 percent to the total liabilities for labourers in all groups as against only 2 percent for cultivators indicating mass poverty among labourers, compelling them to borrow more for unproductive purpose like social ceremonies, marriages and festivals. In respect of groups, there is negligible difference of loan taken for this purpose which is around 13 percent to the total liabilities for group C and 11 percent for group A labourers as against almost 2 percent to the total liabilities for the groups of villages of cultivators.

Health care is another unproductive purpose of loans where the labourers borrow more than cultivators. It is around 14 percent to the total liabilities for labourers in all groups as against only 2 percent for cultivators. In respect of groups, it varies from about 13-14 percent to the total liabilities for labourers as against around 2 percent for cultivators.

Just as poverty forces the labourers to borrow more for unproductive purposes, it is again their poverty which forces them to have little amount for paying off their old debt. The amount used for repaying old debt is only 2 percent to the total liabilities for labourers in all groups as against almost 4 percent for cultivators. In respect of groups it varies from 1-2 percent for labourers in comparison to almost 2-5 percent for cultivators. It indicates that both the sections of the society is using minimum amount for repaying old debt reflecting poverty and indebtedness among them.

6.06. Housing conditions:

The housing conditions of the families are a big factor for determining the standards of living. It affects the health and efficiency of the individuals. The housing conditions of both the sections, i.e. female cultivators and agricultural labourers are very poor. They are having small and unventilated houses. In many cases, they do not have the separate cattle yards. Generally it has been observed that the cultivators and labourers are running their subsidiary occupations from their homes, where they are keeping the milch animals, poultry etc. They are making the use of their rooms for storage of fodder, wheat, straw and other products.

Table 6.06 depicts the area and construction status of the houses occupied by the female cultivators and agricultural labourers in various groups of our study area.

It has been observed from Table 6.06 that the average number of houses of female cultivators is more than labourers as the resource base of cultivators is higher than labourers. It is around 146 for cultivators as against almost 130 for labourers in all groups indicating that both the sections of the society have more than two houses per head of their own. In respect of groups, the number of houses for group A cultivators is maximum with 167 and minimum in group C with 128 as the value of dwelling houses of group A cultivators was more than group C.

Table 6.06

Area and construction status of houses

Groups	No. of houses	Area Sq. feet	Bricked houses	Kacha houses	Mixed houses	Cemented houses	Electrified houses
Cultivators							
A	167	83166	112 (67.06)	10 (6.0)	28 (16.76)	17 (10.18)	122 (73.05)
B	144	65088	88 (61.11)	11 (7.63)	32 (22.22)	10 (9.04)	105 (72.91)
C	128	54784	70 (54.68)	17 (13.28)	33 (25.78)	8 (6.26)	91 (71.09)
Average	146.33	67679.33	90 (61.50)	12.66 (8.65)	31 (21.18)	11.66 (7.96)	106 (72.43)
Labourers							
A	148	67044	86 (57.97)	28 (18.91)	29 (19.59)	5 (3.53)	94 (63.51)
B	131	53841	74 (56.48)	26 (19.84)	28 (21.37)	3 (2.29)	81 (61.83)
C	112	47904	61 (54.46)	25 (22.32)	24 (21.42)	2 (1.78)	67 (59.82)
Average	130.33	56263	73.66 (56.52)	26.33 (20.20)	27 (20.71)	3.33 (2.55)	80.66 (61.88)

Source: Field survey

N.B.: Figures in brackets are percentages to the number of houses

Similar phenomenon has been observed for labourers where the number of houses for group A labourers is highest with 148 and lowest in group C with 112 as the value of dwelling houses for group A labourers was almost 17 percent of the total value of their assets as against only 15 percent for group C.

The average square feet area of houses for cultivators is also more than labourers. It is around 68000 sq. feet for cultivators as against almost 56000 sq. feet for labourers in all groups indicating that the living conditions of cultivators are more spacious than labourers. In respect of groups, the square feet area of houses for both the cultivators and labourers are highest in group A and lowest in group C indicating that the living conditions of group A cultivators and labourers are more spacious than group C.

The number of bricked houses for cultivators is also higher than labourers as they can enjoy better opportunity to earn more farm income due to their land ownership. The percentage of bricked houses to the total number of houses for cultivators is around 61 in all groups as against almost 44 for labourers. In respect of groups, the percentage of bricked houses to the total number of houses for group A cultivators is maximum with around 67 and minimum in group C with around 55 as farm income for group A cultivators was more than group C. In the absence of farm income, the labourers have to depend upon casual work to generate income. Since, income from casual labour for group A labourers was more than group C, therefore the percentage of bricked houses for group A labourers is highest with around 58 to their total number of houses and lowest in group C with about 54.

On the other hand, the percentage of kuchha houses to the total number of houses is around 20 percent for labourers in all groups in comparison to 9 percent for cultivators indicating better housing conditions for cultivators than labourers. In respect of groups, the percentage of kuchha houses to the total number of houses for group C cultivators is maximum with around 13 and minimum in group A with about 6 indicating that the housing condition of group A cultivators is better than group C as the farm income of group A cultivators was higher than group C. Similar phenomenon has been observed for groups of villages of labourers where the percentage of kuchha houses for group C labourers is highest with around 22 and lowest in group A with about 19 as income from casual labour for group A labourers were highest.

The percentage of mixed houses (Pucca and Kuchha) to the total number of houses for cultivators and labourers is almost the same in all groups i.e., around 21 percent to their total number of houses. In respect of groups, the percentage of mixed houses for group C cultivators is highest with around 26 to their total number of houses and lowest in group A with around 17 where the difference is almost 9 percent. Similarly, the percentage of mixed houses for group C labourers is highest with around 21 and lowest in group A with about 19 where the difference is almost 2 percent. It indicates that there is no difference of the distribution of mixed houses within the groups of villages under study. But there are differences for the distribution of mixed houses between the two groups.

Similarly, the percentage of cemented houses to the total number of houses is also higher for cultivators than labourers. Such percentages are almost 8 for cultivators in all groups as against only about 2 for labourers indicating better housing condition of cultivators than labourers. In respect of groups, the percentage of cemented houses for group A cultivators are maximum with around 10 percent and minimum in group C with almost 6 percent to their total number of houses where the difference is about 4 percent. Similarly, the percentage of cemented houses for group A labourers is maximum with around 3 percent to their total number of houses and minimum in group C with about 2 percent. It indicates that the housing condition of group A cultivators and labourers is better than group C.

Electricity connection is an indicator of standard of living of a family. But the percentage of electrified houses for labourers is lower than cultivators. It is around 62 percent to the total number of houses for labourers in all groups as against almost 72 percent for cultivators. In respect of groups, the percentage of electrified houses to the total number of houses varies from 72-73 percent for cultivators as against 60-63 percent for labourers indicating better standard of living for groups of villages of cultivators than labourers.

6.06.1. Cattle yard status:

As the female cultivators as well as agricultural labourers are having diary as their main subsidiary occupation, therefore they are keeping buffaloes, cows, goats etc to substantiate their income. Some of the cultivators those are having the cattle have either separate cattle yards or joint cattle yards at their places of living. The female cultivators and particularly the agricultural labourers are having very small space for

their living and when they attach the cattle yard in their own houses, their living becomes more difficult. On the one hand they are having their problem of accommodation and on the other they are compelled to keep the cattle on their houses just to substantiate their income. The cattle yard status of female cultivators and agricultural labourers in the groups of villages is represented in Table 6.07

Table 6.07
Cattle yard status of the groups of study villages

Groups	Cultivators					Labourers				
	Number of houses	Total cattle yards	Joint cattle yards	Separate cattle yards	No cattle yards	Number of houses	Total cattle yards	Joint cattle yards	Separate cattle yards	No cattle yards
A	167	78	18 (23.07)	45 (57.69)	15 (19.23)	148	69	18 (26.08)	33 (47.82)	18 (26.08)
B	144	67	17 (25.37)	36 (53.73)	14 (20.89)	131	70	19 (27.14)	32 (45.71)	19 (27.14)
C	128	65	19 (29.23)	32 (49.23)	14 (21.53)	112	64	20 (31.25)	20 (31.25)	24 (37.5)
Average	146.33	70	18 (25.71)	37.66 (53.80)	14.33 (20.47)	130.33	67.66	19 (28.08)	28.33 (41.87)	20.33 (30.05)

Source: Field survey

N.B.: Figures in brackets are percentages to the number of houses

It has been observed from Table 6.07 that the average number of cattle yards for cultivators in all groups is more than labourers as the resource base of cultivators is higher than labourers. The average number of cattle yards for cultivators is 70 in all groups as against about 67 of labourers. Out of the average cattle yards for cultivators, around 26 percent is joint cattle yards in all groups as against almost 28 percent for labourers. It shows that the percentage of joint cattle yards for labourers is more than cultivators in all groups indicating that the labourers can have very small space for living leading to the problem of accommodation and their living more difficult. In respect of groups, the percentage of joint cattle yards for cultivators is the maximum in group C with about 29 percent and minimum in group A with around 23 to their average cattle yards. Similarly the percentage of joint cattle yards to the average cattle yards for group C labourers is the maximum with around 31 and minimum in group A with about 26. It indicates that the standard of living of group C cultivators and labourers are lower than group A, although there was no inter village difference of income within the groups of villages of cultivators and labourers.

But the percentage of separate cattle yards of cultivators in all groups is more than labourers as the value of financial assets of cultivators was more than labourers. It is around 54 percent to the average cattle yards for cultivators in all groups as

against 42 percent for labourers. In respect of groups, the percentage of separate cattle yards for group A cultivators is highest with around 58 and lowest in group C with about 49 to their average cattle yards as farm income for group A cultivators was almost 2 percent more than group C. Similarly, the percentage of separate cattle yards to the average cattle yards for labourers is also maximum for group A labourers with around 48 and minimum in group C with about 31 indicating lower standard of living of group C labourers than group A.

Further, the percentage of households to the average cattle yards without cattle yards for labourers in all groups is also higher than cultivators. It is around 30 percent to the average cattle yards for labourers as against almost 20 percent for cultivators in all groups as the cultivators enjoy better opportunities to derive regular income from farm activities in comparison to irregular income of labourers from casual jobs. In respect of groups, the percentage of households without cattle yards for group C cultivators is maximum with around 21 and minimum in group A with about 19 indicating better living standard for group A cultivators than group C. Similarly, the percentage of households without cattle yards for group C labourers is also higher than group A. It is around 37 percent to the average cattle yards for group C labourers which are highest and lowest in group A with only 26 percent indicating that the standard of living of group A labourers is better than group C.

6.06.2. Ventilation status of houses:

The proper ventilation in the houses is most desirable. It is very much required for a healthy family. The female cultivators as well as agricultural labourers both are having small houses, most of the time they are not properly planned. The ventilation facility is not proper in such houses. Table 6.08 depicts the ventilation status of these houses.

Table 6.08:
Ventilation status of houses

Groups	Cultivators			Labourers		
	No. of houses	Ventilated houses	Unventilated houses	No. of houses	Ventilated houses	Unventilated houses
A	167	87 (52.09)	80 (47.90)	148	70 (47.29)	78 (52.70)
B	144	74 (51.38)	70 (48.61)	131	61 (46.56)	70 (53.43)
C	128	63 (49.21)	65 (50.78)	112	48 (42.85)	64 (57.14)
Average	146.33	74.66 (51.02)	71.66 (48.97)	130.30	59.66 (45.79)	70.66 (54.23)

Source: Field survey N.B.: Figures in brackets are percentages to the number of houses

It has been observed from Table 6.08 that the percentage of ventilated houses for cultivators in all groups is higher than labourers. It is around 51 percent to the average number of houses for cultivators in all groups as against about 46 percent for labourers indicating that the housing conditions of labourers are comparatively unhealthier than cultivators. In respect of groups, the percentage of ventilated houses to the average number of houses is maximum for group A cultivators with around 52 and minimum in group C with about 49 as farm income for group A cultivators was almost 81 percent to their total income in comparison to around 78 percent of group C. Similar phenomenon has been observed for labourers where the percentage of ventilated houses to the average number of houses for group A labourers is highest with around 47 and lowest in group C with about 43 as income from casual work for group A labourers was almost 3 percent more than group C. On the other hand, the percentage of unventilated houses for labourers in all groups is more than cultivators. The percentage of unventilated houses to the average number of houses for labourers in all groups is around 54 as against about 49 for cultivators indicating lower standard of living of labourers than cultivators. In respect of groups, the percentage of unventilated houses to the average number of houses is highest for group C cultivators with around 51 and lowest in group A with about 48. On the other hand, the percentage of unventilated houses to the average number of houses for group C labourers is the maximum with around 57 and minimum in group A with about 53. It indicates that the living condition for group A cultivators and labourers is better than group C.

6.07 Access to safe drinking water:

The extent to which life of common man is becoming better in terms of availability of safe drinking water is an essential index of quality of modern life. It is common knowledge that safe drinking water is a direct guard against various diseases.

Table 6.09 depicts source wise collection of drinking water by female cultivators and agricultural labourers.

It has been observed from Table 6.09 that about 85 percent of households for cultivators in all groups are accessing drinking water from taps, tube wells and wells as against around 81 percent for labourers. In fact, the percentage of household for cultivators accessing safe drinking water from various sources like taps, tube wells and wells is more than labourers in all groups as the income of the cultivators is

regular in comparison to irregular income of labourers. In other words, about 15 percent of household for cultivators and around 19 percent of labourers is depriving from safe drinking water indicating possibility of water borne diseases for both the sections of the society.

Table 6.09

Source wise collection of drinking water

Group	Cultivators					Labourers				
	No. of household	No. of household having access to safe drinking water				No. of household	No. of household having access to safe drinking water			
		Tap	Tube well	Well	Total		Tap	Tube well	Well	Total
A	78	2 (2.56)	56 (71.79)	9 (11.53)	67 (85.89)	69	0	43 (62.31)	14 (20.28)	57 (82.60)
B	67	1 (1.49)	48 (71.64)	8 (11.94)	57 (85.07)	70	0	47 (67.14)	9 (12.85)	56 (80.0)
C	65	0	45 (69.23)	9 (13.84)	54 (83.07)	64	0	44 (68.75)	7 (10.93)	51 (79.68)
Average	70	1 (1.42)	49.66 (70.94)	8.66 (12.37)	59.33 (84.75)	67.66	0	44.66 (66.00)	10 (14.77)	54.66 (80.78)

Source: Field survey

N.B.: Figures in brackets are percentages to the number of houses

The percentage of households accessing drinking water from tube wells is highest in all groups for both cultivators and labourers which are around 71 for cultivators as against 66 for labourers as it has been observed that the ground water is accessible easily in our study villages, possibly may be due to heavy rainfall during rainy season. In other words, the percentage of households for cultivators accessing drinking water from tube wells is more than labourers by almost 5 percent in all groups. The possible reason may be that the cultivators are getting more benefit from government sponsored scheme for supply of free tube wells. But the percentage of households for cultivators and labourers accessing drinking water from wells is around 12-15 in all groups. However, the percentage of household accessing drinking water from tap is negligible for cultivators and labourers which is around 1 percent for cultivators in all groups as against zero percent for labourers as connection of tap is costlier. Moreover, there is no government scheme for supply of drinking water through tap in our study villages.

In respect of groups, the percentage of household accessing safe drinking water from tap, tube wells and wells varies from around 83-86 percent for group A, B and C cultivators. It indicates that around 14-17 percent of household for groups of villages of cultivators are accessing drinking water from unsafe sources like ponds,

rivers etc which may lead to water borne diseases. The percentage of household accessing drinking water from tube wells varies from about 69-72 for group A, B and C cultivators as it has been observed during field survey that the ground water level in our study villages is not so deep and therefore cost of boring for tube wells is comparatively lower than wells. Further, the percentage of household accessing drinking water from wells varies from 12-14 for cultivators. But the percentage of households having tap is around 2 percent for group A cultivators as against zero percent for group C as the farm income for group A cultivators was more than group C. This shows that there is no major distinction among the groups of villages of cultivators for accessing safe drinking water from various sources as their income from various sources was almost the same.

On the other hand, the percentage of household accessing drinking water from safe sources like tube wells, wells and tap varies from about 80-83 percent for groups of villages of labourers indicating that almost 17-20 percent of household for groups of villages of labourers is accessing drinking water from unsafe sources. Although the percentage of household accessing drinking water from tube wells is maximum for group C labourers with around 69 and minimum in group A with about 62, yet almost 20 percent of group A labourers is accessing drinking water from wells as against only 11 percent of group C. However, the percentage of household for labourers accessing drinking water from tap is zero. This shows that there is no major distinction among the groups of villages of labourers for accessing safe drinking water from various sources as there was no inter village difference of income.

6.08 Access to toilet facility:

Toilet facility is a cornerstone of sanitation and human health. Improved sanitation with proper toilet contributes enormously to human health and well-being, especially for women. Using proper toilets may prevent the transfer of bacteria, viruses and parasites found in human excreta which otherwise contaminate water resources, soil and food. This contamination is a major cause of diarrhea, the second biggest killer of children in developing countries and leads to other major diseases such as cholera, schistosomiasis and trachoma. Table 6.10 depicts percentage of household having toilet facilities in our study villages.

It has been observed from Table 6.10 that the percentage of household having toilet facilities is around 65 for cultivators in all groups as against only about

49 for labourers. The possible reason for having better toilet facilities for cultivators than labourers may be due to their higher resource base. However, almost one-third of cultivators (around 35 percent) and half of the labourers (almost 50 percent) are not having toilet facilities in all groups. It indicates higher incidence of risk for several diseases for both cultivators and labourers and loss of physical environment as toilet facilities can ensure safety, dignity and self-esteem.

Table: 6.10
Household having toilet facilities

Group	Cultivators						Labourers					
	No. of household	Household having toilet facilities				Households not having toilet facilities	No. of household	Household having toilet facilities				Households not having toilet facilities
		Pucca toilet with separate tank	Semi-pucca with well tank	Kacha toilet or pit toilet	Total			Pucca toilet with separate tank	Semi-pucca with well tank	Kacha toilet or pit toilet	Total	
A	78	5 (6.41)	9 (11.53)	38 (48.71)	52 (66.66)	26 (33.33)	69	2 (2.89)	7 (10.14)	28 (40.57)	37 (53.62)	32 (46.37)
B	67	4 (5.97)	8 (11.94)	32 (47.76)	44 (65.71)	23 (34.32)	70	2 (2.85)	6 (8.57)	26 (37.14)	34 (48.57)	36 (51.42)
C	65	2 (3.07)	8 (12.30)	31 (47.69)	41 (63.07)	24 (36.92)	64	1 (1.56)	6 (9.37)	22 (34.37)	29 (45.31)	35 (54.68)
Average	70	3.66 (5.23)	8.33 (11.90)	33.66 (48.09)	45.65 (65.23)	24.33 (34.76)	67.66	1.66 (2.46)	6.33 (9.36)	25.33 (37.44)	33.33 (49.26)	34.33 (50.74)

Source: Field survey

N.B.: Figures in brackets are percentages to the number of household

While looking at the various types of toilet facilities, it has been found that majority of toilets for cultivators and labourers in all groups are kuchha which is a hole dug in the ground with a small bamboo structure built around it. The percentage of household for such kuchha toilets is higher for cultivators than labourers. It is around 48 percent for cultivators in all groups as against almost 37 percent for labourers as most of the labourers use open area preferably agricultural field for excretion. As the cultivators earn regular farm income, therefore the households having semi pucca and pucca toilets for cultivators in all groups is also more than labourers. The percentage of households having semi-pucca toilets with well tank is around 12 in all groups for cultivators as against almost 9 for labourers. On the other hand, the percentage of households having pucca toilets with septic tank is only about 5 for cultivators in all groups in comparison to almost 2 for labourers as the income earned by labourers from casual jobs are irregular.

In respect of groups of villages for cultivators, the households having toilet facilities varies from about 63-67 percent indicating that almost 33-37 percent of

household for group A, B and C cultivators fails to access any toilet facilities. It indicates subsistence level of living and poverty among the groups of villages for cultivators. It also indicates higher incidence of diarrhea and other diseases for groups of villages of cultivators. Moreover, the percentage of households with kuchha toilet is around 48-49 for the groups of villages of cultivators as against almost 11-12 percent of households with semi-pucca toilets. Further, the percentage of households having pucca toilet with septic tank varies from 3-6 for groups of villages of cultivators. It indicates that a significant percent of households for cultivators are not benefited by the 'Anamoy Achari' sponsored by the government of Assam for free supply of toilets.

For the groups of villages of labourers, the percentage of households having toilet facilities is the maximum for group A with around 54 and minimum in group C with about 45. In other words, the percentage of households for group C labourers without toilet facilities is the maximum with around 55 and minimum in group A with about 46 indicating possibility of higher risk of diarrhea and other diseases for group C labourers than group A. However, the percentage of group A labourers with kuchha toilet is maximum with around 41 and minimum in group C with about 34 as against 8-10 percent of households with semi-pucca toilets for the groups of villages of labourers. Further, the percentage of households having pucca toilet for groups of villages of labourers is negligible which is around 2-3 percent. It indicates poor levels of living for the groups of villages of labourers like the cultivators, although the percentage of households without toilet facilities for the groups of villages of cultivators is lower than labourers.

6.09 Access to radio, television and mobile phone:

Radio, television and mobile phone is the Information and Communication Technology (ICT) which can be a non-income influence on economic well-being of female cultivators and agricultural labourers as such technologies can be utilized for providing accurate, timely, relevant information and services to them, thereby facilitating an environment for more remunerative agriculture. Table 6.11 depicts the percentages of households for cultivators and labourers with radio, television and mobile phones in our groups of study villages.

Table 6.11
Households having radio, television and mobile phones

Groups	Cultivators				Cultivators			
	No. of households	Radio	Television	Mobile Phones	No. of households	Radio	Television	Mobile Phones
A	78	18 (23.07)	9 (11.53)	11 (14.10)	69	12 (7.39)	7 (10.14)	9 (13.04)
B	67	12 (16.92)	7 (10.44)	9 (13.43)	70	11 (15.71)	7 (10.00)	8 (11.42)
C	65	11 (16.92)	6 (9.23)	9 (13.84)	64	9 (14.06)	5 (7.81)	6 (9.37)
Average	70	13.66 (19.51)	7.33 (10.47)	9.66 (13.80)	67.66	10.66 (15.76)	6.33 (9.36)	7.66 (11.33)

Source: Field survey

N.B.: Figures in brackets are percentages to the number of households

It has been observed from Table 6.11 that the percentage of households with radio, television and mobile phones for cultivators in all groups is higher than labourers as the cultivators can earn regular income due to their land ownership. Almost 11-19 percent of households for cultivators in all groups have radios, televisions and mobile phones as against about 8-16 percent of households for labourers. It indicates that a significant percent of households for cultivators and labourers have fails to access modern information and communicational devices and therefore they are ignorant about latest information relating to production, marketing and even family planning, although labourers are comparatively more disadvantaged than cultivators in accessing such information. However, the percentage of households having radio is more than other gadgets for both the sections as cost of radio is comparatively less than other gadgets and it can also be run without electricity. The percentage of households having television and mobile users is almost negligible for cultivators and labourers in all groups. The possible reasons may be the problem of poverty for both the sections of the society and irregular supply of electricity, although the percentage of households having electricity connection is more than 60 for cultivators and labourers.

In respect of groups, the percentage of households having radio varies from about 20-23 for group A, B and C cultivators as against 14-17 percent for labourers as the values of financial assets for groups of villages of cultivators was more than labourers. On the other hand, the percentage of households having televisions and mobile phones varies from about 9-14 percent and 8-15 percent for groups of villages of cultivators and labourers respectively. It indicates that both the sections of the rural society fails to access latest information about who is buying their farm products, how

much is being offered, who are potential buyers, what are the prevailing wage rate in nearby areas, what are the possible costs and what will be the weather conditions which are very important relating to decision making of any kind of investment in agriculture and allied activities.

6.10 Health problems and health care services:

6.10.1. Perceived health problems:

The data on perceived health problems has been collected for a period of two weeks, prior to the date of interview. The morbidity load among the female cultivators and agricultural labourers is quite high as represented in Table 6.12.

It has been observed from Table 6.12 that the percentage of cultivators without having any perceived health problems is higher than labourers in all groups. It is around 17 percent for cultivators in all groups as against only about 10 percent for labourers indicating higher incidence of illness among the labourers compared to cultivators.

In respect of groups, the percentage of cultivators without having any perceived health problem varies from around 15-17 as against 6-13 for labourers. The percentages of cultivators suffering from back pain, joint pain and asthma is around 42, 53 and 11 respectively in all groups as against almost 44, 55 and 10 for labourers. It indicates that there is no major distinction of work related health hazards like chronic skeletal muscular and postural health problems among cultivators and labourers. In respect of groups, the percentages of cultivators having back pain, joint pain and asthma varies from about 41-45, 52-53 and 10-13 respectively as against 42-47, 55-56 and 8-19 for labourers in group A, B and C indicating no major distinction of work related health hazards among the groups of villages of cultivators and labourers as labour time use for both the sections of the society was almost the same. However, the incidence of water borne diseases like diarrhoea and jaundice is around 29 and 24 percent respectively for cultivators in all groups as against almost 35 and 26 percent for labourers as around 20 percent of household for labourers accessed drinking water from unsafe sources in comparison to almost 15 percent of household for cultivators.

Table 6.12
Illness distribution among cultivators and labourers

Sl. No.	Illness	Cultivators				Labourers			
		A	B	C	Average	A	B	C	Average
1	Back Pain	32 (41.02)	28 (41.79)	29 (44.61)	29.66 (42.38)	29 (42.02)	31 (44.28)	30 (46.87)	30 (44.33)
2	Joint Pain	41 (52.56)	35 (52.23)	36 (53.73)	37.33 (53.33)	38 (55.07)	37 (52.85)	36 (56.25)	37 (54.68)
3	Hand & Leg Pain	5 (6.41)	4 (5.97)	5 (7.69)	4.66 (6.66)	6 (8.69)	7 (10.0)	8 (12.50)	7 (10.34)
4	Rheumatism	3 (3.84)	3 (4.47)	2 (3.07)	2.66 (3.80)	3 (4.34)	4 (5.71)	5 (7.81)	4 (5.91)
5	Asthma	8 (10.25)	7 (10.44)	9 (13.84)	8 (11.42)	7 (10.14)	6 (8.57)	8 (12.50)	7 (10.34)
6	Allergy	3 (3.84)	2 (2.98)	3 (4.61)	2.66 (3.80)	2 (2.89)	3 (4.28)	3 (4.68)	2.66 (3.94)
7	Fever	9 (11.53)	10 (14.92)	11 (16.92)	10 (14.28)	8 (11.59)	7 (10.0)	6 (9.37)	7 (10.34)
8	Headache	10 (12.82)	8 (11.94)	6 (9.23)	8 (11.42)	9 (13.04)	8 (11.42)	9 (14.06)	8.66 (12.80)
9	Cough	2 (2.56)	3 (4.47)	4 (6.15)	3 (4.28)	5 (7.24)	6 (8.57)	7 (10.93)	6 (8.86)
10	Abdominal Pain	6 (7.69)	4 (5.97)	6 (9.23)	5.33 (7.61)	8 (11.59)	9 (12.85)	10 (15.62)	9 (13.30)
11	General malaise	18 (23.07)	17 (25.37)	17 (26.15)	17.33 (24.76)	18 (26.08)	19 (27.14)	20 (31.25)	19 (28.08)
12	Chest Pain	1 (1.28)	2 (2.98)	3 (4.61)	6 (8.57)	4 (5.79)	5 (7.14)	6 (9.37)	5 (7.38)
13	Typhoid	1 (1.28)	1 (1.49)	—	2 (2.85)	2 (2.89)	1 (1.42)	3 (4.68)	2 (2.95)
14	Diarrhea	19 (24.35)	20 (29.85)	22 (33.84)	20.33 (29.04)	23 (33.33)	24 (34.28)	25 (39.06)	24 (35.47)
15	Jaundice	17 (21.79)	16 (23.88)	18 (27.69)	17 (24.28)	16 (23.18)	17 (24.28)	19 (29.68)	17.33 (25.61)
16	Diabetes	2 (2.56)	3 (4.47)	1 (1.53)	2 (2.56)	4 (5.79)	3 (4.28)	2 (3.12)	3 (4.43)
17	High Blood Pressure	3 (3.84)	4 (5.97)	2 (3.07)	3 (4.28)	4 (5.79)	5 (7.14)	3 (4.68)	4 (5.91)
18	Trachoma	25 (32.05)	23 (34.32)	26 (40.0)	24.66 (35.23)	24 (34.78)	25 (35.71)	27 (42.18)	25.33 (37.44)
19	Leucorrhoea	7 (8.97)	8 (11.94)	9 (13.84)	8 (11.42)	6 (8.69)	7 (10.0)	8 (12.50)	7 (10.34)
20	Yellow vaginal discharge	3 (3.84)	2 (2.98)	3 (4.61)	2.66 (3.80)	5 (7.24)	6 (8.57)	7 (10.93)	6 (8.86)
21	Lump Breast	1 (1.28)	1 (1.49)	—	0.66 (0.95)	1 (1.44)	2 (2.85)	1 (1.56)	1.33 (1.97)
22	Irregular bleeding	4 (5.18)	6 (9.62)	5 (8.95)	5 (7.14)	6 (8.69)	8 (11.42)	9 (14.06)	7.66 (11.33)
23	Nil	14 (17.94)	12 (17.91)	10 (15.38)	12 (17.14)	9 (13.04)	7 (10.0)	4 (6.25)	6.66 (9.85)
	Number of cultivators/labourers	78	67	65	70	69	70	64	67.66

Source: Field survey

N.B.: Figures in brackets are percentages to the numbers of cultivators and labourers

It has been observed from the Table that the incidence of water borne diseases like diarrhoea and jaundice is higher for group C cultivators and labourers. The incidence of diarrhoea and jaundice is around 35 and 28 percent respectively for group C cultivators in comparison to about 39 and 30 percent for labourers of the

same group. In contrast, the incidence of diarrhoea and jaundice is around 24 and 22 percent respectively for group A cultivators and almost 33 and 23 percent for labourers of the same group. The possible reason for such higher incidence of diarrhoea and jaundice for group C cultivators and labourers compared to group A may be due to lack of proper drinking water facilities. The incidence of seasonal ailments are comparatively low probably due to the fact that the labour time use of cultivators and labourers in harvesting of winter rice is higher when the scorching sun is low. The three important seasonal ailments are fever, headache and cough where the incidence of illness of such diseases for labourers is around 10, 13 and 9 percent respectively as against almost 12, 13 and 7 percent for cultivators in all groups. In respect of groups, the incidence of fever, cough and headache varies from about 9-12 percent, 7-11 percent and 13-14 percent respectively for group A, B and C labourers as against almost 12-17 percent, 3-6 percent and 9-13 percent for cultivators. It indicates that the incidence of fever and cough among the groups of cultivators and labourers are almost the same. But the incidence of headache among the groups of villages of labourers is almost 2-3 times more than cultivators. The possible reason may be the higher labour time use by the groups of villages of labourers in post harvest operations like winnowing and grinding.

Moreover, the incidence of general malaise and abdominal pain is almost the same for cultivators and labourers in all groups. The percentage of general malaise and abdominal pain for cultivators and labourers in all groups is around 26-28 and 12-13 respectively. It is an indicative of under-nourishment and poor health for both cultivators and labourers as such diseases mainly arise from acidity problems caused by improper and irregular food habits. In respect of groups, the incidence of general malaise and abdominal pain varies from about 23-26 percent and 7-9 percent respectively for cultivators as against almost 26-31 percent and 12-16 percent for labourers in group A, B and C. It indicates that acidity problem caused by improper and irregular food habits for groups of villages of cultivators and labourers is almost the same reflecting their under-nourishment and poor health.

The incidence of trachoma created mainly by poor sanitation is marginally higher for labourers than cultivators. It is around 38 percent for labourers in all groups as against about 35 percent for cultivators as the percentage of households without toilet facilities was higher for labourers than cultivators. In respect of groups, the incidence of trachoma is highest for group C labourers with about 42 percent and

lowest in group A with around 35 percent. Similarly, it is the maximum for group C cultivators with about 40 percent and minimum in group A with only 32 percent. Higher incidence of trachoma for group C cultivators and labourers is the indicative of improper sanitary facilities as the percentage of households without toilet facilities for group C cultivators and labourers was higher than group A. The incidence of high blood pressure and diabetes is almost negligible for both the sections of the society as they are undernourished and poor and unable to enjoy luxurious life which is one of the important causes of such diseases.

6.10.2. Reproductive health:

Compared to the load of general ailments, the proportion of reproductive health problem like leucorrhoea and irregular bleeding among cultivators and labourers are very small. The incidence of leucorrhoea is around 10-11 percent for cultivators and labourers in all groups. On the other hand, the incidence of irregular bleeding for cultivators in all groups is only about 7 percent in comparison to almost 11 percent for labourers. Although the incidence of leucorrhoea for cultivators and labourers is almost the same in all groups, the incidence of irregular bleeding for labourers is higher than cultivators. It indicates ignorance and lack of awareness among labourers for proper medical attention during bleeding due to their poverty and illiteracy. In respect of groups, the incidence of leucorrhoea is maximum for group C cultivators with around 14 percent and minimum in group A with about 9 percent. Similarly, the incidence of irregular bleeding for group C cultivators is highest with around 9 percent and lowest in group A with about 5 percent. Same trend has been observed for group C labourers where the incidence of leucorrhoea is maximum with about 12 percent and minimum in group A with around 9 percent. The incidence of irregular bleeding for group C labourers is also highest with about 14 percent and lowest in group A with almost 9 percent. It indicates higher incidence of poverty and illiteracy among group C cultivators and labourers compelling them to follow traditional method of delivery at home without proper medical attention. Thus the general trends in the morbidity pattern reveal that their ailment is related more with poverty and occupation rather than with life style. On the other hand, the proportion of reproductive health problems such as abortion, still birth and premature delivery is relatively high for both cultivators and labourers as shown in Table 6.13

Table 6.13
Reproductive health problems among ever married cultivators and labourers

Sl. No.	Illness	Cultivators				Labourers			
		A	B	C	Average	A	B	C	Average
A	Abortion								
1	Spontaneous	6 (8.57)	5 (8.47)	6 (10.52)	5.66 (9.13)	6 (10.34)	8 (13.33)	9 (16.07)	7.66 (13.21)
2	Induced	4 (5.71)	3 (5.08)	5 (8.77)	4 (6.45)	3 (5.17)	6 (10.0)	6 (10.71)	5 (8.62)
B	Other Problems								
1	Still Birth	9 (12.85)	8 (13.55)	9 (15.78)	8.66 (12.06)	7 (12.06)	8 (13.3)	8 (14.28)	7 (13.97)
2	Premature delivery	5 (7.14)	7 (11.86)	9 (15.78)	7 (11.29)	7 (12.06)	9 (15.0)	11 (19.64)	9 (15.51)
Total (A+B) (Including abortion)		24 (34.28)	23 (38.98)	29 (50.87)	25.33 (40.86)	23 (39.65)	31 (51.66)	32 (57.16)	28.66 (49.42)
Total No. of ever married		70	59	57	62	58	60	56	58

Source: Field survey

N.B.: Figures in brackets are percentages

It has been observed from Table 6.13 that the spontaneous delivery of agricultural labourers in all groups is higher than cultivators. It is around 13 percent to the average ever-married labourers as against almost 9 percent for cultivator indicating higher incidence of poverty, illiteracy and undernourishment among labourers in comparison to cultivators, although there are some other reasons of spontaneous abortions like lack of proper medical attention during fever and bleeding, death of the foetus, abdominal pain, drug-induced (drugs for mental disorder problems) and fever. In respect of groups, the percentage of spontaneous abortion is the maximum for group C cultivators with around 11 to the average ever-married cultivators and minimum in group B with about 8. Similarly the percentage of spontaneous abortion to the average ever-married labourers is the maximum in group C with around 16 and minimum in group A with about 10. It indicates higher incidence of poverty, under-nourishment and ignorance among group C cultivators and labourers, although there were no intra village difference of labour time use and income.

It has also been observed that the percentage of induced abortion for labourers and cultivators in all groups is almost the same. It is around 9 percent for labourers to the average ever-married labourers and almost 6 percent for cultivators as there are tendencies to terminate unwanted pregnancies and apprehension regarding birth of another girl child (during the subsequent pregnancy) for cultivators and labourers

possibly due to lack of proper knowledge about family planning devices, illiteracy and gross neglect towards girl child. In respect of groups, the percentage of induced abortion is the maximum for group C cultivators with around 9 and minimum in group A with about 6. Similar trend has been observed for groups of villages of labourers where the percentage of induced abortion to the average ever-married labourers is the maximum in group C with about 11 and minimum in group A with around 5 indicating higher level of apprehension regarding birth of another girl child and dependence on abortion for controlling fertility among group C cultivators and labourers in comparison to group A, although there are some other reasons of induced abortion like economic hardships, lack of health, lack of spacing between pregnancies and termination of unwanted pregnancies.

Similarly, the percentage of premature delivery to the average ever-married labourers is also higher than cultivators in all groups. It is around 16 percent for labourers in all groups as against 11 percent for cultivators indicating the same i.e. higher incidence of poverty and under-nourishment among labourers compared to cultivators. In respect of groups, the percentage of premature delivery is the maximum for group C cultivators with around 16 and minimum in group A with only 7. Similarly, the percentage of premature delivery for group C labourers is the maximum with around 20 and minimum in group A with about 12. It indicates that the percentage of premature delivery caused mainly by under-nourishment and poverty among the groups of villages of labourers is higher than cultivators, although there were no intra village difference of income among the groups of villages of cultivators and labourers.

However, the percentage of still birth to the average ever-married cultivators and labourers is almost the same for cultivators and labourers in all groups i.e. is around 12-14 indicating almost the same burden of still born babies for both the sections. The possible reason may be the lower literacy rate for both the sections, although literacy rate among cultivators may be higher than labourers due to their larger resource base. In respect of groups, it varies from about 13-16 percent for groups of villages of cultivators as against almost 12-14 percent for cultivators indicating no major distinction of the percentage of still birth among the groups of villages of cultivators and labourers.

6.10.3. Utilisation of medical care:

The utilisation pattern of different types of medical care institutions in the public and the private sectors reveals that despite differences in the quality in medical care, majority of cultivators and labourers depend on the public sector as shown in Table 6.14

Table 6.14
Distribution of different institutions in which cultivators and labourers sought medical help during the period of two weeks prior to the date of interview

Institution	Cultivators				Labourers			
	A	B	C	Average	A	B	C	Average
A. Public Sector								
a) Allopathy	28 (35.89)	25 (37.31)	26 (40.0)	26.33 (37.61)	25 (36.23)	26 (37.14)	27 (42.18)	26 (38.42)
b) Ayurveda	3 (3.84)	4 (5.97)	5 (7.69)	4 (5.71)	2 (2.89)	4 (5.71)	6 (9.37)	4 (5.91)
c) Homeopathy	5 (6.41)	6 (8.95)	7 (10.76)	6 (8.57)	3 (4.34)	2 (2.85)	5 (7.81)	3.33 (4.92)
Sub Total (A)	36 (46.15)	35 (52.23)	38 (58.46)	36.33 (51.9)	30 (43.47)	32 (45.71)	38 (59.37)	33.33 (49.26)
B. Private Sector								
a) Private Allopathy	8 (10.25)	3 (4.47)	3 (4.61)	4.66 (6.66)	5 (7.24)	4 (5.71)	2 (3.12)	3.66 (5.41)
b) Private Homeo	5 (6.41)	3 (4.47)	2 (3.07)	3.33 (4.76)	6 (8.69)	5 (7.14)	3 (4.68)	4.66 (6.89)
c) Private Ayurveda	2 (2.56)	2 (2.98)	1 (1.53)	1.66 (2.38)	3 (4.34)	2 (2.85)	1 (1.56)	2 (2.95)
Sub Total (B)	15 (19.23)	8 (11.94)	6 (9.23)	9.65 (15.25)	14 (20.28)	11 (15.71)	6 (9.37)	10.32 (13.78)
C. Non-institution								
a) Rural Bej/ Kabiraj	9 (11.53)	9 (13.43)	9 (13.84)	9 (12.85)	10 (14.49)	12 (17.14)	11 (17.18)	11 (16.25)
b) Medical shop	4 (5.12)	3 (4.47)	2 (3.07)	3 (4.28)	6 (8.69)	8 (11.42)	7 (10.93)	6.33 (9.36)
Sub Total (C)	13 (16.66)	12 (17.91)	11 (16.92)	12 (17.14)	16 (23.18)	20 (28.57)	18 (28.67)	17.33 (25.61)
D. Nil	14 (17.94)	12 (17.91)	10 (15.38)	12 (17.14)	9 (13.04)	7 (10.0)	4 (6.25)	6.66 (9.85)
Total (A+B+C+D)	78	67	65	70	69	70	64	67.66

Source: Field survey

N.B.: Figures in brackets are percentage

It has been observed from Table 6.14 that the dependence of cultivators and labourers on public sector institutions for medical care is around 49-52 percent in all groups. The high degree of dependence on the public health care system might be due to the poor economic condition of cultivators and labourers. Moreover, a significant percent of cultivators and labourers in all groups also depend on rural bej/kabiraj for medical care which is around 26 percent for labourers and 17 percent for cultivators indicating prevalence of ignorance and superstitions among both the sections of the

society possibly due their illiteracy and low level of educational attainment. On the other hand around 14-15 percent of cultivators and labourers depend upon private health care system in all groups as against 49-52 percent on public health care. Greater reliance on public health care system indicates subsistence level of living for both the sections of the society as public health care is cheaper than private health care due to government subsidies.

In respect of groups, the dependence on public health care institutions is maximum for group C cultivators and labourers with around 58-59 percent and minimum in group A with about 43- 46 percent. On the other hand, the dependence on private health care institutions by group A cultivators and labourers is maximum with around 19-20 percent and minimum in group C with about 9 percent. In fact, reliance of group A cultivators and labourers on private health care system is more than double compared to group C as income from farm activities and casual jobs for group A cultivators and labourers was higher than group C, although the difference of average income generated from farm and non-farm activities within the groups and between the groups provided no evidence of difference. However, a significant percent of cultivators and labourers depend on rural bej/ kabiraj and medical shop for medical care in the groups of villages under study. It varies from about 23-29 percent for groups of villages of labourers as against around 17-18 percent for cultivators. In fact, the dependence of groups of villages of labourers on rural bej/ kabiraj and medical shop is more than cultivators indicating greater incidence of poverty, illiteracy and ignorance among group A, B and C labourers than cultivators.

6.11. Literacy Rate:

Literacy rate is an important tool for vertical mobility in social life. Moreover, the literacy rate is an index of human development. But, among the female cultivators and agricultural labourers under study, an overwhelming proportion is illiterate and had not attended school. Majority of them have primary level education. But often this is not necessarily indicative of higher levels of literacy as it has been observed that many of the cultivators and labourers in this category did not know how to read and write. Indeed, irrespective of having received schooling for one or two years, a significant proportion of them do not get the benefit of education in their life, at least to read and write few words or sentences.

Table 6.15 depicts literacy rate in the groups of villages of female cultivators and agricultural labourers under study.

Table 6.15
Literacy rate in the groups of villages of cultivators and labourers under study

Level of education	Cultivators				Labourers			
	A	B	C	Average	A	B	C	Average
1. Lower primary	18(23.07)	19(28.35)	21(32.30)	19.33(27.61)	21(30.43)	23(32.85)	22(34.37)	22(32.51)
2. Upper primary	9(11.53)	6(8.95)	3(4.61)	6(8.57)	7(10.14)	6(8.57)	5(7.81)	6(8.86)
3. Matriculate	6(7.69)	4(5.97)	3(4.61)	4.33(6.19)	2(2.89)	2(2.85)	1(1.56)	1.66(2.46)
4. H.S.	3(3.84)	2(2.98)	3(4.61)	2.66(3.80)	1(1.44)	—	—	0.33(0.49)
5. Graduate	1(1.28)	—	—	0.33(0.47)	—	—	—	—
Total (1+2+3+4+5)	37	31	30	32.67	31	31	28	30
Literacy rate	37(47.43)	31(46.26)	30(46.15)	32.67(46.67)	31(44.92)	31(44.28)	28(43.75)	30(44.33)
Illiterate	41(52.56)	36(53.73)	35(53.84)	37.33(53.33)	38(55.07)	39(55.71)	36(56.25)	37.66(55.67)
Number of cultivators/ labourers	78	67	65	70	69	70	64	67.66

Source: Field survey

N.B.: Figures in brackets are percentage

It has been observed from Table 6.15 that the literacy rate of female cultivators is marginally higher than labourers in all groups. It is around 47 percent for cultivators as against almost 44 percent for labourers indicating limited opportunities for cultivators and labourers for vertical mobility. It is also an indicative for lower level of human development for both the sections of the society. In respect of groups of villages of cultivators and labourers there is no major distinction in literacy rate. It is around 46-47 percent for groups of villages of cultivators as against 44-45 percent for labourers.

However there is distinction in the level of educational attainment between the two sections of the society. Although the primary level education for labourers is around 33 percent as against almost 28 percent for cultivators in all groups, yet about 6 percent of cultivators are matriculate compared to only about 2 percent of labourers.

However, the upper primary education for both the sections of the society is almost the same. It is around 9 percent for both cultivators and labourers in all groups. Since the upper primary education for cultivators and labourers in all groups is lower than primary level, therefore it may indicate possibility of high drop out rates after primary level which may be due to poverty, early marriage and repeated fail in school examinations. In respect of groups, although the percentage of primary level of education varies from about 30-34 percent for labourers as against 23-32 percent for cultivators, yet around 5-8 percent of cultivators are matriculate as against only 2-3 percent of labourers. Further, the percentage of cultivators with upper primary level of education varies from about 5-11 percent in group A, B and C compared to 8-10 percent for the groups of villages of labourers. It indicates that the percentage of upper primary level of education for the groups of villages of cultivators and labourers is lower than lower primary level reflecting high drop out rates after primary level of education for both cultivators and labourers. Moreover, around 5-8 percent of cultivators in group A, B and C are matriculates compared to only 2-3 percent of labourers. Again, 4-5 percent of cultivators in group A, B and C are H.S. passed as against negligible percent of labourers, although labour time involvement between the groups and within the groups of villages of cultivators and labourers was almost the same. It indicates unemployment and poverty among cultivators and labourers, restricting their vertical mobility even though some of them are matriculates and H.S. passed.

6.12. Economic well-being of female cultivators and agricultural labourers:

The foregoing discussion concerning certain parameters of economic conditions of female cultivators and agricultural labourers such as value of assets, liabilities, housing conditions, electricity connection, cattle yard status, drinking water facilities, sanitation facilities, health care facilities, adult literacy rate and percentage of household having radio; television and mobile phones including their related variables has no doubt unfolded some idea about the economic well-being and standard of living of female cultivators and agricultural labourers in our study area. Considering the nature of the variables selected (positive and negative) a composite z-test is calculated to ascertain the relative standing of each group of our study area in respect of their economic well-being. Here, percentage of physical and financial assets, percentage of institutional loans, percentage of brick houses, percentage of

electrified houses, percentage of separate cattle yards, percentage of ventilated houses, percentage of households collecting safe drinking water, percentage of household having radio; television and mobile phones, percentage of respondents without suffering from any illness and literacy rate are positive parameters as their higher value exhibit high economic well-being. On the other hand, percentage of outstanding and current loans, percentage of non-institutional loans, percentage of kuchha houses, percentage of joint cattle yards, percentage of households not having toilet facilities, percentage of spontaneous; induced and premature delivery, and percentage of households depend upon rural bej / kabiraj and medical shop for health care are negative parameters as their high value exhibit low economic well-being. Therefore, signs of observations of all the negative parameters are reversed to make them compatible with the positive parameters while calculating composite test (Table 6.17)

It has been observed from Table 6.17 that the economic well-being of female cultivators and agricultural labourers in our study villages is almost the same as the composite z value for both the sections is almost equal i.e. around -3, although the cultivators have their own land against landlessness of labourers. It indicates subsistence level of living for both the sections of the society. In respect of groups, the composite z value for group A cultivators is maximum with + 0.85 and minimum in group C with -0.268. However, the composite z value for group B cultivators is also less than group A i.e., -1.28. Therefore, group A cultivators has been ranked with 1st followed by group B (with 2nd) and group C (3rd) in terms of economic well being. It indicates that the economic well being of group A cultivators is better than group B and C, although the difference of the composite Z value between the groups is almost negligible

Similarly, the group A labourers has been ranked at 1st in terms of economic well-being as composite z value is maximum with 2.30 and group C villages has been ranked at 3rd as composite z value is around -6. On the other hand, group B labourers have been ranked at 2nd where the composite z value is 0.78. It can therefore be concluded that there is intra village difference of economic well being of cultivators and labourers as against absence of any inter village difference.

Table 6.16

Selected indicators of economic well-being in the groups of villages of cultivators and labourers in the study area

Indicators	Cultivators					Labourers				
	A	B	C	Mean	SD	A	B	C	Mean	SD
Percentage of physical assets	89	90	91	90	0.81	92	92	93	92.33	0.46
Percentage of financial assets	11	10	9	10	0.81	8	8	7	7.66	0.46
Percentage of outstanding loans	41	42	43	42	0.81	44	45	46	45	0.81
Percentage of current loans	59	58	57	58	0.81	55	56	54	55	0.81
Percentage of institutional loans	69	63	60	64	3.74	24	23	22	23	0.81
Percentage of non-institutional loans	35	37	40	37.33	2.35	76	77	78	77	0.81
Percentage of bricked houses	67	61	55	61	4.89	58	56	54	56	1.63
Percentage of kacha houses	6	8	13	9	2.94	19	20	22	20.33	1.24
Percentage of electrified houses	73	73	71	72.33	0.93	64	62	60	62	2.30
Percentage of separate cattle yards	58	54	49	53.66	3.68	48	46	31	41.66	7.58
Percentage of joint cattle yards	23	25	29	25.66	2.49	26	27	31	28	2.16
Percentage of ventilated houses	52	51	49	50.66	1.24	47	46	43	45.33	1.69
Percentage of household collecting drinking water from safe sources	86	85	83	84.66	1.24	83	80	80	81	1.15
Percentage of household having radio, television and mobile phones	49	42	40	43.66	3.85	41	37	31	36.33	4.10
Percentage of households not having toilet facilities	33	34	37	34.66	1.69	41	37	34	37.33	2.86
Percentage of household without any illness	18	18	15	17	1.41	13	10	6	9.66	2.86
Percentage of spontaneous abortion	9	8	11	9.33	1.24	10	13	16	13	2.44
Percentage of induced abortion	6	5	9	6.66	1.70	5	10	11	8.66	2.62
Percentage of premature delivery	7	12	16	11.66	3.68	12	15	20	15.66	3.29
Percentage of dependence on rural bej/kabiraj and medical shop for health care	17	18	17	17.33	0.46	23	28	29	26.66	2.62
Literacy rate	47	46	46	46.66	0.56	45	44	44	44.33	0.47
Composite z value	0.85	-1.08	-2.68	—	—	2.30	0.78	-5.99	—	—
Ranking in terms of economic well-being	1 st	2 nd	3 rd	—	—	1 st	2 nd	3 rd	—	—
Total composite z value (A+B+C)	-2.91					-2.94				

Conclusion:

It has been found that the average value of assets of the cultivators is around Rs.9,79,000 whereas it is about Rs.4,57,000 of the labourers. As group A is the leading group in respect of income, so the assets of the group A are higher for cultivators. Similarly, for labourers the value of assets is highest in group A followed by group B and C. In case of cultivators, the value of assets of the group A is around Rs.11,93,000 and on the other hand, the value of the household assets of the labourers in group A is about Rs.5,13,800. The value of household assets of the cultivators varies from about Rs.7,86,400 to Rs.11,93,000 and for the labourers it varies from around Rs.3,72,800 to Rs.5,13,800.

The assets are divided into two parts as physical assets and financial assets. Although, the value of physical assets of labourers is more than cultivators in all groups, their value of financial assets is less than cultivators. The value of physical assets of labourers is around 92 percent to their total value of assets as against about 90 percent of cultivators. On the other hand, the value of financial assets of labourers is about 8 percent to their total value of assets in comparison to almost 10 percent of cultivators in all groups indicating that capacity to save for labourers is less than cultivators. Moreover, about 72 percent of average physical assets of labourers are livestock assets as against almost 32 percent of cultivators, although cultivators are having the better base to keep the milch animals and they have their own land to get easy supply of fodder. The possible reason for higher livestock assets of labourers may be the livestock sharing system followed in the villages under survey under which the labourers borrows live stocks from their employer cultivators. Labourers are compelled to follow this system as a substitute source of income for their livelihood because they have no farm income.

In respect of groups, the value of physical assets is the maximum for group C cultivators with about 91 percent and minimum in group A with almost 89 percent. But the value of financial assets is the minimum in group C with about 8 percent to their total value of assets and maximum in group A with around 11 percent which indicates lower saving capacity in group C than group A. Similarly, the value of physical assets for group C labourers is the maximum with about 93 percent and minimum in group A with around 92 percent. But the value of financial assets for group C labourers is lowest with about 7 percent as against around 8 percent in group A.

The liabilities on the loan outstanding of female cultivators and agricultural labourers are available from institutional and non-institutional sources. But loan taken by female cultivators are higher from institutional sources as against higher amount of loan from non-institutional sources for labourers. Among the farmers maximum loan was taken for production purposes followed by house construction, consumption, social ceremonies, health care and repayment of old debts. In the absence of land holding, the labourers are taking maximum loan for health care purposes followed by consumption, social ceremonies, house construction and repayment of old debts. The labourers are taking only about 7 percent of loan for production purposes as against almost 36 percent of cultivators to the total loan in all groups.

The housing condition of both the sections of the society is very poor. Although the average square feet of the cultivator houses is around more than 67 thousand sq. feet and almost 56 thousand sq. feet for labourers, yet almost 20 percent of labourer houses are kuchha houses as against 9 percent of cultivators. Moreover, the number of brick houses of cultivators is higher than labourers as the cultivators have farm income which is one of the most important sources of income in rural society. Though every village is having the facility of electricity but only about 72 percent of the cultivators and almost 62 percent of labourers are having this utility. There are only about 21 percent of mixed houses with the cultivators and labourers. Similarly, the cemented houses are only about 8 and 2 percent approximately for cultivators and labourers respectively. Only around 49 percent of the cultivator houses are ventilated as against almost 46 percent of labourers. Moreover, the percentage to the total number of houses of the cultivators having separate cattle yards are around 54 as against only about 42 percent of labourers indicating that the cultivators and particularly the labourers are having very small space for their living and when they attach the cattle yard in their own houses, their living becomes more difficult. While they are having problems of accommodation, they are also compelled to keep the cattle in their houses to supplement their income. Almost 85 percent of cultivator houses are accessing safe drinking water while percentages of households having safe drinking water for labourers are about 81 percent indicating possibility of water borne diseases for both the sections of the rural society. Moreover, the percentages of households having radio; television and mobile phones are about 19, 10 and 14 respectively for cultivators as against almost 16, 9 and 11 percent of labourers indicating that both the sections of the rural society are unable to access latest

information relating to production, marketing and even family planning, although labourers are comparatively more disadvantageous than cultivators in accessing up-to-date information. It has further been observed that the percentage of cultivator households having toilet facilities is more than labourers as the resource base of the cultivators was higher than labourers. It is around 65 percent for cultivators as against almost 49 percent of labourers indicating higher possibility of some diseases like diarrhea, trachoma, cholera and schistosomiasis among labourers than cultivators. However, almost one third of cultivators and half of the labourers are not having toilet facilities. Further, the literacy rate which is an important tool for vertical mobility is marginally higher for cultivators than labourers. It is around 47 percent for cultivators as against almost 44 percent of labourers indicating limited scope of vertical mobility for both the sections of the society. Illness among cultivators and labourers during last two weeks prior to the date of interview reveal that the percentage of cultivators without having any perceived health problems is higher than labourers in all groups. It is around 17 percent for cultivators as against about 10 percent of labourers indicating that illness among the labourers is more than cultivators. The possible reason of higher incidence of illness among groups of villages of labourers than cultivators may be due to work related health hazards as the incidence of chronic skeletal muscular and postural health problems such as joint pain, back pain and respiratory diseases such as asthma of labourers are more than cultivators. The incidence of water borne diseases like diarrhoea and jaundice is also higher for labourers than cultivators as percentage of labourers accessing drinking water from safe sources is less than cultivators. The incidence of general malaise and abdominal pain is also higher for labourers than cultivators which is an indicative of under-nourishment and poor health of labourers as such diseases is arising mainly from acidity problems created by improper and irregular food habits. Thus, the general trends in the morbidity patterns reveal that their ailment is related more with poverty and occupation rather than with lifestyle. Compared to the load of general ailments, the proportion of reproductive health problems like leucorrhoea and irregular bleeding among cultivators and labourers is very small. However, the incidence of irregular bleeding for labourers is higher than cultivators indicating lack of proper medical attention by the labourers during bleeding which may be due their poor socio-economic background, overwork and lack of adequate nourishment. The percentage of induced abortion of labourers in all groups is also higher than cultivators. It is around 9 percent for labourers to the

average number of ever married women as against almost 6 percent of cultivators indicating that the tendencies to terminate unwanted pregnancies and apprehension regarding birth of another girl child for labourers is more than cultivators as the literacy rate of labourers is lower than cultivators. Thus it is found that even today, women depend on abortion for controlling their fertility. Similarly, the percentage of premature delivery to the average number of ever married women among labourers is also more than cultivators in all groups. It is around 15 percent for labourers as against about 11 percent of cultivators indicating more under-nourishment and poverty among labourers than cultivators. Although the percentage of dependence on public health care system of cultivators (51.9 percent) is higher than labourers (49.26 percent), the dependence of labourers on rural bej / kabiraj and medical shop is higher than cultivators. It is about 26 percent for labourers as against almost 17 percent of cultivators indicating that the ignorance, superstitious belief and illiteracy among labourers are more than cultivators.

Depending on the parameters of economic conditions of female cultivators and agricultural labourers as noted above (selected parameter), a composite z-test has been calculated to ascertain the relative standing of each group in respect of their economic well-being. It has been found that the economic well-being of female cultivators and agricultural labourers in our study villages is almost the same as the composite z value for both the sections is almost equal i.e. around -3, although the cultivators have their own land against landlessness of labourers. It indicates subsistence level of living for both the sections of the society. In respect of groups, the composite z value for group A cultivators is maximum with + 0.85 and minimum in group C with -0.268. However, the composite z value for group B cultivators is also less than group A i.e. -1.28. Therefore, group A cultivators has been ranked with 1st followed by group B (with 2nd) and group C (3rd) in terms of economic well being. It indicates that the economic well being of group A cultivators is better than group B and C, although the difference of the composite Z value between the groups is almost negligible. Similarly, the group A labourers has been ranked at 1st in terms of economic well-being as composite z value is maximum with 2.30 and group C villages has been ranked at 3rd as composite z value is around -6. On the other hand, group B labourers have been ranked at 2nd where the composite z value is 0.78. It can therefore be concluded that there is intra village difference of economic well being of cultivators and labourers as against absence of any inter village difference.

CHAPTER VII

SUMMARY AND CONCLUSIONS

7.01 Summary: The present research work as outlined in the preceding chapters basically embodies an attempt to capture the totality of labour commitment of female cultivators and agricultural labourers, their composition of income and consumption expenditure and economic conditions in terms of assets and liabilities, housing status, availability of safe drinking water, percent of household having electricity as a source of lighting, not having toilet facility, percentage of population having access to radio; television; telephone, adult literacy rate and health problems and health care services of Assam in general and that of Barpeta District of Assam in particular. It has been revealed that majority of female workers of rural areas are either female cultivators or agricultural labourers. The survey indicates that female cultivators and agricultural labourers contribute a significant share of the labour use in crop production, but also spend a considerable amount of time in livestock rearing, food processing, Sericulture and weaving activities. These time commitments are in addition to the amount of time spent in household chores – almost invariably the responsibility of women. There is substantial gender specificity to many agricultural operations. Women agricultural workers continue to be paid less than their male counterparts, and suffer seasonality in employment. Though there are no inter village and intra village differences regarding labour time use, income and consumption expenditures of female cultivators and agricultural labourers, yet there are inequalities between the two sections of the rural society on some basic parameters of economic well-being like assets and liabilities, housing conditions, availability of safe drinking water, literacy rate, health care services and sanitation among the groups of villages under study.

Chapter I which encompasses the research problem, its goal and significance and a review of research in the field forms the basic foundation and direction of the study. Methods and approaches thought to be appropriate for the present study have been applied including a review of relevant literature and personal field observations. It may, however, be mentioned here that the analysis of the problem is sometimes constrained due to the non-availability of adequate data at desired level.

A study of the socio-economic status of women in Assam is made in Chapter II, as they have a significant bearing on both the quality of women population and the level of socio-economic development of the region. An attempt is made to examine

the demographic characteristics of women population of Assam as well as the three geographical regions of Assam (Lower Assam, Central Assam and Upper Assam) along with Barpeta District in comparison to national level, in terms of age and sex composition, fertility and mortality pattern, infant mortality, life expectancy, marital status, maternal mortality rate, educational status, supply of basic amenities of life and labour force participation. It has been found from the study that women in Assam don't enjoy a satisfactory position in a number of demographic fronts. For instance, infant mortality rate in Assam was 64 per mille in comparison to 53 per mille in India in 2009, female mortality rate in Assam was 7.4 per mille in comparison to 6.7 per mille in India in 2009, female life expectancy were 59.3 years in Assam in comparison to 64.2 at all India level in 2002-06, and maternal mortality rate in Assam was 480 per 1,00,000 live birth in Assam in comparison to only 254 at all India level indicating lower health status of women population in Assam. Although GER in schools in Assam at middle stages (classes VI to VIII) were higher for girls' at 90.5 in comparison to 74.4 at all India level (2010-11), the school dropout rates in Assam were higher than all India level (78.51 percent in Assam in 2008-09 in comparison to 60.12 percent at all India level) indicating poverty as most of the females dropped out from schools due to economic necessity. In the field of education, women in Assam are in a better position than the all India average. As per 2011 provisional census, the total literacy rate for Assam was 73.04 percent as against 74.04 percent rate for India. While male literacy was 78.81 percent (India – 82.14 percent), female literacy stands at 67.27 percent (India – 65.46 percent). The male-female gap in the literacy rate is still perceptible although female literacy rate in Assam is higher than all India average. Although the sex ratio of Assam have been increasing over the period 1951-2011 with the increase of the female literacy rate, the labour force participation rate of rural and urban women of Assam has been low over the period 1993-94 to 2005-06. But at regional level a slight different picture has been revealed. Although the female literacy rate of Upper Assam was 71.75 percent in comparison to 66.15 percent of Central Assam and 66.12 percent of Lower Assam in 2011, the sex ratio was low at 1000:949 in Upper Assam followed by 1000:956 in Central Assam and 1000:957 in Lower Assam. Similarly, the female labour force participation rate of Upper Assam was only 24.49 percent although literacy rate was higher. But the female labour force participation rate of Central Assam was 28.19 percent with literacy rate of 66.15 percent in 2011. The female labour force participation rate of Lower Assam was only

16.70 percent although literacy rate was 64.12 percent in 2011. Although the female literacy rate of Barpeta District was lower than Assam, the sex ratio was higher at 1000:958 in comparison to 1000:954 of Assam in 2011. But female labour force participation rate of Barpeta District was only 14.01 percent.

Life expectancy at birth is directly associated with the level of socio-economic development. As a matter of fact, the physical well-being of any population can very well be ascertained from its life expectancy. Although female life expectancy of Assam was higher than males over the period 1989 – 99 to 2002 – 06, it was much lower than national level.

The marital status of female vis-à-vis male population reflects demographic and social status of women population. Satisfactorily, the proportions of married population are quite low among both the sexes in Assam as compared to that of the country as a whole. It is indicative of the prevalence of a relatively higher age at marriage in Assam. The situation becomes far from satisfactory when proportions of widows and divorced/separated females are taken into consideration. It is because both the proportions of widows and divorced/separated females are strikingly higher than the respective male counterparts in Assam due to the prevailing social restriction of their remarriage.

Satisfactorily, the mean female age at marriage is found to be significantly high in Assam. Region wise, mean age at marriage for females in Upper Assam was higher in comparison to Central and Lower Assam as literacy rate of Upper Assam was also significantly higher.

The analysis of composite z-test and some selected demographic indicators reveals that the physical well-being of women in Assam varies widely from one region to another. The values of composite z-test show that the Central Assam occupies the highest position followed by Upper Assam and Lower Assam.

Thus, the demographic characteristics as outlined above do not seem to reveal a clear cut picture of the physical well-being of women in Assam. It appears that the factors influencing different indicators of physical well-being operate at variance at different situations.

Chapter III deals with the nature of economic activities of rural women in Assam. There is not only low female work participation in Assam, but also there are rural urban differentials. The work participation rate among the urban women is very low against their rural counterpart in Assam and Barpeta District. Moreover, the

female work participation rate in rural and urban areas of Barpeta District of Assam is lower than the average rate of Assam. The employment indicators like female WPR and proportion of female main and marginal workers are low in low literacy region (Lower Assam). In other words Lower Assam shows highest proportion of female non-workers. Being a part of Lower Assam, the WPR and proportion of female main and marginal workers in Barpeta District are low in comparison to average rate of Assam as literacy rate is only 59.04 percent leading to highest proportion of female non-workers at 85.98 percent.

Moreover, there is high percentage of female main workers in the age group 5-14 years than males in Assam which is an indicative of more child labour among females than males. Further, a significant proportion of female main workers above 60 years of age work due to economic necessity. It is however, satisfactory to note that the percentage of female main workers in the age group 15-59 were higher than males in Assam as elsewhere of the country.

Age and sex are two important demographic characteristics. It has been observed from NSSO data that there is no major increase in FWPR in rural and urban areas of India during 1993-94 to 2004-05. But in Assam, the highest increase in FWPR in rural areas took place in the age group 30-44 years (around 4 percent) during 1993-94 to 2004-05 as against highest increase in urban Assam in the age group 45-59 years i.e. 15 percent. The analysis of Age-Specific WPR has shown that the highest increase in FWPR in rural areas took place in the age group of 30-44 years (around 4 percent) during 1993-94 to 2004-05 as against highest increase in urban Assam in the age group 45-59 years i.e. 1.5 percent. Thus, higher aged persons are entering in the female labour market in recent times. This may be due to impact of inflation or social cause like breaking up of joint families into nuclear ones'.

Further, the ESFWPR in Assam was increased by 13.9 percentage points and almost stagnant at all India level during 1993-94 to 2004-05. The possible reasons may be that 87 percent of Assam population lives in rural areas. Literacy rate and education level is poor in rural areas. For illiterate women it is easy to enter the primary sector. On the other hand, women with higher education prefer to do job/work and earn rather to sit idly.

Census data of work participation rate of main and marginal workers has shown that the percentage of both male and female main workers decreased in Assam during the period 1991-2001. But there was substantial male-female gap of main

workers. It was almost 30 percent in 1991 which marginally declined to 29 percent in 2001. It indicates that males were engaged in more assured productive activities than females. Region wise, the percentage of female main workers to the total female population were lower in industrially backward Lower Assam and Barpeta District of Assam in comparison to average figure of Assam in 1991 and 2001. However, the percentage of female main workers to the total female population was higher in Central and Upper Assam in comparison to the average figure of Assam in 1991 and 2001 as because these regions are industrially advanced (particularly by tea industries) in comparison to Lower Assam.

As men migrate in search of better paid work, women particularly in rural areas are taking over agricultural work in the villages. They face meager wages, long hours and hazardous work. Figures from the census show that, amongst women, the percentage of "marginal workers" (defined as working for less than 183 days per year) has increased significantly in Assam from about 9 percent in 1991 to about 11 percent in 2001. During the same period, there was a sharp fall in the percentage of "main workers" (more than 183 days a year). The figures thus show a casualisation and feminization of the work force, with the number of marginal women workers becoming larger and more significant. Region wise, the percentage of female marginal workers in Central Assam was highest, although it has remained stagnant at around 13 percent over the period 1991-2001. During the same period, there was a sharp rise in the percentage of female marginal workers by around 6 percent in Upper Assam, and only 2 percent in Lower Assam and Barpeta District. In fact, the percentage of female marginal workers in Upper and Central Assam was more than average figure of Assam in both 1991 and 2001. It indicates not only significant regional variation in proportion of female marginal workers, but also possibility of higher incidence of unemployment among females. As marginal work is uncertain and related to irregular income, the significant percent of female marginal workers also indicate poverty and inequality.

Data relating to age group wise labour by sex has shown that higher percentage of female main workers were in the age group 5-14 years than males in both Assam and India indicating more child labour among females than males. Similarly, significant percent of female main workers in the age group above 60 in both Assam and India indicates poverty where aged people are compelled to work due to economic necessity.

The analysis of occupational structure reveals that a substantial proportion of rural work force engaged in primary sector and a very small proportion have been found engaged in secondary and tertiary sector. Agriculture is the mainstay to a very large proportion of the working population. As much as 60.33 percent of females are engaged in this sector in rural Assam, 82.21 percent in Barpeta District and 79.85 percent in rural India in 2001. In fact percentages of female work force engaged in agriculture in Barpeta District are more than average percentage of Assam. It is because of the inadequate development of secondary and tertiary sector that a substantial part of the labour force is compelled to remain in the primary sector. However, the female occupational structure in rural and urban areas has been changing slowly with a slow declining trend in the proportion of labour force in the primary sector. Moreover, the number of workers engaged in tertiary sector is on an increase as against decrease in secondary sector. This means that the change in the female occupational structure in 1991-2001 decade signifies rising work participation in the tertiary services sector, rather than in the commodity sector. This perhaps points to the emergence of positive growth forces in the economy.

Moreover, majority of female main workers are either cultivators or agricultural labourers. As many as 40.42 percent of female main workers in Assam is cultivators and 16.48 percent are agricultural labourers. In Barpeta District, 30.86 percent of female main workers are cultivators and 19.24 percent are agricultural labourers. In fact, percentage of agricultural labourers in Barpeta District is higher than Assam indicating poor economic condition and landlessness to a large section of population.

Although a significant proportion of female population is engaged in the unorganized primary sector, the participation of women in the organized sector is remarkably low in Assam. But the participation of women in the organized sector in Assam is remarkably higher than the national average. It may be due to large number of tea garden labourers in Assam. However, the share of women in employment out of total employment in organized private sector in Assam is higher than public sector. It is an indication of less economic security to a majority of employed female in Assam. The employment position of women as per employment exchange in Assam is also not encouraging. Almost 16 percent of females are without any placement, out of the total registered females in employment exchanges.

An important aspect of quality of female employment in Assam is predominance of the unorganized sector. Over the years, organised sector employment has grown relatively slowly (less than one percent during 2001-08) reflecting the faster growth of employment in the unorganized sector. As a result, there has been increasing informalisation of employment over the years. As a whole, about 67 percent of female employment is in the unorganized sector in Assam. In urban areas, the percentage of unorganized sector workers is close to 55-60 percent.

A large proportion of the workers engaged in the urban unorganized sector is migrants from rural areas with poor educational, training and skill background and are employed in low-paying, semi-skilled or unskilled jobs. The productivity and earning levels in most of the enterprises are low and do not often provide full time work to those engaged. For the employees, the working environment is not conducive, working hours are long and most of the conditions of decent employment (e.g. paid leave, pension, bonus, medical support and health insurance, maternity leave benefit, compensation against accident, etc) are virtually non-existent.

Although the magnitude of unemployment in Assam is not precisely known, we can have an idea about the trend and dimension of the problem from the number of job seekers registered with the employment exchanges. The percentage share of women to the total placement gradually increased by around 9 percent and as a result percentage of women without placement declined gradually by around 6 percent during 2004-08. Nevertheless, almost half of the women registered in employment exchanges have remained without placement. This is an indication of the mass unemployment problem of Assam in recent years. The unemployment statistics reflect only the trend and not the totality of employment and underemployment as all unemployed do not and cannot register themselves with the employment exchanges, which are mostly located in the urban areas.

Besides, there is a significant proportion of under-employment or disguised unemployment existing in the rural areas of the state, which is exerting enormous pressure on the rural economy of the state. The enormity of the problem can be appreciated from the fact that nearly 36 percent of the total population of Assam continues to live below the poverty line, a figure much above the national average of 26 percent.

The employment-unemployment survey conducted by the NSSO in various rounds provides a glimpse of various characteristics of employment and

unemployment situation in the country as well as in the states. The percentage of female employment in rural Assam according to usual status was around 16 percent in NSSO's 50th round which sharply declined to around 8.6 percent in the 60th round as the state continues to be marked by low agricultural productivity, poor infrastructure, weak communications and nascent levels of industrial activity during this period. With political normalcy restored since the past few years and improvements in the state's exchequer, investments and developmental interventions have experienced improvements. This may be the possible reason for sharp increase in female employment in rural Assam to around 21 percent of NSSO's 61st round and around 29 percent in 64th Round.

As agriculture is the predominant sector in rural areas, therefore, unemployment rate for both males and females in rural areas was less than urban areas during 1995-96 and 2004-05 in Assam as well as in India. The rural-urban differential of female unemployment rates was almost 6 percent in Assam during 1995-96 and remained almost the same in 2004-05. However, such rural-urban differential was only 4 percent in 1995-96 and marginally increased to around 5 percent at national level during 2004-05. It indicates that the unemployment rate among urban women was not only higher than rural women but also higher than the national level. The possible reason may be that there is a tendency of early exit of women (probably after marriage) from labour market particularly in urban areas due to inadequate social and family support system.

Moreover, the Workers Population Ratio (WPR) of Assam is lower than the national average at all age group level both in rural and urban areas. While at the younger age (below 14) lower WPR is a good sign for Assam, yet about 5 percent of the population in rural areas and about 3 percent in urban areas of the population of the age below 14 years are workers, which indicates existence of child labour in the society.

The most dismal stage of affairs in the female labour market of Assam can be located in the category of casual wage labourers while their work contract is terminated and renewed on a daily basis. Poor working conditions and low wages drive them to poverty. The index of casualisation in the rural areas of Assam increased by around 16 percent during 1993-94 to 2004-05 as against 13 percent decrease in urban Assam during the same period. The marked rural-urban difference in terms of percentage of female workers engaged as casual wage earners at once

reveal the several disadvantages experienced like, low wage rates, uncertain employment, and irregularity of rural female workers. In 2004-05, average casual wages for males and females was just Rs.58/- and Rs.36/- respectively in rural areas and Rs.76/- and Rs.45/- respectively in urban areas. In addition to low wages for casual workers, there is also gender bias in wage payments. It is important to note that the gender bias in casual wage payments is low in rural areas (0.61) than in urban areas (0.58).

As majority of female main workers are either cultivators or agricultural labourers, therefore Chapter IV is an attempt to examine the role of female cultivators and agricultural labourers in terms of labour hours in crop production and allied activities in rural Assam, based on field survey data. The technical design of the study is three-stage stratified random sampling with the Block as the first stage of the sampling unit, villages as the second stage of the sampling unit and the female cultivators and agricultural labourers as the third and ultimate stage of the sampling unit. The data was collected on the basis of interview method by dividing the sample villages into three groups A, B and C depending on FWPR. Such data were converted into per (8 hour) day equivalents for analysis of the role of female cultivators and agricultural labourers in agriculture and allied activities in terms of labour hours within the study groups. In doing so we pay particular attention to many activities that are often not counted as economically productive, such as time spent in tending of animals and poultry. It has been found that more female cultivators are employed in crop cultivation than agricultural labourers. In respect of study groups, the employment of female cultivators and agricultural labourers in crop cultivation is higher in group A followed by groups B and C. Disaggregated analysis by crop pattern reveal that rice is the major crop followed by vegetables and oilseeds where majority of female cultivators and agricultural labourers spent their labour time. Pulses and sugarcane accounted for a small percent of labour time use. The study also indicates that there is considerable specificity to the operation in which women participate. Women are engaged in sowing, transplanting and harvesting activities. They do not participate in the preparation of land, spraying of insecticides/pesticides, and use of wooden plough.

Next to crop cultivation, the study indicated that majority of female cultivators contributed their labour time in livestock and poultry related activities followed by handloom weaving, sericultural activities and food processing. But the female

agricultural labourers spent their labour time more in livestock and poultry related activities rather than crop cultivation as they do not possess their own land. The next important set of activities is the sericultural activities followed by handloom weaving and food processing by agricultural labourers.

Taking into account all the activities of female cultivators and agricultural labourers it is being observed that labour time use by female cultivators and agricultural labourers were highest in group A followed by group B and group C. But analysis of variance (ANOVA) of labour time use of female cultivators and agricultural labourers has shown that the difference in the labour time use of female cultivators and agricultural labourers among various groups is insignificant. Moreover, it has been found on the basis of z-test that the labour time use of female cultivators and agricultural labourers are almost the same within the groups as calculated value of z in all groups are smaller than critical value at 5% level of significance.

The composition of income and consumption expenditure of female cultivators and agricultural labourers has been delineated in Chapter V. As analyzed from the data the average income of the cultivators is around Rs.5,43,000 as compared to Rs.4,36,000 approximately for the labourers. In respect of groups also the income of the cultivators is higher as compared to the income of the labourers. In case of cultivators it is the maximum in group A with about Rs.6,50,000 and minimum is group C with almost Rs.4,81,000 as labour time use for group A cultivators was more than group C in crop cultivation and allied activities. Similar phenomenon has been observed for labourers where income of the group A labourers is highest with around Rs.5,00,000 and lowest in group C with about Rs.3,67,000 which may be due to the same reason i.e. more labour time use of group A labourers in crop cultivation and allied activities than group C. It indicates a possible correlation between labour time use and income of cultivators and labourers.

Farm income is the largest source of income of the cultivators where the earnings from casual labour are the major source of income of the labourers. On an average, farm income realised by crops is contributing almost 48 percent to the total income for cultivators. It is again highest in group A with around 49 percent and lowest in group C with about 47 percent to their respective total income as the economic well-being of group A cultivators (Chapter VI) based on composite z-test is 0.85 in comparison to -1.08 in group C. There is no possibility of farm income in case

of agricultural labourers as they are defined as the landless agricultural labourers. The major part of their income is from their participation as casual labour. On an average, they are earning almost Rs.2,58,000 as casual labour which is around 59 percent to their total income. In case of cultivators, the female family labour is taken into account. Their labour is converted as the permanent labour and it is worked out that cultivators are earning about Rs.1,57,000 i.e. around 29 percent from their family labour whereas the income of the labourers from permanent labour is around Rs.98400 i.e. about 22 percent. The labourers prefer casual labour as the casual workers enjoy more freedom.

The crop sharing labour is similar to permanent labour and the method of payment is the only difference. The crop sharing labourers are getting the particular share of the crop of the cultivators. A few cultivators are serving as crop share labourers. But the number of agricultural labourers is higher. Female cultivators are earning almost Rs.3190 i.e. less than 1 percent to the total income. On the other hand, the agricultural labourers are earning around Rs.21300 i.e. around 5 percent to their total income. It indicates that the landlessness of labourers compel them to engage themselves in crop sharing for their livelihood.

Among the subsidiary occupations dairy farming is the major contributor to the income of the female cultivators and agricultural labourers. The cultivators are earning about Rs.30150 i.e. around 5 percent to the total income whereas the labourers are earning about Rs.12500 i.e. around 3 percent. It is primarily because of the better facilities which are available to the cultivators to run this business. Poultry farming is the other activity which contributes almost 4 percent of income to the total income in all groups as against about 3 percent of the labourers. The cultivators as well as labourers are running certain other small enterprises related with farming like sale of vegetables, bee keeping, sheep rearing etc. and the cultivators are earning almost 2 percent to their total income in all groups as against only 0.37 percent of labourers from such activities. Although variance of income among study groups is not statistically significant, it is significant within the groups. Using ANOVA it has been found that the difference in the income among various groups (Group A, B and C) of female cultivators and agricultural labourers is not significant as variance ratio (F) is less than critical value at 5% level of significance. Similarly, the results of variation of income of female cultivators and agricultural labourers within the groups are analysed by using z-test. It has been found from the said test that the income

difference of female cultivators and agricultural labourers within the groups is statistically insignificant. Thus, there is no inter and intra village difference of income of cultivators and labourers.

As the income of the cultivators from farm and non-farm sources is higher than labourers, the average consumption expenditure of cultivators is also higher than labourers. It is around Rs.5 lakh for cultivators in comparison to about Rs.4 lakh of the labourers indicating that the cultivators are spending almost 12 percent more than labourers. Though there is a significant difference in the expenditure in these two sections, but they are spending the major part of their income on the food items and a very small amount on non-food items indicating under development of the rural society. The food items constitute for almost 76 percent of their total consumption expenditure for cultivators whereas the labourers are spending about 85 percent. On the other hand, around 24 percent of the total consumption expenditure is being spent on non-food items by the cultivators. The labourers are spending about 15 percent on non-food items. Among the food items, the maximum is being spent on rice which is the staple food. The cultivators are spending 21.29 percent on rice in all groups as against 23.31 percent of labourers. Another important food item is meat/fish, eggs and so about 13 percent of the total consumption expenditure is made by the cultivators on this item in all groups as against almost the same percent by the labourers as fish and eggs are easily available in our study villages with relatively cheaper price than nearest urban centres. In non-food item only about 3 percent of the total expenditure is spent on clothing by the cultivators whereas the labourers are spending almost 2 percent. Very small amount is spent on entertainment.

In respect of groups, group A is the leading group as average income of this group of cultivators and labourers was higher than group B and C. The average consumption expenditure of group A of the cultivators is about Rs.6 lakh whereas it is about Rs.5 lakh for the labourers. A good amount of money is being spent on social ceremonies, but it is observed that in case of cultivators, they are spending only about 2 percent of their total consumption expenditure on social ceremonies as against almost 1 percent of the labourers. The money spent on education that is the most important for improvement in the quality of life is very small for both the sections of the rural society. It is only about 2 percent to the total consumption expenditure for cultivators in all groups as against around 1 percent of labourers. In respect of groups, the group B cultivators are spending the maximum with more than 2 percent and

minimum in group C with about less than 2 percent. But the labourers are spending maximum in group A with about 2 percent and minimum in group C with less than 1 percent. All such phenomenon indicate lower literacy rate among cultivators and labourers. The average expenditure on meat/fish/egg is the maximum in group A and minimum in group C for the cultivators and in case of labourers also it is the maximum in group A and minimum in group C. The average expenditure on food items of the cultivators is the maximum in group C with about 80 percent to the total consumption expenditure and minimum in group A with almost 71 percent indicating lower economic well-being of group C cultivators than group A as literature suggests that more is the under development more is the expenditure on food items and less expenditure on luxuries. Similar phenomenon has been observed for labourers where expenditure on food items in group C is the maximum with about 85 percent and minimum in group A with around 80 percent. Reversely, the average consumption expenditure on non-food item is the maximum in group A with about 29 percent for cultivators and minimum in group C with only 20 percent approximately. Similarly, the average consumption expenditure on non-food item is the maximum in group A with about 20 percent for cultivators and minimum in group C with only 9 percent approximately.

Group wise average consumption expenditure of cultivators and labourers is analysed by using ANOVA and it is observed that the difference in consumption expenditure among various groups is statistically insignificant as variance ratio (F) is less than critical value at 5% level of significance. Similarly, the results of variation of consumption expenditure of cultivators and labourers within the groups are analyzed by using z-test. It has been found from the analysis that the calculated value of z for consumption expenditure of cultivators and labourers in group A (22.33), group B (9.97) and group C (18.59) is higher than critical value at 1% and 5% level of significance. Therefore, we may reject the null hypothesis (H_0) and accept the alternative hypothesis (H_1) i.e. annual average consumption expenditure of female cultivators is greater than the labourers within the study groups, even though annual average income of cultivators and labourers provides no evidence of difference within study groups. This may be possible as consumption function is a psychological concept and it is influenced by subjective factors, like consumer's preferences, habits etc. Although variance of consumption expenditure among various groups is not significant, it is significant within the groups. Thus there are no inter-village

differences of average consumption expenditure of cultivators and labourers. However, there are intra-village differences of average consumption expenditure between the two sections of rural society.

Chapter VI deals with economic conditions of female cultivators and agricultural labourers using various parameters such as share of assets and liabilities, housing conditions, percent of households having electricity as source of lighting, access to safe drinking water within premises, not having toilet facility, percentage of households having access to radio; television; telephone, adult literacy rate and health problems and health care services!

The average value of assets of the cultivators is around Rs.979000 whereas it is about Rs.457000 of the labourers. As group A is the leading group in respect of income, so the assets of the group A are higher for cultivators. Similarly, for labourers the value of assets is highest in group A followed by group B and C. In case of cultivators, the value of assets of the group A is around Rs.1193000 and on the other hand, the value of the household assets of the labourers in group A is about Rs.513800. The value of household assets of the cultivators varies from about Rs.786400 to Rs.1193000 and for the labourers it varies from around Rs.372800 to Rs.513800.

The assets are divided into two parts as physical assets and financial assets. Although, the value of physical assets of labourers is more than cultivators in all groups, their value of financial assets is less than cultivators. The value of physical assets of labourers is around 92 percent to their total value of assets as against about 90 percent of cultivators. On the other hand, the value of financial assets of labourers is about 8 percent to their total value of assets in comparison to almost 10 percent of cultivators in all groups indicating that capacity to save for labourers is less than cultivators. Moreover, about 72 percent of average physical assets of labourers are livestock assets as against almost 32 percent of cultivators, although cultivators are having the better base to keep the milch animals and they have their own land to get easy supply of fodder. The possible reason for higher livestock assets of labourers may be the livestock sharing system followed in the villages under survey under which the labourers borrows live stocks from their employer cultivators. Labourers are compelled to follow this system as a substitute source of income for their livelihood because they have no farm income.

In respect of groups, the value of physical assets is the maximum for group C cultivators with about 91 percent and minimum in group A with almost 89 percent. But the value of financial assets is the minimum in group C with about 8 percent to their total value of assets and maximum in group A with around 11 percent which indicates lower saving capacity in group C than group A. Similarly, the value of physical assets for group C labourers is the maximum with about 93 percent and minimum in group A with around 92 percent. But the value of financial assets for group C labourers is lowest with about 7 percent as against around 8 percent in group A.

The liabilities on the loan outstanding of female cultivators and agricultural labourers are available from institutional and non-institutional sources. But loan taken by female cultivators are higher from institutional sources as against higher amount of loan from non-institutional sources for labourers. Among the farmers maximum loan was taken for production purposes followed by house construction, consumption, social ceremonies, health care and repayment of old debts. In the absence of land holding, the labourers are taking maximum loan for health care purposes followed by consumption, social ceremonies, house construction and repayment of old debts. The labourers are taking only about 7 percent of loan for production purposes as against almost 36 percent of cultivators to the total loan in all groups.

The housing condition of both the sections of the society is very poor. Although the average square feet of the cultivator houses is around more than 67 thousand sq. feet and almost 56 thousand sq. feet for labourers, yet almost 20 percent of labourer houses are kacha houses as against 9 percent of cultivators. Moreover, the number of bricked houses of cultivators is higher than labourers as the cultivators have farm income which is one of the most important sources of income in rural society. Though every village is having the facility of electricity but only about 72 percent of the cultivators and almost 62 percent of labourers are having this utility. There are only about 21 percent of mixed houses with the cultivators and labourers. Similarly, the cemented houses are only about 8 and 2 percent approximately for cultivators and labourers respectively. Only around 49 percent of the cultivator houses are ventilated as against almost 46 percent of labourers. Moreover, the percentage to the total number of houses of the cultivators having separate cattle yards are around 54 as against only about 42 percent of labourers indicating that the cultivators and particularly the labourers are having very small space for their living and when they

attach the cattle yard in their own houses, their living becomes more difficult. While they are having problems of accommodation, they are also compelled to keep the cattle in their houses to supplement their income. Almost 85 percent of cultivator houses are accessing safe drinking water while percentages of households having safe drinking water for labourers are about 81 percent indicating possibility of water borne diseases for both the sections of the rural society. Moreover, the percentages of households having radio; television and mobile phones are about 19, 10 and 14 respectively for cultivators as against almost 16, 9 and 11 percent of labourers indicating that both the sections of the rural society are unable to access latest information relating to production, marketing and even family planning, although labourers are comparatively more disadvantageous than cultivators in accessing up-to-date information. It has further been observed that the percentage of cultivator households having toilet facilities is more than labourers as the resource base of the cultivators was higher than labourers. It is around 65 percent for cultivators as against almost 49 percent of labourers indicating higher possibility of some diseases like diarrhea, trachoma, cholera and schistosomiasis among labourers than cultivators. However, almost one third of cultivators and half of the labourers are not having toilet facilities. Further, the literacy rate which is an important tool for vertical mobility is marginally higher for cultivators than labourers. It is around 47 percent for cultivators as against almost 44 percent of labourers indicating limited scope of vertical mobility for both the sections of the society. The illness distributions among cultivators and labourers during last two weeks prior to the date of interview reveal that the percentage of cultivators without having any perceived health problems is higher than labourers in all groups. It is around 17 percent for cultivators as against about 10 percent of labourers indicating that illness among the labourers is more than cultivators. The possible reason of higher incidence of illness among groups of villages of labourers than cultivators may be due to work related health hazards as the incidence of chronic skeletal muscular and postural health problems such as joint pain, back pain and respiratory diseases such as asthma of labourers are more than cultivators. The incidence of water borne diseases like diarrhea and jaundice is also higher for labourers than cultivators as percentage of labourers accessing drinking water from safe sources is less than cultivators. The incidence of general malaise and abdominal pain is also higher for labourers than cultivators which is an indicative of under-nourishment and poor health of labourers as such diseases is arising mainly

from acidity problems created by improper and irregular food habits. Thus, the general trends in the morbidity patterns reveal that their ailment is related more with poverty and occupation rather than with lifestyle. Compared to the load of general ailments, the proportion of reproductive health problems like leucorrhoea and irregular bleeding among cultivators and labourers is very small. However, the incidence of irregular bleeding for labourers is higher than cultivators indicating lack of proper medical attention by the labourers during bleeding which may be due their poor socio-economic background, overwork and lack of adequate nourishment. The percentage of induced abortion of labourers in all groups is also higher than cultivators. It is around 9 percent for labourers to the average number of ever married women as against almost 6 percent of cultivators indicating that the tendencies to terminate unwanted pregnancies and apprehension regarding birth of another girl child for labourers is more than cultivators as the literacy rate of labourers is lower than cultivators. Thus it is found that even today, women depend on abortion for controlling their fertility. Similarly, the percentage of premature delivery to the average number of ever married women among labourers is also more than cultivators in all groups. It is around 15 percent for labourers as against about 11 percent of cultivators indicating more under-nourishment and poverty among labourers than cultivators. Although the percentage of dependence on public health care system of cultivators (51.9 percent) is higher than labourers (49.26 percent), the dependence of labourers on rural bej / kabiraj and medical shop is higher than cultivators. It is about 26 percent for labourers as against almost 17 percent of cultivators indicating that the ignorance, superstitious belief and illiteracy among labourers are more than cultivators.

Depending on the parameters of economic conditions of female cultivators and agricultural labourers as noted above (selected parameter), a composite z-test has been calculated to ascertain the relative standing of each group in respect of their economic well-being. It has been found that the economic well-being of female cultivators and agricultural labourers in our study villages is almost the same as the composite z value for both the sections is almost equal i.e. around -3, although the cultivators have their own land against landlessness of labourers. It indicates subsistence level of living for both the sections of the society. In respect of groups, the composite z value for group A cultivators is maximum with + 0.85 and minimum in group C with -0.268. However, the composite z value for group B cultivators is also less than group A i.e. -

1.28. Therefore, group A cultivators has been ranked with 1st followed by group B (with 2nd) and group C (3rd) in terms of economic well being. It indicates that the economic well being of group A cultivators is better than group B and C, although the difference of the composite Z value between the groups is almost negligible

Similarly, the group A labourers has been ranked at 1st in terms of economic well-being as composite z value is maximum with 2.30 and group C villages has been ranked at 3rd as composite z value is around -6. On the other hand, group B labourers have been ranked at 2nd where the composite z value is 0.78. It can therefore be concluded that there is intra village difference of economic well being of cultivators and labourers as against absence of any inter village difference.

7.02 Conclusion:

The findings of the study and the conclusions there of are presented as follows:

I. It has been observed that the demographic characteristics of female population of Assam do not seem to reveal a clear cut picture of the physical well-being. It appears that the factors influencing at different indicators of physical well-being operate at variance at different situations. Moreover, there are regional variances of the physical well-being of women population in Assam. The physical well-being of women in Central Assam is better followed by Upper Assam and Lower Assam.

II. Majority of female main workers are cultivators and agricultural labourers. Although a significant proportion of female population is engaged in unorganized primary sector, the participation of women in the organized sector is remarkably low in Assam. Further, the female employment according to usual status has been fluctuating over the period 1993-94 to 2004-05 in both rural and urban Assam. It also appears that the percentages of unemployment among rural women in Assam are not only more than their male counterparts but also more than national average over the period 1995-96 to 2004-05.

III. There is considerable specificity to the operation in which women participate. Women are engaged in sowing, transplanting and harvesting activities. They do not participate at all in the preparation of land, spraying of insecticides /pesticides, and use of wooden herb. Though both the sections of the society spent considerable time

in crop cultivation, livestock and poultry farming, Seri culture, handloom weaving and food processing, the contribution of cultivators in terms of labour time is higher than labourers. But statistical analysis has shown that the difference in the labour time use of female cultivators and agricultural labourers among various groups of villages under study provides no evidence of difference. However, the analysis of variance of labour time use of cultivators and labourers within the two groups shows insignificant differences i.e. labour time use of cultivators is almost the same to the labourers. Thus, there are neither intra village nor inter village differences regarding labour time use of female cultivators and agricultural labourers.

IV. It has been observed that the female cultivators and agricultural labourers form the largest part of the society. The level of living of both these sections is very poor. The average income of the female cultivators is around Rs.5 lakh, whereas it is almost Rs.4 lakh for the labourers. Their level of income, consumption, assets and housing conditions, health status and sanitation facilities is very poor. Both the sections have a poor standard of living. Moreover, there are intra village inequalities regarding the consumption, assets, housing conditions and health care services of female cultivators and agricultural labourers.

V. The source base of the female cultivators and agricultural labourers is very low. Though the female cultivators are confined to their small holdings for their employment, at the same time their children are working as family labour on their holding. The farm income earned is very low. On the other hand, the labourers are dependent on their physical labour. But because of the poor source of farm business and less opportunities of employment, the female cultivators and agricultural labourers are underemployed and unemployed.

VI. Though certain parameters of economic well-beings for cultivators are higher than labourers, yet economic well-being of female cultivators and agricultural labourers are almost the same.

7.03. Suggestions:

On the basis of the existing findings, the following measures are suggested for improvement in physical well-being, socio-economic status and labour force participation of women population in Assam.

1. In view of the existing unbalanced sex ratio in most parts of the region, concerted efforts need to be made to improve the health status of women along with that of men, on the one hand, and the quality improvement of its human resources.

2. It needs no elaboration that the females in most parts of the region are largely lagging behind in terms of education than their male counterparts. Considering the vital importance of education towards upliftment of female section of the society in all spheres, effective steps need to be taken urgently by the state and Central Government for promotion of female education.

3. It follows that educational advancement in true sense among the females would result in socio-economic development in Assam, inasmuch as it helps to develop consciousness among women in respect of health and family welfare, fertility and child mortality control, and raised marriage age and gender equality. All these will make the family planning programmes a more successful one, whether women adopt them on their own or these are launched by the different implementing bodies. In any event, the role of women in this respect is very crucial.

4. The female work participation in Assam may be raised substantially through occupation based education and recognition of various household activities as viable economic activities. This would undoubtedly bring economic prosperity in Assam and also help to reduce the gender discrimination in many respects. Besides, expansion of opportunities for employment in selected areas suitable for women and recognition of their services in many unaccounted informal sectors need be made. For this, necessary training programmes on various skills including modern handicraft, weaving and farming activities have to be vigorously executed for the rural women in Assam.

5. In recognition to the direct linkage between development and women's status, it is obvious that emphasis needs to be laid on all-round socio-economic development in the region. It is because the improvement in women's status would ensure gender equality, enhancement of capacity to sustain from competition during the process of economic globalization, reduction in population growth rate and consequent sustainable balanced development across the state.

6. Raising the wage levels of casual workers both in agriculture and non-agriculture needs adequate policy attention. In this regard, stricter implementation of the Minimum Wage Act, 1948 and targeted employment generation programmes are important policy considerations. A number of studies carried out in recent years have shown that the Mahatma Gandhi National Rural Employment Guarantee Act

(MGNREGA) has had significant positive impact on rural wages. Moreover, standardization of minimum wages across various states through centrally fixed and periodically revised Statutory National Floor Minimum Wage may be an important policy initiative in this regard.

7. Special efforts should be undertaken to develop the economic condition of agricultural labourers. Land reform measures need to be strictly implemented.

8. Land is obviously the principal asset in rural areas. Access to credit, extension services, technologies, and even cooperative organizations are generally linked to land titles. The provision of land rights and access to related resources (credit, technology etc.) by female cultivators and agricultural labourers is urgently required to alter the production relations.

The present research work has unraveled a number of vital issues concerning the demographic and socio-economic characteristics of women, their labour force participation, their role in terms of labour hours particularly female cultivators and agricultural labourers, their composition of income and consumption and economic conditions. It may, however, be mentioned here that, in view of vastness of the study area and the theme, the treatment of the problem leaves further scope in a number of directions. Extensive work among various social groups, as also at micro unit levels would surely provide deeper insights into the problem. The present work on Assam has both academic value and practical significance. This work is expected to provide a precise direction to future researches in this less explored field of study in Assam but also in other parts of the country. Further more, it is needless to emphasise that the findings and suggestions of the study would also be useful in formulating effective policy and programmes for the uplift of women in the society. The proper implementation of the measure will not only reduce the gender gap in socio-economic front, but will certainly promote the process of balanced and sustainable human resource development throughout the state.

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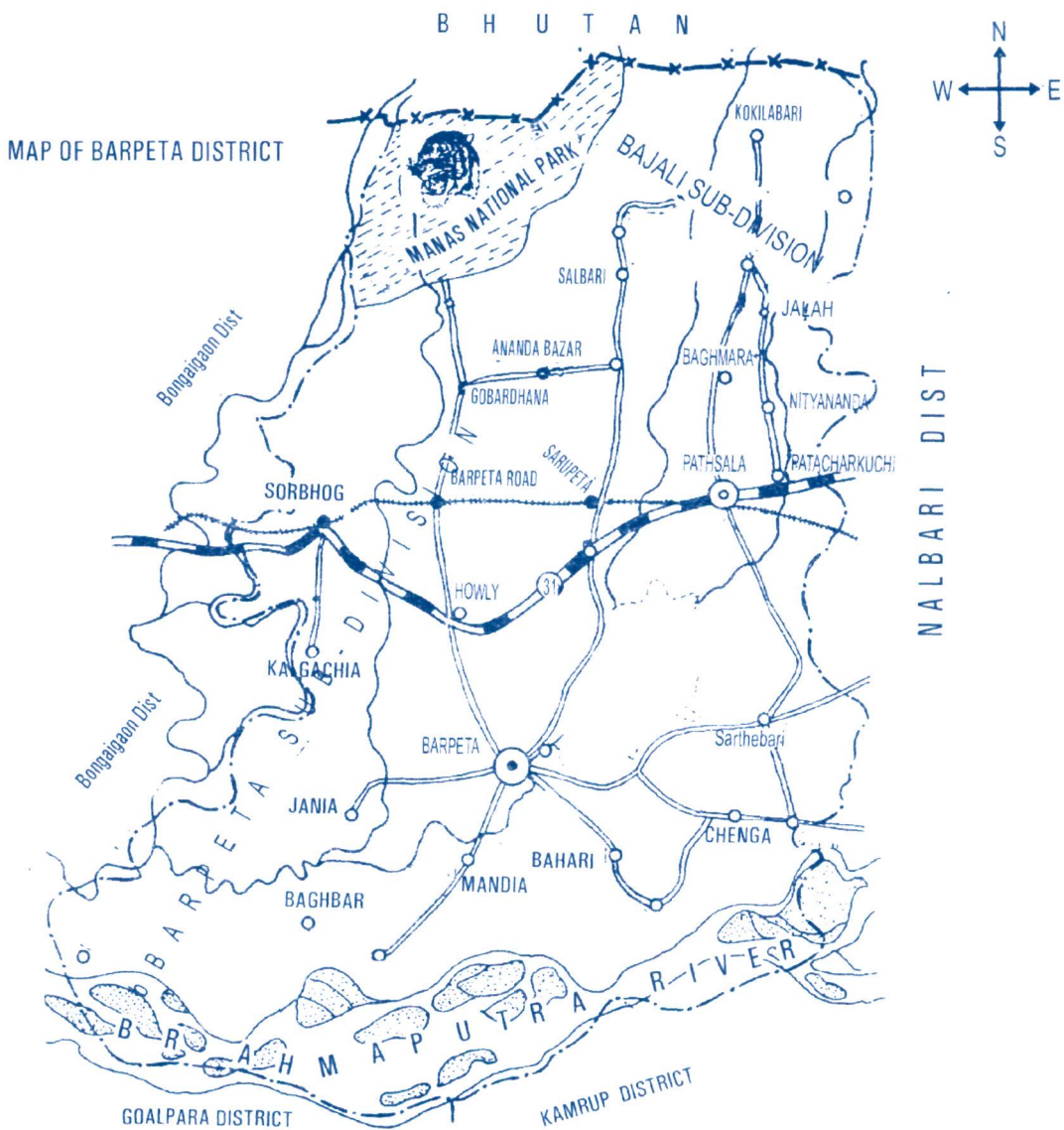
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APPENDIX - I : MAP OF ASSAM SHOWING THE POSITION OF BARPETA DISTRICT



APPENDIX - II : MAP OF BARPETA DISTRICT



APPENDIX - III : PHOTOGRPAHS



Transplanting activities.



Post harvest activities



Winnowing activities.

Hulling activities. ➤





Post harvest activities

Collecting milk



Collecting vegetables.

Collecting vegetables





◀ *A petty woman trader is busy in preparing tea for sale*



Working in spinning wheel ▶



◀ *Weaving activities*

Food Preparation ▶

