CHAPTER III

Geographical background of the study area

This chapter pertains to a discussion on physical setting and cultural setting of the study area. At the beginning a geographical profile is drawn on the Kamrup district, Assam from where the 5 Community Development (C.D.) Blocks viz. Boko, Chandrapur, Hajo, Kamalpur and Sonapur C.D. block have been identified for the study. Physical settings is discuss on the basis of relief, geology and rock, soil, drainage, climate, natural vegetation and flora and fauna where as cultural setting discuss the aspects of agriculture, infrastructural facility, demographic profile, growth of population, density of population, description of each social groups, occupation and female work participation rate.

3.1 Geographical background of Kamrup District

The district of Kamrup lies between $25^\circ43'$ to $26^\circ53'\frac{1}{4}$ North latitude and $90^\circ39'$ to $92^\circ11'$ East longitudes and covers an area of 4345 sq. km.(SOI) The greater parts of the district consists of wide plain through the lower portion of the mighty Brahmaputra which makes its way flowing a steady course from east to west. Plain portion in the south of the river is much broken up by hills. The Brahmaputra and its tributaries submerge a large area of the district almost every year causing extensive damage to standing crop and communication. Kamrup district stands at present is bounded in the east by Marigaon and Darrang district, in the north Bhutan, in the west by Nalbari, Barpeta and Goalpara district and in the south by Meghalaya state.

Physiographically Kamrup district has distinct physiographic and structural characteristics. The Brahmaputra valley is an important physiographic unit in
Assam as well as in the district also. It is a long narrow valley lying in the East-West directions in between North towards East and South directions. It is formed by new and old alluvium deposited by the Brahmaputra River and its innumerable tributaries both in North and South bank. The northern portion runs in a strip of land from the north bank of the Brahmaputra right to the Bhutan border. The district is generally a great plain comprising of a few elevated tracts lying along the Bhutan hills in the north and the Khasi hills in the south. In the north of the district, the grounds undulates considerably so much so that the edge of the plain is not easily defined. In the south of the Brahmaputra, the plain is broken up by hills. The land from swampy tracts rises up to a height of 3000 feet above mean sea level. All the hills are covered with grass, bamboos and forests among them Sal is the most important one. There are a good number of riverine low lying areas known a “beels”. They are abandoned river beds and get inundated every year. Water enters during high floods and a few feet of it stagnates the rest of the year. Above the beels are the fertile alluvial plains in which hundreds of varieties of paddy are grown. (Gopalkrishnan, 2000)

3.1.1 Geographical background of Boko C. D. Block

Boko C.D. block lies between 25° 44′ to 26° 3′ north latitude and 91° 0′ to 91° 17′ east longitude (SOI). The block is situated in the south western side of the Guwahati City. The block occupies an area of 372.44 sq km. (Census of India, 2001). Bongaon C.D. block and Goalpara district lie in the eastern and western boundary of the block respectively. Northern side has Chamaria and Gorimari Block, Southern side is surrounded by the State of Meghalaya. The National
Highway 37 passes through the block. The mighty river Brahmaputra is situated a few kilometers away in the northern side of the block.

3.1.1.1 Physical Setting

The Brahmaputra plain is a large flat region and the Boko C.D. block is lying on the southern bank of the valley. The area is dotted with scattered hillocks locally known as “tila”. The altitude of the plain never exceeds 150 m. The block may be divided into two divisions’ namely (i) northern plain region and (ii) southern foothills region adjoining with the State of Meghalaya. The flood plain zone is restricted in its spread towards western part of Kamrup district along in Boko C.D. block area. Southern foothill part has high altitude and northern part is comparatively gentle. A number of reserved forests are there in the block.

3.1.1.1 Relief

Elevation of the block remains in between 150-300 meter. The relief of the Boko area consists primarily of an agricultural plain made up of alluvial deposits formed by the river Brahmaputra and its tributaries. There are some areas of higher and lower elevations and few scattered hillocks, Beels and Swamps (Taher, 1975). The area has almost 50 meter elevation with land slope less than 10 meter per km. The built up area consists mainly of swamps (Doloni) and water logged area (Beels). They are formed by coalescence of the alluvial deposits of the river Singra and Boko. Towards south, the whole area is attached with Meghalaya plateau. Regarding elevation a very small part of the block towards the southern side is found to be located in a low lying area. Along the bank of the mighty Brahmaputra, there is an active flood plain that gets inundated frequently during summer. A number of hillocks are scattered over the area. These are primarily composed of hard rock formation of Archaean age. The pre- Cambrian gneiss complexes
forming the scattered hillocks were originally part of the Meghalaya plateau and subsequently separated by alluvial tracts. The hillocks vary in altitude ranging from lowest to highest. All the hilly tracks are covered by green forest. (Gopalkrishnan, 2000).

3.1.1.1.2 Geology

The hills in the southern boundary of the block and those isolated ones are composed of gneissic rocks of Archaen age. This group is represented by a complex of older and younger gneisses being intimately mixed up, banded, folded and later intruded by granites, apolites and quartz vein of comparatively younger ages. The portion is covered by undulating hills and as it runs northward reaches the alluvial plain of the Brahmaputra. The origin of the Brahmaputra trough on which the plain has been built up is not clearly known. Geologist, however, believe that the trough was created at the time of building of the Himalayas. The rivers that came down from the rising Himalayas in the north and the hills and plateaus of the south, in course of time, filled up the trough to give rise to the plain. The sedimentary deposits in the plain are on the average 1500m. thick and range between Disang series (upper Cretaceous –Eocene) at the bottom to Dihing series (plio-pleistocene) at the top. These are, however, overlain by the alluvial deposits of the Recent and Sub-Recent times (Taher & Ahmed, 1998). The plain region is originated from the depositional activities. The original foredeep was filled by the deposits carried by the Brahmaputra and its numerous tributaries.

3.1.1.1.3 Soil

The ground of the block contains unasserted silt, sand, pebbles, cobbles and boulders. The block rises relatively steeply to the Meghalaya hill. This is normally densely forested. The soil consists mostly of sand and pebble. Younger alluvium
and unclassified Crystalliness, mainly gneisses are the rocks types and Red loamy and Red Sandy types of soils are available in the block. (NATMO, 2001). Boko C.D.block also originates as like as the other plain region of Assam. Floods occur frequently in this area. It causes substantial variation in mechanical composition and chemical properties. This is due to the fact that the deposition of sediments varies greatly and is dependent upon the parent materials in their respective catchment areas. The textures of the top horizon of these soils are sandy loam or salt loam. Soil textures are lighter at depth, less acidic and often neutral or slightly alkaline. The ground water tables are 1 to 3 meters in some areas. In the block, old mountain valley alluvial soil is also found nearby the adjoining foothill region of Meghalaya. These soils are built of alluvial materials washed down from the hill slopes. These are mainly heavy texture soils. The surface soils are compact, very sticky and very plastic. The texture of the soils also becomes heavier along with depth. Permeability of these soils is low to very low. Besides, these groups of soil, laterised red soil are found in some parts of the block which occurs in the highland areas. (Gopalkrishnan, 2000).

3.1.1.1.4 Drainage

The Boko river and the Kulsi river are the main south bank tributaries of the river Brahmaputra in Boko C.D. block. The Boko river originates from West Khasi Hills of Meghalaya as named Umchayathi. Near Kampilodi it enters Assam taking the name as Boko river. The river Boko meet some tributaries both the left and right side like Pichalang, Pusidung, Nokadonga and Dhiting etc. The Boko river flows from south to north cutting across the middle part of the block along the Boko town. The river bifurcates into two sections to meet Patsimila tributaries one side and on the other side the Aaunihati, Sonaidong, Ballimari and the Khurkhuri
river. A good number of “beels” viz Dighalidoba, Balachra, Manuhmora Dubi, Jeni, Bagdoba, Mahim, Moranadi, Garkhaiya and Charpora etc. exist in between the river Ballimari and Boko river. The length of the Boko river is 51 km. The river flows at a rate of $46m^3$ at its maximum and $0.8m^3$ per second at minimum level. Seba is another river in between Boko and West Khasi Hills of Meghalaya. The Kulsi is another tributary flowing on the western part of the block which is known as Nalanadi at the part of origin in Meghalaya. Total watershed area of the Kulsi river is 3770 sq km. Some of the tributaries of the Kulsi river are Umchiri, Dorang, Rani, Gorgora, Batha and Bahuwa etc. (Sharm, 1993).

3.1.1.5 Climate

The state of Assam lies in the regime of monsoon climate of the sub-tropical belt. It is characterized by coolness and extreme humidity and heat. In Kamrup district also same type of climate prevails. The mean annual maximum temperature (July –August ) varies between $30^\circ$ C. to $33^\circ$ C, while the minimum temperature (December – January) ranges from $6^\circ$ to $12^\circ$ C. The annual average rainfall is about 2300 mm. which varies from 60 mm. during winter (December-February) to 1460mm during monsoon (June-September) followed by 640mm. during summer (March-May) and 140 mm. during post monsoon (October-November) period. In other words, maximum amount of rainfall is confined to the months of June, July and August, while practically rainless months are December, January and February. An average annual rainfall of above 2000mm, a low rate of evaporation and fertile alluvial soils of the Brahmaputra valley confer the district ideal conditions for the development of agriculture besides encouraging vigorous growth of tropical and sub-tropical vegetation. More than 75% of the total annual rainfall is concentrated in the south-west monsoon period. The balance falls mainly
during the pre-monsoon period. Minimum rainfall of 2.5 mm occurs in 105 days of a year. Humidity remains high, at about 80% for most of the year. It comes down to about 65 to 70% in the period between January and April. (Gopalkrishnan, 2000).

The cold weather period extends from November to February. Except for occasional showers, there are practically no rains during this period. Mists and fog occur during nights and early part of morning. Frosts are unknown in this area. The period from March to May represents the hot dry season, the earlier half of this season being relatively dry. During this latter half of the season there occur quite a few violent thunder storms with brisk shower. These storms cause considerable damage to the forest resulting in wind fallen or mid broken Sal trees. The spacing of mother trees in FBI areas can be severely upset due to the effect of such storms. Occasionally, all immature seeds of Sal in the area are blown off the trees by such storms. Data on rainfall, temperature and relative humidity in respect of Guwahati meteorological station, Barjhar and data on rainfall in respect of some other localities in the division are furnished in the tables followed. From the data it is apparent that in locations nearer to the main blocks of forests the amount of rainfall is more. Annual rainfall is more than 2000 mm and annual temperature is 25 Degree Celsius. (NATMO, 2001). Following tables indicates the maximum and minimum temperature, relative humidity and rainfall and number of rainy days of Guwahati station of Kamrup district 1995. From the following table it is found that the maximum temperature is 36° C in the September month and minimum temperature is 8.7° C. in the January month for the Guwahati station. The highest relative humidity, rainfall and maximum number of rainy days are seen 89.7%, 565.5 mm. and 23 days respectively in the month of July for the year 1995. (Table:
3.1). This climatic data is used to understand the climatic scenario of the identified C.D. block.

**Table 3.1: Maximum and minimum temperature, relative humidity and rainfall and number of rainy days of Guwahati station, Kamrup district, 1995.**

<table>
<thead>
<tr>
<th>Months</th>
<th>Temperature (in degree celsius)</th>
<th>Relative Humidity (in percentage)</th>
<th>Rainfall (mm.)</th>
<th>No of rainy days</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Maximum</td>
<td>Minimum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>January</td>
<td>29.0</td>
<td>8.7</td>
<td>88.1</td>
<td>1.2</td>
</tr>
<tr>
<td>February</td>
<td>27.8</td>
<td>9.7</td>
<td>78.3</td>
<td>21.2</td>
</tr>
<tr>
<td>March</td>
<td>30.0</td>
<td>9.4</td>
<td>73.5</td>
<td>87.0</td>
</tr>
<tr>
<td>April</td>
<td>30.9</td>
<td>16.2</td>
<td>82.7</td>
<td>342.3</td>
</tr>
<tr>
<td>May</td>
<td>34.1</td>
<td>20.2</td>
<td>79.5</td>
<td>106.5</td>
</tr>
<tr>
<td>June</td>
<td>35.3</td>
<td>22.6</td>
<td>84.1</td>
<td>193.0</td>
</tr>
<tr>
<td>July</td>
<td>34.5</td>
<td>24.8</td>
<td>89.7</td>
<td>565.5</td>
</tr>
<tr>
<td>August</td>
<td>35.3</td>
<td>21.0</td>
<td>81.7</td>
<td>66.8</td>
</tr>
<tr>
<td>September</td>
<td>36.0</td>
<td>22.4</td>
<td>84.2</td>
<td>203.7</td>
</tr>
<tr>
<td>October</td>
<td>32.1</td>
<td>18.8</td>
<td>85.9</td>
<td>165.1</td>
</tr>
<tr>
<td>November</td>
<td>30.6</td>
<td>15.2</td>
<td>83.6</td>
<td>0.3</td>
</tr>
<tr>
<td>December</td>
<td>27.1</td>
<td>9.8</td>
<td>89.3</td>
<td>0.3</td>
</tr>
</tbody>
</table>


### 3.1.1.6 Natural vegetation

Tropical Deciduous forest is found in Boko C.D, block where the average annual rainfall is 80 cm. to 200cm. There are many reserved forest in the area covering dense and valuable forest. Some of the reserved forests are Jharikhupi, Singra, Lakrapara, Momon, Barjuli, Nampathar and Gizang etc. The common species of tropical deciduous plants are Sal, teak, gamari, simul, khoir, autenga, jack fruit, kadam, siris, arjun, silikha, bhomora, etc. Most of the reserved forest are rather vague e.g. North-Westerly’ slightly North of East, between lowlying cultivated land and foothills’, natural boundary at the foot of the hills, north west
corner of village land etc.. The forests on the plain are located in alluvial terraces locally known as “Taris” and these are crisscrossed by numerous narrow winding, low-lying tracts which are known as ‘Julis’. The height of a Tari may vary from 1 meter to 15 meter from the neighboring Julis. The Taris are usually the results of gradual cutting out and leveling off the various spurs and sub spurs of the hilly formation into the plains and the Julis are continuation of the valley between these spurs. Although such vague descriptions might have been considered adequate at the time of the original constitution of these reserves, for meeting the existing circumstances these are entirely unsatisfactory and verifications on ground with such descriptions yet to be completed. Economically the most important products of the deciduous forest are sal and teak. These two species of plants supply hard wood for construction of building, bridge and railway sleepers. Large herbs of cattle in the adjoining villages of the reserved forests are grazed on the forest grasslands. There are no professional grazers in the reserved forest areas, but during the winter months a few hard come down from the hills of Meghalaya and are permitted to graze in the forest of Kulsi range. (Forest report, 2010)

3.1.1.7 Flora and Fauna

Most of the reserved forests of Kamrup district are surrounded by habitations due to the constant disturbances including poaching larger animals have practically been wiped out or have moved elsewhere from all such areas. Some of animals existing, in the accessible areas are the Rhesus of Assamese Macaque, Jungle cat, Civets, Mangoos, Jakal, Grey Mush-shrew , three striped squirrel, Mole rat, Field mouse and occasional leopards. Monitor lizards are also occasionally seen. The animals found are Sambhars, barking deer, wild bear, goat antelope , occasional gaur, elephants , porcupine, Malayan, gian, squirrel, sloth
bear, wild dog, occasional tiger common and capped langur, leopard cat, hoolock gibbon, etc. There are many reserved forest and other forest areas are found in the block. In these forests different types of species are observed. The greatest adverse factor operating on the wild life now is the shrinkage of habitant due to rapid expansion of human habitation and subsequently cultivation land; In this respect the large scale opening up of the ‘juli’ lands in the forest for cultivation, particularly during the sixties, was one of the most harmful instances as far as wild-life is concerned. The areas containing the ‘wet’ miscellaneous formations not only harbor a large variety of birds and smaller animals but also provide sustenance to the herbivorous and others. (Forest report, 2010).

3.1.2 Cultural Setting of the Boko C.D. block

The cultural setting of the study area is illustrated on the basis of agriculture, infrastructural facility like transport and communication, educational, health and drinking water facility, demographic profile, growth of population, density of population, description of the social groups, occupational structure and female work participation rate of the block.

3.1.2.1 Agriculture

Growth in agriculture is largely determined by the area available for cultivation. In Assam, of the total cropped area, 75% area is under food crops and 25% under non-food crops. Rice, maize, wheat, small millets and other cereals are important cereal crops. Pulses, mainly gram and oil seeds mainly rape and mustered, linseed and castor are available in this area. Besides, there are sugar cane and potato. Other important crops are tobacco, sweet potato, chilies. Like Assam, in the Boko C.D. block also Rice is the principal food crop and is grown
extensively. Its cultivation follows mainly the traditional farming practices although it had tended gradually to be intensive. There are three varieties of rice, viz., winter rice (Sali and bao), summer rice (ahu) and spring rice (boro), besides a number of varieties. “Ahu” (March-April to June –July) paddy is also raised by the farmers to a certain extent where there is a ready source of perennial water nearby spring paddy (Boro) is also raised. (Gopalkrishnan, 2000). Mustard wherever feasible, is invariably raised. During winter some amount of potatoes and vegetables are also raised by the villagers. Some of the enlightened farmers have gone for cultivation of high yielding varieties of rice in which three crops can be raised in a year, and keeping the cultivator engaged throughout the year. Low lying lands in the ‘julis’ in the forest have been brought under the plough and paddy is raised in Boko C.D. block. (Forest report, 2010).

The Sali variety of winter rice is grown by the transplantation method while bao rice is sown by the broadcast method. Bao rice is generally grown in low flood plain area. Ahu rice is mainly sown by the broadcast method during February to April. The spring rice (boro) is sown by the transplantation method in October-November and is harvested in February / March. Rice occupies nearly 2/3rds of the total land under cultivation. Winter rice i.e aman or Sali is followed by Ahu or Aus. A third crop, spring rice or Boro, is sown and harvested in February and March. Aman or winter rice is the most important crop. The seedlings of Aman rice grown in the nursery and are transplanted in the months from July to September. The crop is harvested in November or December. The period of transplantation is critical as both sunshine and copious rainfall are necessary. The transplanted paddy is grown on land which is neither too high to retain moisture, nor too low to be inundated by the early rains. On a still higher level, where water
drains off quickly, ahu or Aus, is grown. Pulse or sugarcane are also cultivated on high land. Bao paddy or deep-water paddy is grown in areas flooded in early rains and remain submerged until the water recedes in September. Inundation in normal circumstances does not harm the crop. In fact, with the rising of water, this crop adjusts itself by accelerating its growth. (Gopalkrishnan, 2000).

3.1.2.2 Infrastructural facility

Infrastructural facilities of the study area are discussed on the basis of Transport and communication, Educational facility, Health facility and Drinking water facility.

3.1.2.2.1 Transport and communication

The Boko C.D. block is well connected by the National Highway 37 from east to west and divides the block into almost two equal sections. But yet there are many transport and communication problem in the block. The road network in the northern section of the block is relatively more improved than that of the southern side. Though the river Boko and Singra etc. are some important tributaries of river Brahmaputra yet the water navigation is very poor in the block. The mighty Brahmaputra flows through the block from east to west and provides a very important means of water transport for the local navigation. From 2001, the block is connected with the rail line from east to west. So the block is well connected by both the rail and road network. In some case the river transportation is also utilized by the people when necessary. Regarding the communication facility it is seen that out of the total villages in the block 11% villages have post office, 8.6% villages have market and hut and 45% villages have bus stop facilities. (Table: 3.2)
### Table 3.2: Communication facility in the identified C.D. blocks, 1991

<table>
<thead>
<tr>
<th>Name of the C.D. Blocks/district</th>
<th>Number of villages having Communication facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Post office</td>
</tr>
<tr>
<td>Boko- Bangaon C.D.block</td>
<td>21 (10.65)</td>
</tr>
<tr>
<td>Chandrapur C.D. block</td>
<td>5 (15.15)</td>
</tr>
<tr>
<td>Hajo C.D. block</td>
<td>22 (19.13)</td>
</tr>
<tr>
<td>Kamalpur C.D. block</td>
<td>15 (14.70)</td>
</tr>
<tr>
<td>Sonapur C.D. block</td>
<td>10 (6.99)</td>
</tr>
<tr>
<td>Kamrup District (rural)</td>
<td>186 (14.30)</td>
</tr>
</tbody>
</table>

Source: Census of India, 1991. District census Handbook, Kamrup, Figure in the parenthesis indicates percentages

### 3.1.2.2 Educational Facility

The department of education started National Literacy Mission Programme to improve the educational status of rural women. The focus of the mission is on rural areas with a special concern for women and persons belonging to schedule caste / schedule tribes. (Singh & Bose, 1991). Apart from programmes run by government agencies a large number of voluntary agencies will be identified which will help in Adult education an continuing education programmes. The survey done by Gyan Vidgan Samity, Assam, on the DPEP functioning district reveals that most of the schools lack in all infrastructure facilities in the rural areas. Many schools have no walls, doors, windows, desks and benches or even black boards.

Education forms the utmost important tool for human development. Educating the people especially the women folk must be given the topmost priority for improving their status in terms of social and economic equality. This will go a long way in
transforming the traditional roles of housewives to contribution of national income and decision makers. Efforts are to be made to ensure greater enrolment and retention of girls in schools and import non-formal education to women. In spite of continuous efforts to improve the enrolment of girl and provide adult education for women, their educational status remains the same. Dropout rates are still higher for females than the males. (Sone, 2000)

Formal educational qualifications are strongly desired for attaining improved status in the society. There are 217 primary school in Boko C.D. block followed by 38 Middle school and 25 High school. There is no Higher Secondary school (1991 census) and only 1 College is found in the block. In the block 6 Adult literacy centers are there and 20% villages have no educational institute. (Table: 3.3)

Table: 3.3 Educational Institute in the identified C.D. Blocks: 1991

<table>
<thead>
<tr>
<th>Name of the C.D. blocks</th>
<th>Total no of inhabited Villages</th>
<th>Educational Institute in the blocks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Primary school</td>
<td>Middle school</td>
</tr>
<tr>
<td>Boko C.D. block</td>
<td>197</td>
<td>217</td>
</tr>
<tr>
<td>Chandra Pur C.D. block</td>
<td>33</td>
<td>34</td>
</tr>
<tr>
<td>Hajo C.D. block</td>
<td>115</td>
<td>202</td>
</tr>
<tr>
<td>Kamalpur C.D. block</td>
<td>102</td>
<td>165</td>
</tr>
<tr>
<td>Sonapur C.D block</td>
<td>143</td>
<td>126</td>
</tr>
<tr>
<td>Kamrup (rural)</td>
<td>1300</td>
<td>1958</td>
</tr>
</tbody>
</table>

Source: Census of India, 1991. District Census Handbook, Kamrup, Figure in the parenthesis indicates percentages
3.1.2.2.3 Health Facility

Regarding health facility, public health center or hospital are not found in each village of the identified C. D. block. Yet some kind of medical facilities are available in the villages i.e. Dispensary, Maternity Center, Primary Health Center, Family Planning Center, Primary Health Sub-center, Community Health Workers and others centers etc. Primary Health Center (PHC) are located at an average distance of 1 to 10 km. from the village. As per information gathered from PHC there is no HIV and Leprosy patient in the villages. Maleria patient are also reared. Other facility found in the sample villages are Pulse polio, Baby free vaccine, ASHA karmee etc. In Boko C.D. block, other health facilities includes 7 Dispensaries, 3 Hospitals, 2 Primary health centers, 14 Primary health sub-centers and 25 Community Health workers. (1991, census). (Table: 3.4)

3.1.2.2.4 Drinking water facility

There are different source of drinking water facility in the villages of the Boko C.D. block which are tap, well, tank, tube well, river and fountain etc. Majority villages i.e. 97% depend on well followed by 76% villages depend on tube well for drinking water. Tape water facility is very nominal where only 3% villages are avail in this facility. (1991 census), (Table: 3.4).

3.1.2.3 Demographic profile

The Demographic profile of the Boko C.D. block are discussed highlighting some of its important characteristics like population growth, decadal variation of population and density of population etc. There are 138 villages (Table: 3.5), with 18628 households and 11 Goan Panchayats in the block. The total population is 99935 persons out of which (50892person) 50.92% are male and
(49043 person) 49.07% are female. (2001 census). The Sex ratio is found that 964 relatively a fact that the Schedule Tribe population is having relatively more female population per thousand male as compared to rest of the social groups in the study. There is no urban population in the block according to 2001 census. The Schedule Tribe population in this block is (51115 person) 51.14% against the district average of 9.93% and the SC. Population are only (2584 person) 2.58% (2001 census). (Table: 3.6)

3.1.2.3.1 Growth of population

In Boko C.D. block the total population increases from 56364, 84155 and 99935 person in 1971, 1991 and 2001 periods respectively. In 1991 periods the area of the Boko block was greater than present area. In 1991 the total inhabited villages were 197 which was higher than that of the total villages during 2001. During 1991 Bongaon subdivision was included in Boko C.D. block and so it comprised of relatively more number of villages. The growth of population in the Boko C.D. block depicts gradual increases during the last three decades. In terms of decadal variation of population in percentage it was 43.3 % sharing 1971 to 1991 and 18.75% during 1991 to 2001. (Table: 3.5)
Table 3.5: Population growth, density and Decadal variation of population in the identified C.D. blocks (1971 to 2001)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Boko C.D. block</td>
<td>197 138</td>
<td>56364 84155 99935</td>
<td>49.31 18.75 334.01 327.44</td>
<td></td>
</tr>
<tr>
<td>Chandrapur C.D. block</td>
<td>33 38</td>
<td>15530 30376 37746</td>
<td>95.60 24.26 394.49 487.80</td>
<td></td>
</tr>
<tr>
<td>Hajo C.D. block</td>
<td>115 91</td>
<td>129996 188100 163808</td>
<td>44.70 -12.91 460.33 641.63</td>
<td></td>
</tr>
<tr>
<td>Kamalpur C.D. block</td>
<td>102 66</td>
<td>93982 134445 82667</td>
<td>43.05 -38.51 449.9 616.82</td>
<td></td>
</tr>
<tr>
<td>Sonapur C.D. block</td>
<td>143 140</td>
<td>62825 95860 124043</td>
<td>52.58 29.40 330.55 427.48</td>
<td></td>
</tr>
<tr>
<td>Kamrup district.</td>
<td>1300 1393</td>
<td>120690 200007 252232</td>
<td>65.72 26.11 460 581.00</td>
<td></td>
</tr>
</tbody>
</table>


3.1.2.3.2 Density of population

The density of population in the Boko C.D. block is 372.44 persons per sq km during 2001 which shows a wide variation among the villages. The village Mairachara has a lowest density of population of with 3 person per sq. km. whereas Garuduba has the highest density of population of 2133 person per sq. km. In this context a comparative analysis on density of population has been taken up. The villages of the block are grouped into 5 category based on population density like Low (below 450 person), Lower Medium (450 to 900 person), Medium (900 to 1350 person), Upper Medium (1350 to 1800 person) and High (above 1800 person). In the block the density of population, in terms of percentage of villages fall under different density categories which varies from as low as 0.72 % in high density category followed by 5.07%, 1.44%, 30% and 63.31% for Upper medium, Medium, Lower medium and Low density category. (Table: 3.9).
3.1.2.3.3 Description of Schedule Tribe population

Boko C.D. block is considered to represent the Schedule Tribe social group which comprises of the Boro and Rabha tribes. They are plain tribe and their social structure is different from the other tribes of Assam. In Boro society father is the sole guardian of the family. After death of the father the eldest son inherits the right exercised by his father. Entire property of the family is distributed among sons, daughter have no, right to property. When there are sons in a family a portion of the property is given to the wife while distributing the property among sons. After the death of the mother the portion of property given to her goes to the son who looks after her and takes care of her till her death. Sons are separated from their parents after marriage. The unmarried daughters remain under the control of their parents till the marriage. The mother is more responsible for her daughter’s well being than the father. However, the general responsibility of the entire family lies on the parent who is the sole guardian of a family. After the death of the father, the eldest son of the family bears the responsibility of the entire family. However, the mother is to bear the responsibility of the family after the death of her husband if the son is minor. In the Boro society joint family is very rare. Separation is very common after the marriage of the grown-up sons. The quarrel among the wives of sons leads to separation from the mainstream of the family. To performe a marriage ceremony the presence of two young girls known as Bairathi is essential. They can never be replaced or substituted by the male. The Kherai puja is one of the most important religious festivals, performed with the help of Daudini who must be a young and unmarried girl. (Hazarika., 2007).

The wife kept the custody of granary (Bakhri) and husband could not dispose of any portion of the stock of paddy or any crops. Agriculture is the main
source of livelihood of the Bodos. Without women falk agriculture is impossible for a Bodo family. Main role is played by female members of the family during the time of cultivation. A ritual performance is done by female guardian of the family while plantation of paddy starts. Again, when the paddy is fully ripe and the time of harvest comes, a little portion of bundle of ripe paddy is brought to the house by the female guardian of the family. Weaving is the compulsory activity for the Boro women. It is said that a girl who is not expert in weaving may not be selected for the marriage. Hence a young Boro girls learns how to weave from the early age. The young girls and married women of the family earn money by selling different clothes woven by them and thus help the family. Every Bodo girl is bound to weave ‘Dokhn’ for her own use.

The Rabha women are also active and dutiful. They could bring about affluence and happiness to the Rabha households by their skill, sincerity and self-reliance. They are the chief assistants of their husbands in cultivation and animal husbandry. They are in general healthy and strong. In the times, they cultivated cotton plants in the hills and span threads from it and wore beautiful clothes for domestic use. They also knew the art of dyeing. Most of their dresses were woven by themselves in their own looms. For the purpose of own consumption and use in the traditional rituals the Rabha women prepare Penkur (medicine of wine) and Chakato (a kind of intoxicated liquor). Like all other women, the Rabha women also have a taste for wearing different kinds of jewellerys. The manner in which they wear their jewellerys shows that they have much stronger sense of good taste than any women in other communities. (Hazarika, 2007).
3.1.2.3.4 Description of Sample villages

In Boko C.D. block the sample villages i.e Dakhilipara village from Lower Medium group (LMV) and Agchia village from Upper Medium (UMV) group have been selected for the study. The Dakhilipara and Agchia villages have an area of 0.86 sq. km. and 1.51 sq. km. with a households strength of 67 and 179 respectively. The total population of Dakhilipara village is 323 persons, of which 48.60% (157) are male and 51.39% (166) are female. Almost same situation prevails in Agchia village. The density of population in both the villages are 376 and 583 person per sq. km. Sex ratio in terms of female per thousand male in the villages are 1059 and 926. There are no Schedule Caste people in Dakhilipara village. Schedule Tribe population dominants both the villages comprising of 95.7% (309) and 69.11% of total population. (Table: 3.7).

3.1.2.3.5 Occupation

The economic condition of a country or a region can be understood to some extent, by looking at the proportion of its total population engaged in various economic activities. In the 1971 census, population was divided into two categories, viz workers and non-workers. The workers were further classified into nine broad industrial categories viz.(i) cultivators (ii) agricultural labours (iii) livestock, forestry, hunting, plantations , orchards and allied activities (iv) mining and quarrying (v) manufacturing, processing, service and repair (vi) construction (vii)trade and commerce (viii) transport, storage and communication and (ix) other services. In the 1991 census again divided main workers into (i) cultivator (ii) agricultural labours (iii) household industry etc. and (iv) other workers.

According to the census of 2001, the working population constitutes 66.38% of the total population of Kamrup district. Table 3.9 shows composition of
main workers, marginal workers and non-workers of the Boko C.D. block. As revealed in table 3.9 non-workers constitute highest share of total population i.e. 64.3% followed by 25.8% of main workers and 9.9% of marginal workers. The female main workers constitute a meager share of total female population i.e. 5.2%. The female participation in work seem to be very poor with 11.1% female total workers and 5.9% marginal workers and 5.2% main workers. In other terms the low participation rate of women in the workforce is visualized from female non-workers of 77.3%. (Table: 3.8).

**Table: 3.8: Main workers, marginal workers and non-workers in the identified C.D. Blocks, 2001**

<table>
<thead>
<tr>
<th>Name of the C.D. block</th>
<th>Main workers (%)</th>
<th>Marginal workers (%)</th>
<th>Total workers (%)</th>
<th>Non-workers (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[person male]</td>
<td>[person male]</td>
<td>[person male]</td>
<td>[person male]</td>
</tr>
<tr>
<td>Boko C.D. block</td>
<td>25.8</td>
<td>20.6</td>
<td>9.9</td>
<td>5.2</td>
</tr>
<tr>
<td></td>
<td>5.9</td>
<td>36.7</td>
<td>24.6</td>
<td>11.1</td>
</tr>
<tr>
<td></td>
<td>4.0</td>
<td>64.3</td>
<td>51.7</td>
<td>77.3</td>
</tr>
<tr>
<td>Chandrapur C.D. block</td>
<td>10.4</td>
<td>8.9</td>
<td>2.1</td>
<td>1.4</td>
</tr>
<tr>
<td></td>
<td>9.4</td>
<td>12.5</td>
<td>9.9</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td>1.7</td>
<td>66.9</td>
<td>50.5</td>
<td>85.6</td>
</tr>
<tr>
<td>Hajo C.D. block</td>
<td>54.9</td>
<td>47.3</td>
<td>12.3</td>
<td>7.6</td>
</tr>
<tr>
<td></td>
<td>5.7</td>
<td>67.2</td>
<td>53.0</td>
<td>14.2</td>
</tr>
<tr>
<td></td>
<td>6.6</td>
<td>70.1</td>
<td>54.2</td>
<td>86.9</td>
</tr>
<tr>
<td>Kamalpur C.D. block</td>
<td>35.3</td>
<td>31.8</td>
<td>8.5</td>
<td>3.48</td>
</tr>
<tr>
<td></td>
<td>4.7</td>
<td>43.8</td>
<td>36.5</td>
<td>7.3</td>
</tr>
<tr>
<td></td>
<td>3.8</td>
<td>71.3</td>
<td>54.2</td>
<td>90.1</td>
</tr>
<tr>
<td>Sonapur C.D. block</td>
<td>33.8</td>
<td>28.4</td>
<td>11.2</td>
<td>5.37</td>
</tr>
<tr>
<td></td>
<td>4.9</td>
<td>44.9</td>
<td>33.3</td>
<td>11.6</td>
</tr>
<tr>
<td></td>
<td>6.3</td>
<td>63.7</td>
<td>47.8</td>
<td>80.7</td>
</tr>
</tbody>
</table>

Source: Census of India, 2001
3.2 Geographical background of Chandrapur C.D. Block

The block lies in between $26^09'\text{ to } 26^016'$ north latitudes and $91^0\text{ to } 92^04'$ east longitudes. SOI. It lies in the Southern bank of the river Brahmaputra and North –Eastern side of Guwahati City. Dimoria block lies in the Southern side and Eastern side is surrounded by Morigaon district and Dimoria block.

3.2.1 Physical setting

The Brahmaputra plain is the result of both aggradational and degradationl activities. The width of the main plain becomes narrow (70km.) near Guwahati with the Meghalaya plateau skirting the Brahmaputra. Thereafter the plain widens as the Meghalaya plateau receds southward. Though the Chandrapur block is lying in the Brahmaputra plain region of Kamrup district yet it has presence of some isolated hillocks. Towards the east of the block there are Mayang hillocks and to the west there are Chunchali hillocks. All these hillocks are made of hard pre-Cambrian granite and granite –gneiss. The gradient of the plain is extremely low. The average gradient of the plain is only 14 cm. per km where as Guwahati(480 km. down stream) stands at 50.5 m. (Taher, 1998). The Brahmaputra flood-plains exist in the bank except at Chandrapur-Guwahati area.

3.2.1.1 Relief

Both the side of the river mighty Brahmaputra elevation is less than 50 meter. In the eastern part of the district i.e in Chandrapur block altitude in between 50 to 150 meter. (NATMO, 2001). Three types of physiographic units are found in the block like the hillocks, the plains and the marshy land. Elevation is more than 150 meters and land slope is less than 10 meter per kms. The northern side of the
block is surrounded by the mighty river Brahmaputra with new alluvial deposits. Northern side is a plain land inundated by flood during summer. Southern side has more hillocks with dense forest and low inhabitants. Thakurkuchi N.C. village has a large area in the southern hillock totally uninhabited.

### 3.2.1.2 Geology

Geologically the Brahmaputra is a very younger river and its present configuration took shape only during the Pleistocene and recent times. (Bhagabati, Bora, Kar 2001). Chandrapur block is located in the southern side by the mighty river valley. The block is developed over the foredeep in between the peninsular mass and the Tethyan Geosyncline. The Tertiary deposits consisting mainly of sandstones, shale, grit, conglomerate and limestone and the Quaternary ones consisting of alluvial sediments comprising of pebbles, sand, silt and clay. This region is trending almost east-west ‘ramp valley’ or a sag in the crust formed tectonically during Miocene period. Occurrence of iron-ore, quartz and feldspar deposits is reported from the outlying hilly portion in the south. Economic importance of some of these minerals is under investigation. The granite and gneissic rocks of the scattered hillocks are used as road ballast and building materials.

### 3.2.1.3 Soil

In Chandrapur block mostly alluvial group of soil are found. New alluvial soils are found in active flood plain areas. On the other hand, the old alluvial soils occur above the annual flood level. The old alluvial soil is more acidic than the new alluvial soils. Being the soils of the submontane tract, particularly along the foothills, contain unassorted sand, pebble and boulder not suitable for cultivation. However, occurrence of heavy rainfall on the windward sides of the hills has made
the soils more acidic. Most of the soils of the hills are reddish –loam. The soils are rich in organic content and river valleys are very productive. The block is covered by gneisses types of rocks and soil condition are red loamy and older alluvial type. Hilly tracks are covered by forest resources. (NATMO, 2001).

3.2.1.4 Drainage

Digaru is a main tributary of the river Brahmaputra in Chandrapur C.D. block. After crossing the Sonapur block the river enters to Chandrapur block with Chimuk tributary near Niz-panbari village. At this point the Digaru is though very close to the river Kalang, yet it does not meet Kalang and parallely moves towards the railline to north-west direction. From here both the rivers flow 5 km. and met together at Digarumukh. The highest and lowest water flow from the river Digaru is 230$^3$ meter and 16$^3$ meter respectively. Amchang is another tributary of river Brahmaputra originates from Amching Tea garden. Near Bonda it meets Pitoni beel, Potabeel, Juguli beel and Hahchara beel etc. So there are two main tributaries namely Kalang and Digaru and few sub-tributaries are found in the block. Besides some beels and swamps are there in the block. (Sharms, 1993).

3.2.1.5 Climate

Like the other parts of Assam the Chandrapur block is also falls under the regime of monsoon climate. The climate of this region is characterised by heavy rainfall accompanied by high percentage of relative humidity and relatively low temperature in summer, and drought with very low temperature in winter. Though the climate of this region is identified as tropical monsoon, the physiographic controls and local influences have characterised the climate into a sub-tropical or extra-tropical monsoon type. The weather and climate of the region assumed regional characters which cannot be compared with area lying in the same
latitudes. Like the district, there also four climatic seasons may be identified – pre-monsoon, monsoon, retreating monsoon and dry winter. Annual rainfall is 1600 mm and annual temperature is almost 24 degree calculus. (NATMO, 2001).

### 3.2.1.6 Natural vegetation

The river banks are mostly made of sandy soil. This type of soil cannot retain water for a long time. The plants that grow on the river banks are known as Riperian vegetation (Taher, 1998). The Riperian vegetation of Chandrapur C.D. block is mostly tall grass. The famous wild life sanctuary Pabitara is located eastern side and near by the block. Along with grasses the areas also contain simul, khoir, karoï, kadam, and local plum (zyzyphus) trees. Apart from these, bamboo, canes and a variety of fruit trees found in the region. Some marshes and swamps are also there in the Chandrapur C. D. Block area. The northern part of the block is surrounded by the mighty river Brahmaputra and the river banks remain under water during the rainy season. The permanent water-level is not very low. Therefore, they are not beyond the reach of the grass roots. The riparian grassland cover extensive tracts where the river banks are low. High kahua, nal, khagari, ulukher, kahiban are found in such grasslands. Simul. Khoir, kakoi, kadam and local plum trees are also found to grow along with the grasses. A number of marshes and swamps are found in the block. The water bodies support various types of aquatic and marshy grasses and some other plants such as lotus, lily, waterwort, water hyacinth, meteka, kalau, seluk, taro etc. Besides on the frings of the beels especially in hilly tracts are found khakan, hallokh, ajar etc. trees. Moreover, bhet, aram family, aracea lemma, harkota are found. (Taher & Ahmed, 2005).
3.2.1.7 Flora and Fauna

The avifauna of the areas is rather rich. Some of the birds are jungle crow, trice, pie, grey, tit, nut-thatej, several varieties of babber, different types of bulbul, busched, robin, thrush, fly catcher, shirke, cuckoo, drango, warbler, myna, munia, sparrow, swallow, snip, wagtail, sunbird, flower-pecker, wood-peaker, barbet, how cuckoo, parakeet, beacates, king-fisher, owl, vulture, kites, quail, tern, plovers, moorhen, storks, heron, teal and pochare, shoveller, spot-bill, pintail, bareheaded geese, darter, pelican, cormorant, sand-piper, red-jungle-fowl, red twille-dove, blue rock-pigeon, bronge winged bone, common green pigeon, fishing eagle, hawk eagle, night jar, blue joy, oriole, kool, weaver bird, crow pheasant, parrot, hornbill etc. Besides birds many wild and domestic animals are also found in the block. There is some kind of mammals and reptiles are also observed in the block. The repercussions of such shrinkage of habitual has been felt in recent years in the shape or depredations by wild elephants (herds of whom roam about in some of the reserved forest and cross over to adjacent areas in their wanderings) in the cultivated areas, even in thickly populated locations. (Forest Report, 1991).

3.2.2 Cultural Setting of Chandrapur C.D. block

Cultural setting of Chandrapur C.D. block is discussed in terms of agriculture system, infrastructural facility like transport and communication, educational, health and drinking water facility, demographic profile, growth of population, density of population, description of schedule caste population, occupation of the people and female work participation rate of the Chandrapur C.D. block.
3.2.2.1 Agriculture

In the Chandrapur C.D. block different types of agricultural activities are found. Rice is the major dominant staple food crops in the block. Whole the northern side is a low lying belt. So flood occurs frequently in the area whole of the year. That is why it is very difficult to practice the summer rice i.e. Sali rice. So the people have adopted the Ahu, Bao and Boro rice cultivation in Pre –monsoon and spring season. The Bao rice is essentially a variety of long stemmed rice that can withstand a long period of deep and stagnant water. Its seeds are broadcast in spring when the ground remain dry and is harvested in winter when water that accumulates over the ground in summer has dried up. Boro rice is grown in the lowlying area of the block. It is transplanted in the months of December and January in the lowlying areas where water levels goes down to a few centimeters by this season. It is a quick-growing variety and can be harvested in April and May before the water level rises. Besides rice other crops like pulses, different kind of vegetables, sugarcane, banana, battle nut, arrecanut, coconut etc are produced by the villagers. Animal husbandry, piggery, poultry keeping, fishing etc. are some of the allied activities of the people in the block. Jute is another important cash crop in the lowlying plains of the region.

3.2.2.2 Infrastructural facility

Infrastructural facilities of the study area are discussed on the basis of Transport and communication, Educational facility, Health facility and Drinking water facility.
3.2.2.2.1 Transport and Communication

The Chandrapur C.D. block is situated only 34 km. distance from the Guwahati city. The transport and communication system should be very developed in the block. But in real sense it is not like so. The state highway passes through the block and it connects Sonapur C.D. block towards eastern side and western side with Guwahati city. The main Railway line passes through the block parallely with the state highway. So the block is well connected by both the railways and the roadways. The villages are connected with the matelled and non-matelled road. But the connectivity network is not satisfactory in the block. Among 38 villages 15% (5), 3%, 12.12%, 57%, 15% and 6% villages have facilities like post office, telephone connection, market or hut, bus stop, railway connection and navigable water supply respectively. As the topography is rugged with numerous hills and hillocks the road transport is found to be quite difficult. (2001 Census)

3.2.2.2.2 Educational Facility

In Chandrapur C.D. block depicts a poor scenario where high school Secondary school and College facility are totally absent. Again 24 % villages have no any educational facility atoll. There are 9 Middle school and 4 High school. (Table: 3.3)

3.2.2.2.3 Health facility

In Chandrapur C.D. block there are 14 Dispensaries, 1 Hospitals, 4 Primary health centers and 1 family planning center are seen but there is no Primary health sub-centers and community health centers.(1991 census) (Table: 3.4)
3.2.2.4 Drinking water facility

In Chandrapur C.D. block quite a large number of villages depend on river water, tube well and fountain drinking water constitute 42% and 36% respectively. 91% villages depend on open well for drinking water. (Table: 3.4)

3.2.3 Demographic profile

Total population of the Chandrapur block is 37746 persons according to 2001 census out of which male and female constitute 20069 (53.16%) and 17677 (46.83%) respectively. Schedule Caste population is 17.12% against the district percentage of 10.60 and Schedule Tribe population is 5.81%. The women literacy rate in the block is 55.34%. The block has 38 villages with 4 Goan Panchayats occupying an area of 70.32 sq km. (Table: 3.6).

3.2.3.1 Growth of population

In Chandrapur C.D. block the total populations were 15530, 30376 and 37746 person in 1971, 1991 and 2001 respectively. It shows a rapid growth of population which seems to be double during the aforesaid period. There is no changing of area in the Chandrapur C.D. block from 1971 to 2001. So the growth of population in these periods can be understood from the table (Table 3.5). The decadal variation of population is 95.60% and 24.26% in the block during the period from 1971 to 1991 and 1991 to 2001 respectively. Such a sharp increase of population may be due to the proximity to Guwahati city. A number of Bengoli immigrants are found in the block. Sex ratio of the block is found to be very low which is 881 and the district ratio is 901. Such a low and imbalance sex ratio in the block would undoubtedly be the result of the large scale male selective migration.
and the interplay of a variety of social practices including gender discrimination. (Bhagabati, Bora & Kar, 2001).

**3.2.3.2 Density of population**

Density of population in Chandrapur C.D. block is 487.80 persons per sq km. It is not uniform in the block since some villages have high density and some have low due to mainly physiographic factors. In this context villages are grouped into 5 categories like Low (below 450 person), Lower Medium (450 to 900 person), Medium (900 to 1350 person), Upper Medium (1350 to 1800 person) and High (above 1800 person). The Low density category comprises of 55.26% villages whereas the lower medium group (450-900 person), Medium category (900-1350 persons), Upper medium and high (1350 to 1800 and above 1800 persons) category takes into account 23.64%, 13%, 3% and 3% villages respectively. Tharkurkuchi has the highest density with 2132 person and Ghagua has the lowest density village with 7 person per sq. km. in the block. In Tharkurkuchi village the total population is 2985 person and in Ghagua village it is only 29 person. (Table: 3.9).
Table 3.9: Villages under different category of population density in the study blocks, 2001

<table>
<thead>
<tr>
<th>Name of the C.D. blocks</th>
<th>Number of villages In the block</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Low (Below 450)</td>
<td>Lower medium (450 to 900)</td>
<td>Medium (900 to 1350)</td>
<td>Upper Medium (1350 to 1800)</td>
<td>High (Above 1800)</td>
</tr>
<tr>
<td>Boko C.D. block</td>
<td>138</td>
<td>86 (63.31)</td>
<td>41 (29.71)</td>
<td>2 (1.44)</td>
<td>7 (5.07)</td>
<td>1 (0.72)</td>
</tr>
<tr>
<td>Chandrapur C.D. block</td>
<td>38</td>
<td>21 (55.26)</td>
<td>9 (23.68)</td>
<td>5 (13.15)</td>
<td>1 (2.63)</td>
<td>1 (2.63)</td>
</tr>
<tr>
<td>Hajo C.D. block</td>
<td>91</td>
<td>60 (65.93)</td>
<td>23 (25.27)</td>
<td>4 (4.39)</td>
<td>2 (2.19)</td>
<td>2 (2.19)</td>
</tr>
<tr>
<td>Kamalpur C.D. block</td>
<td>66</td>
<td>6 (9.09)</td>
<td>21 (31.81)</td>
<td>31 (46.96)</td>
<td>5 (7.57)</td>
<td>3 (4.54)</td>
</tr>
<tr>
<td>Sonapur C.D. block</td>
<td>140</td>
<td>84 (60)</td>
<td>38 (27.14)</td>
<td>14 (10)</td>
<td>1 (0.71)</td>
<td>2 (1.42)</td>
</tr>
</tbody>
</table>

Source: calculated from the census of India, 2001, figure in the parenthesis indicates percentages

3.2.3.3 Description of Schedule Caste population

The SC people in Assam are known as Kaibartas. The Kaibartas are the aboriginal inhabitants of Assam. They are one of the sixteen schedule caste communities in the State as per Constitution (Schedule Castes) order, 1950. The Chandrapur C.D block is considered to represent the Schedule Caste population. Here, an attempt has been made to draw a brief description on the Kaibartas people of the areas. The Kaibartas are an important segment of the Assamese society. In Assam the term Kaibartas is used mainly to indicate the people whose main profession is fish trade. Thus Doms and Nadiyals come within the fold of the Kaibartas. They are the most numerous tribe in Assam. That they originally emigrated from Bengal, there can be little doubt. Their original employment is that of fishermen. The S.C. people are interspersed in small population, clusters of
villages/ hamlets in some areas. Though agriculture is first and foremost occupation for the people of Assam yet, a few group of SC population are engaged in agriculture. But these schedule Caste group of people are proverbially landless. Some of them do not have even land for a residence. Their holdings are limited to 5 bighas or less than this, which is not sufficient for maintenance of a family. They subsidise their maintenance expenditure out of petty fish business. The fishermen are to a great extent exploited by the middlemen (Dalals). After fishermen, Goldsmith is another optional occupation of the SC people. Pottery is another activity among the Kaibartas. A typical Kaibartas residential unit comprises of a cluster of huts. The huts are simple rectangular structures. Most of the huts are Kachha made of wood, bamboo, thatch, cane, reed, mud etc. (Sharma, 1992).

3.2.3.4 Description of Sample villages

In Chandrapur C.D. block the name of the lower medium and upper medium villages are Niz-panbari no 2 and Panikhaiti no 2 which cover an Area of 1.65 sq. km. and 5.55 sq km respectively. Number of households are 64 and 103 in both the villages. Total population of Niz-panbari village is 351 person where male and female share 56.69% (199) and 43.30% (152) respectively. In Panikhaiti No 2 the total population is 515 persons where male and female are 53.20% (274) and 46.79% (241) respectively. Density of population and Sex ratio in Niz- Panbari No 2 village is 218 person per sq. km. and 764 female per thousand male respectively. In Panikhaiti no 2 the density of population and sex ratio is 93 person per sq. km. and 880 female per thousand male. The Schedule Caste, Schedule Tribe and general population in Niz- Panbari No 2 village is 6.3% 0.9% and 92%
respectively. In Panikhaiti No 2 village the Schedule Caste, Schedule Tribe and general population constitute 2.3%, 3.9% and 94% respectively. (Table: 3.7)

3.2.3.5 Occupation

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 occupational composition of workers may be analyzed in terms of proportion of workers (female or male) in different categories out of the total workers, as defined by the Census of India. In Chandrapur C.D. block the female main workers, marginal workers and total workers are 1.3%, 1.1% and 2.5% respectively which seems to be very low. But the non-workers is quite high which is 85.6%. Participation of female main and marginal worker is as low as compared to male counterpart however, female are mostly non-worker. (Table: 3.8). As like as the Boko C.D. block in Chandrapur C.D. block also female workers are prominent in cultivation. In the block the male and female cultivators are only 25.2% and 27.8% respectively and the rates are lower than the other C.D. blocks. Agricultural labours as well as workers in household industries for male and female are 8.3% & 14% and 1.5% & 11.4% respectively that seem to be lower than the other C.D. blocks.

3.3 Geographical background of Hajo C.D. Block

The Hajo C.D. block lies in between 26°8’ to 26°20’ north latitudes and 91°02’45” to 91°40’ East longitudes. (SOI). This block is situated on the northern side of the river Brahmaputtra and north western side of the Guwahati city. Western side is surrounded by Kamalpur, Bezera and Sualkuchi blocks. Northern side has Rangia and Nalbari district. In the western side there is Nalbari district. River
Brahmaputra and Sualkuch block is thereon the southern side. Many Char and Chaparies are found near the river Brahmaputra which is densely settled by a group of people mostly immigrants from the neighbouring countries. This social group is popularly known as Char community. Hajo, at a distance of 34 kms northwest of guwahati is a unique place for pilgrimage of Hindus, Muslims and Buddhists. The Hindus visit its Hayagribe Madhava temple and the hill top temple of Kedar. The masque at Hajo is believed to have one forth sanctity of Mecca and is called Poa-Mecca. The Buddhist Cherish the belief that Lord Buddha had his Nirvana in this area. (1991 Census).

3.3.1 Physical setting

Physiographically, the area can be divided into three distinct divisions- (1) built up area with swamps and beels on the north, (2) flood plain in the middle and (3) sand bars along the Brahmaputra in the south. The three divisions run approximately in east west direction. Along the southern boundary of the block rolls the mighty Brahmaputra. The physical setting of the Hajo C. D. block is discussed here under the following heads.

3.3.1.1 Relief

The relief of the Hajo area consists primarily of an agricultural plain made up of alluvial deposits formed by the river Brahmaputra and its tributaries. Its average elevation slightly exceeds 50 metres from mean sea level, though there are some areas of higher and lower elevations and few scattered hillocks, Beels and Swamps (Taher, 1975). The area has almost 50 meter elevation with land slope less than 10 meter per kms. There are many Char and Chaparies located in Brahmaputra river which is very fertile and grasses seem to be more than 3 meter
in height. The built up area consists mainly of swamps (Doloni) and water logged area (Beels). They are formed by coalescence of the alluvial deposits of the river Chaulkhowa and Puthimari. Some of the important beels are Digholi, Pandoba, Bhakua, Barkurua, Karjini etc. To the south of this area lies another low lying area surrounded by some villages. Towards further south-west, the whole area is Charland. Along the bank of the mighty Brahmaputra, there is an active flood plain that gets inundated frequently during summer. A number of hillocks are scattered over the area. These are primarily composed of hard rock formation of Archaean age. The pre-Cambrian gneiss complexes forming the scattered hillocks were originally part of the Meghalaya plateau and subsequently separated by alluvial tracts. The hillocks vary in altitude ranging from the lowest at pacharia (45.72m) to the highest at Powa Macca with 231.65 meter. (Bora, 1995).

3.3.1.2 Geology

The block being a tiny patch on the bank of the river Brahmaputra represents the general geological characteristics of the alluvial plain dominated by fluvial actions as well as weathering activities. The Brahmaputra valley, from the Quaternary period to the present, has undergone various geomorphic processes like aggradations and degradations, channel migration, seismic disturbance and as geologically extremely unstable. On the whole the block is covered with recent alluvium. The area covered by the division is composed mainly of alluvial of recent to sub-recent origin and rocks of pre-Cambrian gneissic complex. (Taher & Ahmed, 2005).

3.3.1.3 Soil

The region is primarily composed of alluvial soil. Young and immature soil covers more than 80% of the area. These soils are mostly found along the beels
and swamps. In the hilly tracts, red laterite soil is common. On the basis of sediment character, organic content, drainage condition, structure, depth, water infiltration, the area may be classified into two different groups. Group ‘R’: This type of soil is deep and well drained silty-loam to silty clay loam, fine sand and coarse sand in texture and forms the flat ground. Group ‘S’: This is also deep soil with silty loam and fine sand texture. The main characteristics of this group are the presence of coarse textured horizon of 15 to 20 cm. depth from the surface in the flat plain. Younger alluvial type of soils is available with arable land in the block. (NATMO, 2001). The alluvial clays of the Brahmaputra valley offer good raw materials for manufacture of bricks, earthen ware etc.

3.3.1.4 Drainage

The Brahmaputra is the main drainage that covers the whole southern boundary of the block. It is a braided river characterized by natural levees on both banks and successive divisions and rejoining of the channels around numerous sandbars. A number of tributaries of the Brahmaputra flow through the area in an east-west direction. These river channels have different names at different places. It is called Kalajal near Bokra, Mudulkani, Kurijini, Athiaboi and Sessa near Chenamukh. From Kulhati westward it is known as Hajo- Suta Nadi. From Athiaboi, the river flows in a meandering courses where several small streams or rivulets join from both sides. The Puthimari is another braided river that originates in the Bhutan hills, and flow parallel to the Sessa Nadi and takes a westward turn at the northern boundary of the block. The river has generated different channels along its courses. It is locally known as Lakhaitara and Barsola. Another stream, i.e. Moomari Nadi, a tributary of pogladia, flow through the western boundary of the block. Flood is a regular havoc in the area that occurs during the rainy season.
from June to September. In the local water bodies, the water level rises 0.29m. to 3.05m. above the ground level. At the same time, the Brahmaputra itself rises above the dander level, resulting in submergence of a large part of the area with flood water. (Sharma, 1993).

3.3.1.5 Climate

Climate is one of the principal environmental factors affecting the energy utilization pattern of a region. The block being a small part of the Assam valley has typical monsoonal type of climate. The climate is characterized by extreme humidity, heavy summer rainfall and winter drought. The mean summer temperature of the area is 27° C. while the mean winter temperature is 17° C. January is the coldest month with a minimum temperature of 78° C. The relative humidity of the area varies from 60 percent to 90 percent during the year, lowest being during February-April. Rainfall generally occurs for eight months in the year from the end of March to October with certain variations. During this period, the area receives monsoon and cyclonic rains that account for percent of the total precipitation. (Gopalkrishnan, 2000). During April, pre monsoonal heavy showers, hailstones and thunderstorms occur. Annual rainfall and temperature are 1600mm and 24° Celsius respectively. (NATME, 2001).

3.3.1.6 Natural Vegetation

The vegetation in the area is of mixed deciduous type in the block. Mango, banana, bakul, jam, makari etc are the primary trees grown in the area. In the hilly tracts, trees like Sal, teak, gomari, sonaru, Simul, Khoir, Ou Tenga, Jack fruit, Kadam, Siris, Arjun, Silikha, Bhomora etc. grow. In the Char area as well as in the swampy areas, grasses of different kinds, Ulu, Birina, reeds and thatches are found. The forest comprises of Sal tracts as well as the major part of scrub forest in the
block. Economically sal, teak and gamari are the most important products of this deciduous forest. There are a few other species of trees that supply hard wood for construction of buildings, bridges and for preparation of railway sleepers. The southern side of the block which is surrounded by the mighty river Brahmaputra, the trees and plants that grow on the banks are known as the Riparian vegetation. They are mainly tall grasses. The riparian grasslands cover extensive tracts along the large areas where the river banks are low. (Taher and Ahmed, 2005). Most of the grasses are upto 6 m. tall and 5 cm. in diameter at the base. Therefore, they can be very easily grazed by large herds of buffalos and even of elephants. High kahua, nal (erianthus ravinae), khagari (ikra), ulukher (imperata cylindrical), kahiban are found in such grassland.

3.3.1.7 Flora and Fauna

In the block, the tropical moist deciduous forest is found with different kind of plants and animals. They are ahoi, ajar, bonam, B.poma, badam, B. dima, bhelu, bomora, bola, brajanali, cham, gomari, gannorai, haldu, hatipolia, hiharun, hilikha, hingari, hillock, jia, kadam, khakan, koroi, kuhir, sal, nahar, odal, poma, satians, sida, simal, sopa, tita sopa, uriam, gomari, hatikerepa, paroli, kaunla, garogine, gainali, amlokhi, kum, kanchan, kathadua, bhela, bhadia, garcinia sp. Bamboos, oks, ahoi, jia, salkali, paruli jam, bhomora, gohora, ajhar, hatikerpa, etc. Besides, many valuable medicinal plans are also found in the areas. These are used for herbal products. Different kind of mammals, many common birds, some species of reptiles mainly tortoise are found. The area is very rich in fish-fauna. Some of the fishes live in the river and in equally numerous beels and swamps. (Forest Report, 1991).
3.3.2 Cultural setting of Hajo C.D. block

In this part a brief discussion is made about the agriculture system, infrastructural facility like transport and communication, educational, health and drinking water facility, demographic profile, growth of population, density of population, description of Char community population, occupation of the people and female work participation rate of the Hajo C.D. block.

3.3.2.1 Agriculture

In Hajo C.D. block paddy varieties like aush or ahu is the most common variety along with aman. Sali and Bao varieties are also grown at a very limited scale due to unsuitable land conditions. Wheat cultivation is also common in the block. Variety of pulses and lentils are cultivated which include moong, masur, mati kalai, khesari, along with varieties sesame (til) and linseed (tishi). Mustard is cultivated in the char areas as the land is ideally suited for this variety of oilseed. In the char areas of the block majority of population are the migrant people from East Bangal i.e. present Bangladesh. The migrant farmers could mix various crop varieties in a season for maximum yield and diversity production e.g. mustard and masur is mixed with dhania; tishi is mixed with dhania and /or masur, wheat is mixed with masur etc. The single largest contribution of these peasants towards revenue generation has been the large scale production of jute cultivation in the Brahmaputra valley. A large variety of rabi crops (vegetables) are cultivated by the char dwellers. They include- dhania, brinjal, kerela, tomato, potato, chilli, sweet potato, cabbage, cauliflower, raddish, onion to name a few. Again a wide range of condiment are cultivated which includes turmeric, ginger, garlic, kalijira, pepper etc. Moreover, various rabi crops are mixed and cultivated together in the same plot of land by the cultivators in char areas. Leasing of land for cultivation is quite
rampant in char areas. Land erosion has been another important factor which encourages leasing of land. Due to widespread land erosion large number of char dwellers become landless or loose a sustainable portion of their land due to which some migrate to other char or settled areas whereas the rest lease-land for survival in the same area. The use of chemical fertilizers is erratic. Majority of the cultivators use urea while others add potash, DAP, and super phosphate along with urea. The peasants of char areas are hard working, skilled and gifted with indigenous knowledge of crop production. They therefore, can harvest in those lands where cultivation is unthinkable for others. (Hussain ed, 2005).

3.3.2.2 Infrastructural facility

Infrastructural facilities of the study area are discussed on the basis of Transport and communication, Educational facility, Health facility and Drinking water facility.

3.3.2.2.1 Transport and communication

The state highway passes through the Hajo C.D. block from east to west. So the block is connected by the state highway with the northern district of Brahmaputra valley like Nalbari, Barpeta etc. There is no rail network connectivity with the block. Many important matelled, unmatelled and other roads are there connecting the market centres, interior villages of the block. Sualkuchi, a very famous patt-muga and silk handloom center is located a few km. away from the head quarters of the block. Though the mighty river Brahmaputra is surrounded whole the southern side of the block yet the water navigation is not so developed in the areas. Transport and communication either by road or water is a major problem from the char areas of the block. So presence of demand pattern, lack of storage
facilities etc. are some of the reasons which generate market imperfections due to which the actual cultivator fails to obtain a remunerative price for his produce. (Hussain, 2005). Yet few markets centers have developed at the banks of the river Brahmaputra, the puthimari tributaries and on the roadside of the block. From these collection centres the agricultural produce are sent to various parts of the district and Assam. A visit to the nearby char surrounding these collection centers will give any observer an idea about the prevalent price differential in the chars and these areas. The percentage of villages provided by transport and communication facility are 19.13% post and telegraph, 14.78% market and hut, 427.83% communications, approach by pucca road is 32.17% and 68.70% power supply is observed in the block (1990 census). (Table: 3.2)

3.3.2.2 Educational Facility

Educational Facility in Hajo C.D. block seem to be relatively better where maximum number of Primary school are found followed by 64 Middle school, 46 High school, and 3 Higher secondary school. In the block 12% villages have no Educational facility. (Table: 3.3)

3.3.2.3 Health facility

In Hajo C.D. block there are 5 Dispensaries, 3 Hospitals, 13 Maternity health centers, 7 Primary health centers, 2 Family health centers and 18 Primary health sub centers without any community health centers. (Table: 3.4)

3.3.2.4 Drinking water facility

In Hajo C.D. block tap water facility is found to be improved where 17% could avail the facility. Majority of villages are found to be depend on tube well, followed by open well, river and tank which comprises of 95%, 76%, 24% and 15% respectively. (Table: 3.4)
3.3.3 Demographic profile

Total population of the block is 163808 person of which, male is 85030 (51.90%) and female is 78778 (48.09%). The block has 91 villages, 27554 household with 16 Gaon Panchayats. Women literacy rate is 54.45%. The population distribution is uneven in the block. The rural population of the block is (142513) 87% and urban population is only (21295) 13% according to 2001 census. The total area of the block is 144.61 sq. km. Schedule caste and Schedule tribe population of the area is only (18886) 11.51% and (1031) 0.61% respectively (2001 census). (Table: 3.6)

3.3.3.1 Growth of population

The total area of this block is changing from bigger to smaller with inhabited villages from 115 to 91. During 1961, the block area witnessed a phenomenal increase of population with 40.3 percent of decennial growth mainly due to heavy influx of population that mostly concentrated in the Charland in its southern boundary along the bank of the Brahmaputra. Other wise, the growth pattern remained more or less stationary as compared to the population data of Assam. In 1971 the total population in the block was 129996 which became 188100 in 1991 and 163808 in 2001. The decadal variation in the block during the last two decade i.e. 1971-91 and 1991- 2001 was 44.70% and -12.91% respectively. So the population growth rate is very high and the Sex ratio is 936 female per thousand male for the block. Large absolute increases in the rural population are leading to an ever increasing strain on the land resources (Chandna, R.C. 1996). The problems of rural unemployment and underemployment were assuming serious proportions. There are wide variations in the rate of population
growth from one village to another. In the char areas the population growth rate is very high due to high birth rate in the block. (Table: 3.6)

3.3.3.2 Density of population

In Hajo C.D block density of population is 641.63 person per sq km which seems to be higher than all the identified C.D. blocks in 2001 and 448 person in 1991. In 1971 it was 361 person per sq km. against 186 for Assam. These figure show that the density in the block is higher all the time than the all Assam average. The density of population is very uneven among the villages of the block. All the villages of the block are grouped into 5 categories like Low (below 450 person), Lower Medium (450 to 900 person), Medium (900 to 1350 person), Upper Medium (1350 to 1800 person) and High (above 1800 person). In the C.D. block, low category (below 450 persons per sq km.) has 65.93% villages. In the lower medium group (450 - 900 person) the share of villages is 25.27%. Villages lying in Medium category (900-1350 persons) comprises of 4.39%. 2.19% villages are seen both in upper medium and high category of density group. The highest and lowest density of villages in the block are No. 2 Sarudampur and Barbakara with 4139 person per sq. km. and 5 person per sq. km. respectively.

3.3.3.3 Description of Char community population

Inhabitants of Char areas are generally meant those people who came from erstwhile East Bangal of undivided India before independence. Char area in Assam are not properly surveyed and hence, their exact figure in area is not available. Most of the inhabitants of the char areas of lower Assam are Muslim. There are many Char and Chaparies in Hajo C.D. block. Both the sampled villages of the block has these group of people. They are known as charaua, pomua, mian,
or moimonshinia. They have accepted the Assamese language and culture without hesitation and thus extended wholehearted contribution towards forming the Assamese speaking people. (Hussain, ed, 2005).

Agriculture is the main way of livelihood of the people of char areas. Hence, their economy is agriculture based. In spite of being a laborious ethnic group, the socio-economic condition of the people of char area is very deplorable. The charuawas, at home in cultivation, started tilling the fertile land in the char areas. The char areas became abundant in paddy, pulse, mustard seeds, jute, sugarcane, potato, ginger, onion, garlics. Gourd, pumkin, cucumber, brinjals, tomatoes etc. In addition to cultivation, the char dwellers also rear cows, buffaloes, goats, sheep, ducks, hens etc. The products of char areas along with milk, curd, eggs, ducks, chickens, goat, sheep, etc. are sold in the neighboring bazaars. Ninety five percent of the char dwellers are cultivators; the rest are engaged in service, business or other occupations. They work hard from sunrise to sunset. Despite hard work they are socially and economically backward. The frequent flood havoc of the Brahmaputra inflicts heavy blow on the cultivators of char areas. Erosion also cripples the economy of these people and their socio-economic infra-structure used to be ravaged. The people in the char areas survive with struggles against the opposing circumstances of nature, the environment and situation have made the char dweller more tolerant and adventurous. Illiteracy, lack of communication, lack of markets for products, lack of medical service, lack of consciousness about family planning etc. are some other major obstacles in the path of socio-economic development of the char dwellers. (Hussain, ed, 2005).
3.3.3.4 Description of sample villages

In Hajo C.D. block the name of the lower medium and upper medium villages are No 4 Dokonia Reserve and No 3 Shrihati village respectively. The No 4 Dokonia Reserve village occupying an area of 1.66 sq km. with 74 households and No 3 Shrihati village has an area of 2.67 sq. km. with 173 households. The total population of the No 4 Dokonia Reserve village is 451 person where male and female share 49.66% (224) and 50.33% (227) respectively. In No 3 Shrihati village the total population is 996 person, male is 52.51% (523) and female is 47.48% (473). In both the villages Schedule Caste and Schedule Tribe population are absent. (Census report 2001). Majority of the population are Muslims, considered as general population but they are the immigrated people from the neighboring countries. (Table: 3.7)

3.3.3.5 Occupation

The main occupation of the people of the block is agriculture and some are agricultural labours also. However, few small scale industries are established in the block very recently. The rural worker in the Hajo C.D. block is 54.94 %, male and female workers are 47.35% and 7.59% respectively. Female marginal workers, total workers and non-workers are 6.57%, 14.17% and 86.92% respectively. Male main worker, marginal worker and total worker are higher than the female main worker, marginal and total worker. But the female non-workers are more (86.92%) than the male non-workers (70%). (Census, 2001), (Table: 3.8)

3.4 Geographical background of Kamalpur C.D block

Kamalpur block lies in between 26°15’ to 26°25’ North latitudes and 91°35’ to 91°45’45’ east longitudes. (SOI). This block is on the northern side of the river.
Brahmaputra. Eastern side has Bihdia –Jajikona and Bezera blocks. Western side there is Rangia and Hajo CD blocks. Northern side has Goreswar block. Southern side is surrounded by North Guwahati and Sualkuchi C.D. Block. National Highway 31 and 52 passes through the block. Puthimari is the main river passes through the block.

3.4.1 Physical setting

From the Physiographic point of view, the Kamalpur C.D. block bears homogeneity in respect of relief, drainage, climate, vegetation etc. However, there are micro differences if these aspects are studied on local scales. There are some hillocks in the block.

3.4.1.1 Relief

The surface of the block is of very flats plain. It has an average absolute relief of around 65 mt. above the mean sea level. The northern part of the block has the absolute relief of not more than 75 mt. while the southern part has an elevation of about 55 mt. . The north-eastern part of the block is slightly higher than the south-western part. Average elevation of the block is 50 meter and land slope is less than 10 meter per kms. The average slope of the block is 1° but most of the areas of this block has slope below 30 minutes. The slope of the block is from north to south with an average gradient of about 2 m. per km. The slope also found in the direction from north –east to south-west, where the gradient is not more than 2m. per km. (NATMO, 2001)

3.4.1.2 Geology

The Kamalpur block is under the formation of Quaternary deposits found as terraced deposits, unstratified drifts, older or high level alluviums or red bank soils.
Recent alluvial deposits cover much of the areas (with average depth varying from 120 m. to 300 m.). (NATMO, 2001). The existing surface configuration of the block is the result of uplift and subsidence of different blocks of pre-cambrian crystalline formation. The hillocks are covered by natural vegetation and human habitation is also found in the areas. (Taher & Ahmed, 2005).

3. 4.1.3 Soil

The soil of Kamalpur C.D. block is of alluvial. It mostly comprises of loam to sandy loam having various proportions of silt, clay and sand. The stickiness of the soil of the built up areas of this block is more due to having more proportion of silt and clay contents. Contrary to hills, the soils of the low-lying areas are sandy and clay. The soils of the block are rich in phosphorous. The PH value of the soil ranges within 5 to 6. The soil of the block is considered very fertile and conducive for raising various crops. Younger alluvial soil and arable land are available here. (NATMO, 2001). The alluvial tract of the Brahmaputra valley, which covers a major portion of the division, comprises mainly of silt, sand and clay with occasional pebble beds. The soil covered by the plains areas are generally formed of deep alluvium consisting mostly of sandy loam. This alluvium tends to be clayey in stretches adjoining broad julis and frequent patches of ‘khorkani’ land occur, formed by throwing up of mounds of activities of some types of earthworm. The channels intervening these mounds become water-logged during the raining season.

3. 4.1.4 Drainage

Kamalpur C.D. block falls under the Brahmaputra valley physiographic unit and is washed by a number of tributaries of river-Brahmaputra and their sub-tributaries and streams etc. Moreover, a large number of Beels, Swamps etc. are
also found in the block. The Puthimari and its tributaries have washed the block regularly. The Puthimari river system can be divided into three major systems in consideration to the main drainage network in the sub-basin: (a) Main Puthimari river (b) Sukla a tributary and (c) Sessa a tributary. The river Puthimari originates from the Himalaya Ranges of Bhutan near latitude 27° 16′ N and longitude 91° 48′ at an altitude of 3750 mt from M.S.L. The river flows in a north-south direction for about 74 km. upto 26°50′ N in hills and receive a few streams to drain the catchment discharge, the river is named as Puthimari near Nagrijuli Tea Estate. Puthimari oozing at the Bhutan Himalaya uses to flow along the middle of the Western half of the Block, while Kalajal and Sessa flow down from north to south along the middle part of the eastern half of the block. The entire Puthimari river system along with tributaries has a catchments area of 1787 sq. km. with hill catchments of 596 sq.km. and plain catchment of 1191 sq.km. The length of the river is 190 km. and average annual discharge is 26324 m³S⁻¹. It creates flood in the block regularly inundating the areas of human habitates and agriculture. Kalajal, the tributary river of Puthimari also creates flood havoc almost every year though being a small stream. The gradients of the river of the block are seems to be very low. In the block, there are also some Beels, swamps and other forms of water bodies scattered here and there. In different villages of the block, the sub-tributary of Kalajal has different names. In Baihata village, this tributary is known as Sessa river. There are also some small or big streams, which are running through the block. Among the streams of the block, ‘Madankuri river’ (the name given by the local people of the village of Moinasundari) is very important. This river links with Kalajal River. (Sarma, 1993)
3. 4.1.5 Climate

The Kamalpur C.D. block also lies under the influence of monsoonal type of climate having heavy summer rainfall, winter drought and high humidity. The average temperature of the block is about 30° C. The maximum temperature ranges from 34° C to 35° C during summer. On the other hand, in winter the average temperature ranges from 15° C to 20° C and sometime below that. The diurnal range of temperature sometimes become high recorded at about 8° C. The relative humidity during summer is as high as 83-88% and 68-78% in winter. The number of rainy days has been recorded as more than 180 days in a year and out of total rainfall occurrence about 80% rainfall occurs in the summer months. The average annual rainfall is about 1800 mm. According to the amount of rainfall and temperature, three distinct seasons can be recognized. June to mid-October can be termed as rainy season. The monsoon starts towards the end of May and beginning of June and about 1300 mm of rainfall occur during this period. The amount of rainfall gradually tops off towards the end of this period are rather high. On sunny days in between the spells of rain, the heat is rather intense and oppressive. Annual rainfall and temperature are 2000 mm and 24 degree Celsius respectively (NATMO, 2001).

3. 4.1.6 Natural vegetation

The total land under forest covers in Kamalpur C.D. block is about 135 hectare according to 2001 census. This block is mostly covered by plain area and the forest cover is found very less in this block. Most of the forest cover is seen in the Gopeswar Goan panchayat. The deciduous and semi-deciduous forest occurs mostly in Kamalpur C.D. block and in the riverbank of the block some riverine vegetation are found. There are various types of species found in the basti lands of
most of the households of this block. Bamboo, various fruits plants, hardwood trees are mostly common species of trees found here in this area. Reeds and various types of tall grasses are also found in the low-lying areas of this block.

3.4.1.7 Flora and Fauna

The forest region of the Kamalpur block is rich in fauna. The mammals include various types of primates and herbivores. Some kind of reptile population like tortoise, lizards and snakes are seen in the block. Different kind of birds is there in the region. In the tributaries, beels and marshy land the fish fauna are found. Many wild animals are seen in the block. But the forest areas are decreasing due to increasing population growth and the utilization of forest land for cultivation. In the light of the above, keeping apart of the remnants of the “wet miscellaneous formation” exclusively for the purpose of wild life preservation has become essential and further opening up of such areas for cultivation and other purposes should under no circumstances be allowed. As for the rest of the areas of the forest, consistent with the demand of forestry, least disturbance to the habitant, as far as practicable, should be aimed at. (Forest Report, 1991).

3.4.2 Cultural setting of Kamalpur C.D. block

In this part a brief discussion is made on about the agriculture system, infrastructural facility like transport and communication, educational, health and drinking water facility, demographic profile, growth of population, density of population, description of General Caste population, occupation of the people and female work participation rate of the Kamalpur C.D. block.
3.4.2.1 Agriculture

Agriculture is the prime occupation of the people of the block. Three kinds of rice production are practiced namely Sali rice, Boro and Ahu rice by the farmers. Besides rice wheat, maize, makoi etc are produce for the food crops. Different kind of pulses, oilseeds specially mustard, sunflower, til, tichi are grown. Other crops like onion, garlic, ginger, jaluk, mithi, chillies, turmeric etc are found. A variety of vegetables, such as potato, sweet potato, cabbage, cauliflower, radish, brinjal, tomato are grown in the block. Low amount of sugarcane, jute production are seen in the block. The farmers use manures, fertilizers, insecticides, pesticides in their production. Some farmers also use high yielding varieties seeds, tractorisation and power tiller in the agricultural field.

3.4.2.2 Infrastructural facility

Infrastructural facilities of the study area are discussed on the basis of Transport and communication, Educational facility, Health facility and Drinking water facility.

3.4.2.2.1 Transport and communication

The transport and communication system is quite developed in the Kamalpur C.D. block. The National Highway 31 passes through the block from north to south. It connects the Guwahati city on the southern side and the Rangia sub-division and other northern bank district on the northern side. The North-East Frontier Rail line also passes parallely with the national highway 31 from north to south. Puthimari river is a water navigation system in the block. The interior villages and market centers are connected by the metalled and unmetalled road.
The transport network is quite good position in the block. In the block 74.51% (76) villages have communication system which is seem to be higher than the other identified C.D. block. (1991 census). With regard to the availability of amenities it is seen that out of the total villages 9.80% (10) has Hut and market, 43.14% (44) has pucca road and 86.27% (88) villages could accesses power supply. Guwahati and Rangia two major railway stations are located a few km. away from the block. (Table: 3.2)

3.4.2.2.2 Educational facility

In Kamalpur C.D. block there are 165 Primary school, 43 Middle school, 33 High school, 2 Higher secondary school and only 1 college. 8% villages have no educational facility. (Table: 3.3)

3.4.2.2.3 Health facility

In the block there is no Primary health sub-centers, community health centers and child welfare center. In the block there are 3 Dispensaries, 4 Hospitals and 9 Primary health centers. (Table: 3.4)

3.4.2.2.4 Drinking water facility

In Kamalpur C.D. block drinking water facility seem to be lag far behind as no villages are availing tap water facility. They are mainly depend on tube well followed by tank, well, river and fountain with 92%, 24%, 21%, 19% and 8% respectively. (Table: 3.4)

3.4.3 Demographic profile

Total population is 82667 person out of which male is 52.47%(43379) and female is 47.52% (39288) in the Kamalpur C.,D. block. Schedule Caste and Schedule Tribe population are 4.01 and 1.87 % respectively. More than 90%
people are of general category. Kamalpur block has 66 villages, occupying an area of 248.3 sq km. with 12 Gaon panchayats. The female literacy rate is 73.24%. (Table: 3.6).

3.4.3.1 Growth of population


3.4.3.2 Density of population

In the Kamalpur C.D. block the density of population is 616.82 persons per sq. km. within the block there is the variation of population density. Some villages have high and some villages have low population density. So to find out the same amount of population density villages in the block, a comparative analysis is made in the present study. To find out the villagewise variation of density, villages are grouped in to 5 categories like Low (below 450 person), Lower Medium (450 to 900 person), Medium (900 to 1350 person), Upper Medium (1350 to 1800 person) and High (above 1800 person). 9% villages fall in to low, followed by 31.81%, 46.96%, 7.57%, 4.54% villages in lower medium, medium, upper medium and high category respectively. (Table: 3.9). The highest density is as high as 1702 person in Bargaon where as lowest density as low as 6 person per sq. km. in the village Dalma.
3.4.3.3 Description of General Caste population

With an aggregative population of 5.2 million, the Hindus in the British province of Assam were classified as Brahmo, Arya and others at the 1931 census (Ahmad, 1999) system. The Indo—Aryans group of people came to Assam from the west from Ganga plain. They brought with them Vedic culture, practiced Hindu religion and higher technology of sedentary agriculture. (Taher & Ahmed, 2005). According to Gopalkrishnan in the mediaeval age, the kings of Assam imported intellectual groups from northern India. This Assamese caste Hindu people of Assam includes mainly the Brahmins, Ganakas, Kayasths, Kalitas and Koches. The written records reveal that the Indo-Aryan groups of people enjoyed privilege position under the patronage of the rulers of Assam. In the field of education, this group enjoyed a leading position. (Gopalkrishnan, 2000). These groups of people are known as general caste people in Assam. Accounting for Hindu population on an average 5.33% Brahmin, Ahirs and Kayasthas generally constitute less than 2 % in Kamrup district. Originally the general caste people are rich; they were the landlord or Jamindars. They are developed in terms of education and socio culturally. The Brahmin caste people never cultivated in the fields, but puja-bidhi and mantra path are their profession from ancient times. These Brahmins people were brought by the Ahom Rulers in the Ahom period.

The Kamalpur C.D. block is considered to represent the general caste people. The Schedule Tribe and Schedule Caste population are very few in the block.(Census, 2001) (Table3.6). As report collected from the Directorate of social welfare, the high amount of Hindu general caste people are found in Kamalpur C.D. block in the district. Brahmins, Kayasthas and Kalita etc are main the general caste people in the block as well as in the sampled villages also.
3.4.3.4 Description of sample villages

In Kamalpur C.D block the name of the lower medium and upper medium villages are Laukuri and Maniari village respectively. The Laukuri village has an area of 1.03 sq km. with 79 households and the density of population is 441.74 person per sq. km. The total population of the village is 455 person of which male is 53.62% (244) and female is 46.37% (211). The Maniari village occupying an area of 3.51 sq. km. with 239 households and has the population density of 458.97 person per sq. km. In the Maniari village the total population is 1611 person of which male is 52.07% (839) and female is 47.92% (772). The sex ratio for both the villages is 865 and 992 female per thousand male. Schedule Caste and Schedule Tribe population are almost absent and 95% people are general Hindu people in both the sample villages (2001 Census) (Table: 3.7).

3.4.3.5 Occupation

The primary activity is the main occupation of the people in the block. It includes different kinds of agricultural productivity, animal rearing, etc. Total main worker in the block is 35.26% where as male and female workers are 31.78% and 3.48% respectively. The marginal worker constitutes 8.50% of the total population out of which 4.71% are male and 3.79% are female worker. With regard to non-workers status it is seen that women covers the major share i.e. 90.02% followed by 54.24% of male non-workers against the total non-workers of the block which is 71.33%. The overall contribution of women to the workforce is much lower than that of the male counterpart in terms of both marginal and main workers reflecting relatively poorer wellbeing of women as compared to male. (2001 Census)
3.5 Geographical background of Sonapur C. D. Block

The Sonapur block is lies in between $26^00'$ to $26^014'$ north latitudes and $91^052'$ to $92^012'$ east longitudes. (SOI). The block is situated on the South–East direction of Guwahati city. Eastern side is surrounded by Morigaon district; Meghalaya lies in the Southern side and western side. Chandrapur CD Block and Marigaon district cover the northern boundary. National Highway 37 passes through the block and Digaru is the main river.

3.5.1 Physical setting

From the physiographic point of view the block is not uniform. Southern side of the block has high altitude than the northern side. There are a number of beels and swamps in this area. Among these the Etila beel in the north east and the Bora beel in the North West are prominent. These beels and swamps are created mainly as a result of abandonment of old courses by rivers and formation of oxbow lakes. The physiographic characteristics of the block are discussed under the following heads.

3.5.1.1 Relief

The southern part of the Sonapur block is surrounded by Meghalaya plateau. The altitude is more than 300 meter. Physiographically Sonapur block is a small segment of the Brahmaputra valley along its south bank (fig: 3.14). The area has two distinct types of terrain, the plains and the hills that developed in many parts of the valley; here also the south bank plain is discontinuous as the Meghalaya plateau projects up to the bank of the Brahmaputra because of which most part of the area is covered by isolated hills and hillocks. These hillocks are composed of highly metamorphosed crystalline genesis complex, granite, quartzite
and conglomerate of pre-cambrian origin (Singh, 1992). The micro-relief of the block is characterized by a higher tract of more than 500 m. that covers 3.5% of its total area while 42.87% of the area lies within 100m to 500m elevation. Elevation of the block is more than 50 meter and on the southern side land slope is more than 300 meter. A major portion of the area lies below the 100m. The average slope in this area is around $10^\circ$-$20^\circ$, which may be due to the fact that streams such as Digaru had incised the land surface more and more as the Shillong plateau had undergone upliftment (Singh, 1992).

3.5.1.2 Geology

Geology of the southern boarder of this block is Archaean formation consists of banded composite biotic, biotite-hornblende, biotite—sillimanite gneiss and schist. These are found in association with felspathic biotitegranulates, pyroxene-hornblende granulates, cale-granulates, apilites and younger coarse to find grained granite gneiss. They are scattered as isolated inselbergs in the Brahmaputra valley. Towards the close of the Pleistocene period, alluvium begins to be deposited in the form of sand, pebble, gravel and boulder. The general gradient of the valley is from south to north. (Gopalkrishnan, 2000).

3.5.1.3 Soil

The flood plain and plain region of the block is found to be new alluvial group of soil which are derived mainly from the material deposited by the river Digaru and Kalang and their tributaries. The southern foothills region adjoining to the Meghalaya state is found to be old mountain valley alluvial soil. These soils are built of alluvial materials washed down from the hill slopes. These are mainly heavy texture soils. The surface soils are compact, very sticky and very plastic. The texture of the soils also becomes heavier along with depth. Red loamy soil is
mostly prominent and older alluvial soil is found in northern parts. (NATMO, 2001).

### 3.5.1.4 Drainage

The Digaru, the Kalang and the Killing are the three main rivers that flow in the Sonapur C.D.block area. From the central highland of Meghalaya, the rivers namely Umtru and Umium take their course and enter the Assam valley, where they are known as Digaru and Killing respectively. The river Killing flows along the whole of its southern boundary. The Digaru River enters the block in the southwest part and flows towards north-east join the river Kalang. The river Kalang originates a short distance below the junction where the tributary Dhansiri meet the main stream Brahmaputra. It flows parallel to the Brahmaputra and occupies the whole of the Northern boundary of the block. (Negi, 1989-90). There are a number of beels and swamps in this area. Among these the Etila beel in the North East and the Bora beel in the North West are prominent. These beels and swamps are created mainly as a result of abandonment of old courses by rivers and formation of oxbow lakes.

### 3.5.1.5 Climate

Assam and Meghalaya experience sub-tropical monsoon climate. The Sonapur block also falls within the regime of monsoon climate. Its climate is characterized by extreme humidity, heavy summer rainfall and winter drought. However, the region and its environs is dominated by scattered hillock and hill ranges, extensive shallow water bodies, forest area etc. and these significantly affect the micro-climatic conditions of the area. The average annual maximum and minimum temperature of the area are calculated at 28° C. and 20° C. respectively
against the average annual maximum and minimum temperature of 33.7°C and 16.3°C in Assam.

The average rainfall of monsoon months occurs variation in the block. The average hourly rainfall is lowest in September and highest in June, while the maximum rainfall occurs in June which is more than 10 mm. as against 18 mm. in Assam. This is mainly due to the steep rise of temperature that leads to the development of strong convention resulting in thunder showers. In the month of August, maximum rainfall observed is around 4 mm. that occurs mostly in the morning and evening hours. While the morning rains may be due to the traditional cooling of the cloud layers, the evening rainfall is due to the convective activity which produces instability in the atmosphere. September is also a wet month for this area. This is normally due to delayed insolation during the day that leads to convection process and rainfall at night. (Gopalkrishnan, 1990). The condition of the sky seems to be mostly sunny during the months January to June while it remains cloudy during the rest of the year. Annual rainfall is less than 1600 mm. and temperature is 25°C Celsius. (NATMO, 2001).

3.5.1.6 Natural Vegetation

The data obtained from Assam Remote Sensing Application Center (ARSAC) show the percentage share of total land in the block under various landuse out of the total geographical area of 308.8 sq. km. is under deciduous forest and 30.8 sq. km. under degraded forest representing 18.5% and 10% of the total land area respectively. (Bora, 1995.). The total forest cover in the area is 28.5% which seems to be higher as compared to the present forest cover in Assam, viz., 21.9% (ARSAC, 1989-90). There are two reserved forest viz. Southam Chang and Apricola reserved forest on the northern and southern side of the block.
respectively. The vegetation of this area is similar to the vegetation of the foot hills of Meghalaya. The species that grow abundantly in this area are Sal, Som, Koroi, Haldisapa, Sonaru, Aunhat, Gomari, Poma, Makarisal, Khoir, teak, Siso etc.

3.5.1.7 Flora and Fauna:

The Sonapur block is very rich for flora and fauna. The southern part of the block is adjoined with the State of Meghalaya and northern side there are Pobitora wild life sanctuary which is rich for rhinoceros’s, leopard, wild cat, elephant, buffalo. Some avifaunas are crane, stork, florican, pheasant and several other varieties of swamp bird. Southern side of the block which is covered by tropical deciduous forests can be termed as multipurpose resources. Some of the economically important trees are agaru, sal, neem, champa, teak and bamboo. These forests are utilize for constructing houses, building, bridges, ships and boats, railway wagons and sleepers, furniture etc. Tea is an important beverage crops found in the block. Some kind of carnivores, many herbivores, reptiles are there in the area. The block is very rich for many kind of fish fauna. Most of the fish-fauna of the region belong to eight orders within the classes like – from Darikana to Rau, Kandhili to Chital, Khalihan to Kawai, Batia to Bami etc. (Taher & Ahmed, 2005).

3.5.2 Cultural setting of Sonapur C.D. block

In this part a brief discussion is made about the agriculture system, infrastructural facility like transport and communication, educational, health and drinking water facility, demographic profile, growth of population, density of population, description of Tae garden community population, occupation of the people and female work participation rate of the Sonapur C.D. block.
3.5.2.1 Agriculture

The Sonapur block is very rich in agricultural production. Different kind of agricultural crops are practiced in the block. Cultivated land in the block comprises areas under kharif crops, double crops and agricultural plantation covering 70.6 sq. km (22.8%), 66.4 sq. km. (21.4%) and 5 sq. km. (1.9%) of the total geographical area respectively. 79.5 sq. km. (25%) of the land remains with or without scrub which is distinctly higher than the average percentage for Assam, viz 3.14% only. Rice is the major crops covering 70% of the total cultivated area. Fruit plantation occupies the second position with 15.6% of the cultivated area. Other crops include vegetables (2.8%), food crops (4.4%), subtropical oil seeds (1.34%) and other non-food crops (1.25%). The crops like gram, maize, jute, sugarcane etc. occupy a very nominal percentage of the total cultivated area. Three kind of rice viz. autumn rice, winter and summer rice are found in the block. Besides rice other crops in the block are wheat, maize, gram, vegetables, fruits, other food crops, cotton, jute, ground nut, sechum, linseed, rape oil seeds, sugarcane, tobacco, rubber and many non food crops are produced in the block. (Block office Sonapur 2001)

3.5.2.2 Infrastructural facility

Infrastructural facilities of the study area are discussed on the basis of Transport and communication, Educational facility, Health facility and Drinking water facility.

3.5.2.2.1 Transport and communication

The National Highway 37 passes through the Sonapur block from east to west and divides the block into two sectors. Western side is adjoined with
Guwahati city and eastern side with the other south bank district of Assam. The broad gauge rail line also passes through Guwahati via Chandrapur. The villages and markets are connected by the Matelled and unmatelled roads. Yet the road facilities in the Sonapur block area are not satisfactory, where more than 50% of the total road length is covered by kutcha road that can be hardly be called as roads with inadequate road surface. The national highway constitute 11.1% and state highway constitute 8.9% of the total road length. However, the road density excluding the village and kutcha roads are calculated at 30.19 km. per 100 sq. km. of area against the all Assam density of 34.09 km. per 100sq. km. during 1985. (Block office Sonapur, 2001). (Table: 3.2)

**3.5.2.2 Educational Facility**

In Sonapur C.D. block there are 126 Primary school, 7 Middle school, 17 High school and only 1 College. There is no Higher secondary school in the block and 26% villages have no any educational facility. (Table: 3.3).

**3.5.2.3 Health facility**

In Sonapur C.D. block, Maternity health centers, community health centers and Family planning centers are totally absent. However, Primary health centers are more in number i.e. 14 followed by 4 Dispensaries and 5 Hospitals. (Table: 3.4)

**3.5.2.4 Drinking water facility**

In Sonapur C.D. block the villages mostly uses wells for drinking water followed by fountain, tubewells, wells, river water and canals which constitute 97%, 34%, 28%, 20% and 11 respectively. Tap water facility is provided by only 1 village. (Table: 3.4).
3.5.3 Demographic profile

Total population of the block is 124043, of which male constitute 51.45% (63832) and female constitute 48.54% (60211) (2001 census). The social make up of the block comprises of Schedule Tribe and Schedule Caste population with 13.12% (15701) and 14.25% (17043) respectively. The block has 140 villages, 23049 household with 12 Goan Panchayats. The male and female literacy rates are 74.2% and 57.4% respectively. (Table 3.6)

3.5.3.1 Growth of population

In the Sonapur C.D. block the population was 62825 person in 1971, 95860 in 1991 and 124043 persons in 2001. The trend of growth rate is very high. In the Sonapur block the decadal variation of population is 52.58% in 1971-91 and 29.40% in 1991-2001 which is marginally decreased. The sex ratio is calculated at 943 females per thousand males in 2001, which shows an improved scene as compared to the sex ratio of 929 females per thousand males in 1991 census. (Table: 3.5)

3.5.3.2 Density of population

The density of population in the Sonapur C.D. block is 428 person per sq which is lower than that of Kamrup district i.e. 581 per sq.km. However, the density along the village shows a distinct pattern where 60 % of villages falls in the low density category with below 450 persons per sq km. 27% villages falls in the category of lower medium (450 -900 person) followed by 10% in medium category (900-1350 persons), 0.71% in upper medium (1350 -1800 persons) and 1.42% in high category (above 1800 persons). (Table: 3.9). A wide variation of population density in the villages is observed in the block. Ambhorkuchi goan has highest
population density with 2387 person per sq km and Rewa N.C. village has the lowest density of population with 5 person per sq km. (Census, 2001).

### 3.5.3.3 Description of Tea Garden community

The tea industry was developed at first by the British in Assam in the year 1830. From about 1850 A.D. the British tea companies brought in thousands of people from Jharkhand, Bengal, Orissa and Chattisgarh to work in the tea gardens as labours. Most of these labours belong to the Mundari language-speaking group of the Austro-Asiatic ethno-linguistic family. Their immigration continued upto 1940. Their descendents today constitute the teagarden and ex-tea garden tribes in Assam. (Taher & Ahmed, 2005). In the beginning the tea industry could not make much progress. In 1850 there was only one established tea garden covering an area of 1876 acres. Tea is the major industry in Assam, but at the same time, it produces about 55% of the national output, earning a lion share of foreign exchanges for the country. Tea industry in Assam employs roughly five lakhs of regular workers, plus another substantial numbers in its temporary or casual rolls. The active workers, the ex-workers and their generations, numbering between 25 and 30 lakhs according to unofficial reports, constitute a sizeable portion of the total population of Assam. (Tea Board, 2001).

Women participation in the tea garden is an economic compulsion with the knowledge of their husband and children and they are happy with their job. Participation of women in tea economy is not new phenomenon particularly among the Adivasi women. Family is the basic economic unit. The increasing nuclearization of the families in the plantation has made the husband and their relationship more crucial. In such a situation mutual adjustment is vital for family
stability. The women stretching their interest in work beyond the home while the man becoming more home centered. (Shyam & Mipun, 2003). In the tea plantation industry both residential and working places are often close to each other. The working hours in the plantation are routine to accord with the day–to-day activities of the domestic life. This industry employs more women than any other organized industry, because the vast majority of women live in the villages are familiar with plantation work which is a special kind of agricultural work. Working women in the tea garden areas are perhaps the most silent participation in economic life. They mostly belong to the lower strata of the society. Women labours are engaged in different works of tea cultivation and manufacturing. Basically they are engaged in plucking, pruning, clearing, manuring and hand weeding in the tea gardens. Socio-economic problems, such as illiteracy, low wages and low standard of living are some of common features of the tea garden community. (Sharma & Sharma, 2005).

3.5.3.4 Description of sample villages

In Sonapur C.D. block a number of small Tea Gardens are found wherein Adibasi community popularly known as Tea garden labour resides. The sample villages namely Amching and Luri are named after the Amching Tea garden and Luri Tea garden. The Amsing village occupies an area of 4.74 sq. km. with 766 households. The total population of the area is 3945 person out of which 53.96% (2129) is male and 46.03% (1816) is female. Luri Tea garden occupy an area of 0.45 sq. km. with 70 households. The total population of the village is 466 person out of which male is 48.71% (227) and female is 51.28% (239). The density of population in the villages seem to be high with 832 and 1035 person per sq. km.
for Amching and Luri villages as compared to the other sampled villages belonging to the rest of the C.D. blocks. (Table: 3.7).

3.5.3.5 Occupation

In the Sonapur C.D. block the main occupation is agriculture. In the area the proportion of the rural main workers, marginal workers and non-workers to the total population is 33.77%, 11.19% and 63.74% respectively. Rural main workers for male and female are 28.39% and 5.37% respectively in the block. The rural female marginal workers are higher than the male marginal worker which is 6.25% and 4.94% of the total rural population of the block. The rural non-workers constitute 63.74% of the total rural population of the block. It is further noticed that while the proportion of the male main workers and total workers is higher than that of the female main workers and total workers in the C.D. block. But the proportion of the female non-workers (80.69%) is higher than that of their respective male (47.76%) counterparts in the C.D. block. Male and female cultivators are 37.3% and 32.3% respectively. Female agricultural labours constitute 25.7% of the total labour force which is relatively more than that of the male agricultural labours of 11.8%. Likewise in the households industries also female workers constitute more shares with 9.3% of the workforce as against of 2% of male workers. (2001 census). (Table: 3.8).
Table 3.6: Demographic profile of the identified C. D. Blocks, 2001

<table>
<thead>
<tr>
<th>Name of the C.D. Blocks</th>
<th>Area (sq. km)</th>
<th>Sex Ratio</th>
<th>Sex wise Population</th>
<th>Rural-Urban Population</th>
<th>Schedule Caste &amp; Schedule Tribe Population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Sex</td>
<td>Persons</td>
<td>Male</td>
<td>Females</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boko C.D. Block</td>
<td>265.46</td>
<td>964</td>
<td>99935 (3.962%)</td>
<td>50892 (50.92%)</td>
<td>49043 (49.07%)</td>
</tr>
<tr>
<td>Chandra C.D. Block</td>
<td>70.32</td>
<td>881</td>
<td>37746 (1.496%)</td>
<td>20069 (53.16%)</td>
<td>17677 (46.83%)</td>
</tr>
<tr>
<td>Hajo C.D. Block</td>
<td>144.61</td>
<td>936</td>
<td>163808 (6.494%)</td>
<td>85038 (51.90%)</td>
<td>78778 (48.09%)</td>
</tr>
<tr>
<td>Kamalpur C.D. Block</td>
<td>115.52</td>
<td>943</td>
<td>124043 (4.917%)</td>
<td>63832 (51.45%)</td>
<td>60211 (48.54%)</td>
</tr>
<tr>
<td>Sonapur C.D. Block</td>
<td>111</td>
<td>12</td>
<td>4345.00</td>
<td>901</td>
<td>252234 (1326981)</td>
</tr>
</tbody>
</table>

Source: Census of India, 2001. Figure in the parenthesis indicate percentages.

(Total population percentage to district population)

Table 3.7: Demographic profile of the sample villages in the identified C.D. blocks, 2001

<table>
<thead>
<tr>
<th>Name of the C.D. blocks</th>
<th>Group Of the Villages</th>
<th>Area (sq. km.)</th>
<th>Density Of population</th>
<th>Sex Ratio</th>
<th>Total Population</th>
<th>Male</th>
<th>Female</th>
<th>Schedule caste population</th>
<th>Schedule Tribe population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lower Medium</td>
<td>67</td>
<td>0.86</td>
<td>373.58</td>
<td>1057</td>
<td>323</td>
<td>157 (48.60)</td>
<td>166 (51.39)</td>
<td>0 (0)</td>
</tr>
<tr>
<td></td>
<td>Upper Medium</td>
<td>179</td>
<td>1.51</td>
<td>582.78</td>
<td>926</td>
<td>880</td>
<td>457 (51.93)</td>
<td>423 (48.06)</td>
<td>10 (1.1)</td>
</tr>
<tr>
<td>Chandra Pur C.D. block</td>
<td>Lower Medium</td>
<td>64</td>
<td>1.65</td>
<td>212.72</td>
<td>764</td>
<td>351</td>
<td>199 (56.69)</td>
<td>152 (43.30)</td>
<td>22 (6.3)</td>
</tr>
<tr>
<td></td>
<td>Upper Medium</td>
<td>103</td>
<td>5.55</td>
<td>92.79</td>
<td>880</td>
<td>515</td>
<td>274 (53.20)</td>
<td>241 (46.79)</td>
<td>12 (2.3)</td>
</tr>
<tr>
<td>Hajo C.D. block</td>
<td>Lower Medium</td>
<td>74</td>
<td>1.66</td>
<td>271.68</td>
<td>1013</td>
<td>451</td>
<td>224 (49.66)</td>
<td>227 (50.33)</td>
<td>0 (0)</td>
</tr>
<tr>
<td></td>
<td>Upper Medium</td>
<td>173</td>
<td>2.67</td>
<td>373.03</td>
<td>904</td>
<td>996</td>
<td>523 (52.51)</td>
<td>473 (47.48)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Kamalpur C.D. block</td>
<td>Lower Medium</td>
<td>79</td>
<td>1.03</td>
<td>441.74</td>
<td>865</td>
<td>455</td>
<td>244 (53.62)</td>
<td>211 (46.37)</td>
<td>0 (0)</td>
</tr>
<tr>
<td></td>
<td>Upper Medium</td>
<td>239</td>
<td>3.51</td>
<td>458.97</td>
<td>992</td>
<td>1611</td>
<td>839 (52.07)</td>
<td>772 (47.92)</td>
<td>6 (0.4)</td>
</tr>
<tr>
<td>Sonapur C.D. block</td>
<td>Lower Medium</td>
<td>766</td>
<td>4.74</td>
<td>832.27</td>
<td>853</td>
<td>3945</td>
<td>2129 (53.96)</td>
<td>1816 (46.03)</td>
<td>59 (1.5)</td>
</tr>
<tr>
<td></td>
<td>Upper Medium</td>
<td>70</td>
<td>0.45</td>
<td>1035.55</td>
<td>1083</td>
<td>466</td>
<td>227 (48.71)</td>
<td>239 (51.28)</td>
<td>0 (0)</td>
</tr>
</tbody>
</table>

Source: Census of India, 2001, figure in the parenthesis indicates percentages.