Housing may be a symbol of man's occupation of land and serves as the link between the man and the environment. It may be regarded as a basic human physiological necessity and a fundamental human right. It remained in a state of neglect in India till the 1980's and attracted the attention of Indian planners only after the adoption of the global strategy for shelter in 1988. Apart from shelter, housing also includes important supportive systems like sanitation, drainage, water supply, road links and waste disposal etc. The main theme of this study is to investigate and analyse the housing problems and the other supporting systems as mentioned above in the study area in the Nalbari district of Assam in the light of Geography.

In the introductory chapter of the thesis the problem and organisation of the work have been stated. Aims and objectives and also method adopted for achieving the objectives are also outlined. Hypothesis, significance of the study, the review of relevant literature have also been introduced to project the depth of the problem. In the subsequent chapters a systematic approach has been attempted starting with examination of geographical, cultural and economic setting of the study area.
Chapter II consists of geographical setting of the Nalbari district. In this chapter, a direct approach to the socio-cultural and historical perspective has been adopted. A brief explanation of the very name of the studied region, locational significance and administrative units are discussed. On the basis of physical features three physiographical zones are demarcated: The northern foothill zone, the middle plain and active flood plain and charlands zone. The foothill zone contains an extensive tract of forests and as such settlements and houses are sparse. The central zone is very fertile and supports dense population and houses. The active plains including charlands support a large number of immigrant population.

Though, the climate of the district is similar to the climate of the whole Brahmaputra valley, it is discussed widely. Climate creates four distinct seasons in the district. These four seasons are winter, pre-monsoon, monsoon and retreating monsoon. All are discussed in the light of rainfall and temperature.

Drainage and water bodies are distinct phenomena, in the district. Of these, the river Brahmaputra occupies the highest place in the district. Others are the tributaries of the master river.

From the North to the South, the types of soil are grouped into three categories. The sub-montane soil is composed of sands, boulders, pebbles, gravels and silts
which cover from the foothill of the Himalayas to the border of old alluvium soil zone. The old alluvium soil is made up with clay which is suitable for tea cultivation. The new alluvium soil is made by the rivers and tributaries of the district with their sediments.

The vegetation are similar to the other parts of the Brahmaputra Valley. The main vegetation are tall savana grass, broad-leaves forest, bamboos and about 4000 species of different plants. The building materials of the villagers are derived from such plants.

The cultural setting includes population growth, density, sex-ratio, language structure, scheduled caste and scheduled tribe population, occupational characteristics and working force and rural-urban compositions. The population in 1931 was 274837 which rose to 1016390 persons in 1991. The densely block in Nalbari district in Pub-Nalbari, having 906 persons, per square kilometer. Blockwise male-female ratio indicates, the highest female population in Baska block is 957, per thousand male population.

The agricultural field site has covered most of the housing land in Nalbari district. Of the 803 inhabited villages 71.51 per cent of land is covered by agricultural field. So that, they can look after those cultivated regions.

The dry land sites possess a large and small cluster as per allocation of the agricultural land. This type of settlement sites are mainly occupied by the indigenous people.
The middle plain is eroded by innumerable river channels like the Nona, the Pagladia, the Burhadia, the Mora-Pagladia and the Tihu. This is extremely fertile for agricultural work and hence the belt is crowded. In this zone houses are built in large clusters and small clusters on the agricultural fields.

The active flood-plain-charland zone covers the riverine 'Char' and sand dunes and the flood affected areas of the river Brahmaputra. This zone is full of swampy lands and contains a large number of immigrant Muslim settlements.

The low-density housed-blocks are Baska, Barkhetri and Tamulpur. The cause of low density of houses in these blocks are lack of proper communication and transportation, effect of numerous spreadable diseases like malaria, black-fever, goitre etc. and lastly the deep jungle in these areas. Generally the shape, size, architecture and degree of improvement in the housing conditions are mostly determined by the socio-economic setting of the people.

The fourth chapter is devoted to the wide discussion of building materials. The building materials include grasses, leaves, reeds, bamboos mud, cowdung, jute-sticks, unburnt bricks, wood, G.I. sheets and other metal sheets, stones, cement, ekras thatch, tiles, slates, shingles, corrugated iron sheets, zinc sheets, asbestos cement sheet, bricks, limes, logs, mosaics, iron rods, asbestos plain sheets, plywood sheets, damp proof materials, different paints, lighting materials etc. Most of the traditional building materials are derived from
the soil and natural vegetation and modern materials are mostly imported from outside Assam.

These house building materials are collected from various sources. These are broadly divided into three major parts: inside the district, inside the state and outside the state. Some materials are collected locally e.g. bamboos, thatches, reeds, leaves, grasses, cowdung, bricks, jute sticks, ekras etc. These are collected inside the district. Some materials are collected within the state. These are cement, stones, woods, plywood, lime, planks, asbestos etc. and lastly some materials are collected from outside the state. These are G.I. sheets, other metal sheets, corrugated iron sheets, rods, tiles, slates, mosaics, damp proof materials, different paints etc.

Besides sources, building materials are divided into roof materials, wall materials and floor materials. The roof materials are also sub-divided into vegetable (grass, leaves, reeds, thatch, wood, mud, unburnt bricks or bamboo) materials, tiles or slate or shingles, corrugated iron or zinc or other metal sheets, asbestos cement sheets, bricks or stone or lime, stone concrete RBC or RCC etc.

The wall materials are grasses or leaves or reeds or bamboos, mud, unbrunt bricks, woods, burnt bricks, G.I. sheets, or other metal sheets, stones,
cement concrete, ekras, etc.

The floor materials are also sub-divided into seven types. These are mud-floor, floor wood or planks, floor bamboos or log, floor bricks or stone or lime, floor cement, floor mosaic or tiles and others. Of all these materials, mud covers 93.34 per cent in Nalbari district. The grasses or leaves or reeds or bamboos cover the highest position as well materials with 81.24 per cent and 36.91 per cent in rural and urban areas respectively. As roof materials, vegetable materials cover the highest position, with the percentage of 71.79 and 24.72 in rural and urban areas respectively.

Housing conditions include various housing amenities or facilities. Without these amenities a man cannot attain his all round improvement. These amenities are education, medical facilities, drinking water, post and telegraph, market or haat, roads and communication, power supply, cultivable land, irrigation, industries and financial institutions etc.

Nalbari district, truly speaking, is educationally, backward. The literacy rate in the district is only 55.99 per cent where male is 66.95 per cent and female is 44.19 per cent. It is due to economic backwardness of the different areas, which ultimately affects the proper housing conditions. The highest literacy rate in Pachim-Nalbari block is 59.58 per cent and the lowest literacy rate in Baska block is 4.24 per
cent. The literacy rate in Nalbari municipal area is 81.68 per cent and Tihu town area is 75.98 per cent. The whole economy of the district depends upon agriculture, of the total population of the district, about 76 per cent people are directly engaged in agriculture. The total cropped area of the district is 214895 hectares.

In the blockwise distribution pattern of total crop areas, the lowest and highest areas are covered by Barkhetri 2194 hectares and Tamulpur 46504.30 hectares respectively. Baska block has the highest percentage (81.74%) and Barkhetri has the lowest percentage (48.71) of cultivable land. This agricultural work helps to increase the all-round housing development of the district Nalbari.

Irrigation system is correlated with the agricultural work. Proper irrigation may increase the agricultural production which ultimately effects the proper housing. In 1991-92, 17807 hectares of land are covered by irrigation facilities.

Like irrigation, fertilizer and manure are most important for quantification and increase of quality in agriculture. In Nalbari district, 1613 hectares of land are influenced by 1188 tonnes of chemical fertilizer in 1992-93.

Livestock helps man and his housing directly and indirectly to the day-today life. For these livestock, separate housing is required. In Nalbari district the number of horses was 113, cattle 321,787, buffaloes 5,778, sheep 3,778, goats 13007, pigs 23068, fowles
In the Nalbari district the number of registered beel-fisheries are 18 in 1994-95 and the production of fish-seed and fish are 1118.4 lakh and 9762.57 M.T. respectively.

Sericulture and handloom are the secondary source livelihood of the population of Nalbari district. In the district the number of sericulture villages are 248. Number of villages covered by handlooms demonstration circles are 13.

Tea is the main earning source of the tea-tribes population. There are three tea estates, Doomni, Menaka and Nagrijuli in Nalbari district. In 1992, the production of three tea estates were 3302046 kg. within the areas of 1676 hectares of land.

The northern foothill area of the district is covered by reserve forest. It has many valuable trees like sal, Titachampa, Gamari, Bansoom etc. which are directly related to the house construction.

Though, industrially Nalbari district is backward in Assam, it has some rice mills, brick industries and cottage industries in the district.

Water supply in the Nalbari district is not so had. The whole district is connected with any mode of water supply. Both the towns and the villages are
provided with water supply.

In the field of health care system Nalbari district is lagging behind. In comparison to the population, Tihu-Barama, Baska and Pachim-Nalbari, have more than 40 per cent population served by medical facilities. Other blocks have only 30 per cent population enjoying medical facilities.

The total 736 villages are electrified in 1992, Pub-Nalbari block has the highest number of electrified villages with the 93.15 per cent and the Barkhetri block has lowest percentage of villages with only 54.81 per cent.

Transport and communication in Nalbari district is not so adequate. Only National Highway 31 is passing through the district horizontally. The state P.W.D. road passes through the Nalbari town to the remote areas. These roads may cover 1325 km which connect all circles and blocks.

There were only 1 post office, 39 sub-post offices, 188 branch post offices, 265 letter boxes, 1 telegraph office and 425 telephone connections in Nalbari district in 1991-92. In the blockwise distribution, Pub-Nalbari has the highest number of post and telegraph facilities and Borigog-Banbhit has the lowest, aforesaid facilities, having the number of 50 and 13 respectively.

The intellectual development of a society can be measured by the qualities and quantities of library
facilities. There are one district library and 17 rural libraries in Nalbari district.

Nalbari district has inadequate Banking and other financial institutions. So all round economic development of the district is interrupted. Only 51 commercial banks and 25 rural banks are providing financial facilities to the needy people. Only 102 villages have the market facilities. But no one is equipped with all modern facilities like cold-stores etc.

The chapter fifth deals with the housing problems. This chapter is broadly divided into three main parts: external housing problems, internal housing problems and problems of housing amenities.

The internal housing problems are the problems of site, problems of land or soil, problems of housing design and planning, problems of size, problems of housing materials, problems of cost, financial problems, planning and architectural problems, fencing problems, labour and technicians problems etc. The problem of site deals with the building or housing site or location. A house may be located either in the hill-plain contact site or in the forest edge site or in the active floodplain and charland site or in the middle elevated plain site which are selected by the dwellers.

The problems of land or soil creates major interruption in house construction. Scarcity of land and
fertility of soil can directly or indirectly influence the construction of houses.

Men use more money for housing construction. But they cannot explore the optimum utilization of these houses due to the lack of proper design and planning. Planning and design can provide a house with its dual and economic uses. But in Nalbari district, except official houses a few houses are constructed according to the norms of planning and design. The planning and design, always consider the need of the family members. How many people live in the house? What is their standard? How many rooms are required for them? And what materials will be used in the house construction? But Nalbari district is an economically backward district. Therefore majority of the population cannot use proper planning and design needed for the modern house construction.

The problem of size is the major problem in Nalbari district. The standard house-size is almost absent, only some official buildings and rich men's houses have minimum standard.

Housing materials are lacking everywhere in Nalbari district. Due to the increase of population, materials like reeds, thatch, bamboos, wood, cowdung are decreasing. So, men are to procure these materials from other areas of the state. Therefore house-building cost reaches to a higher position. The cost of the modern materials is much higher. So poor people, specially in
Baska, Tamulpur and Borkhetri blocks have to depend on traditional house building materials.

Among the internal housing problems the foundation and plinth problem is a major one. Majority blocks in Nalbari district are affected by flood water. So, plinths are to be raised above the flood water level. It is a very common problem of the flood prone areas of the district.

The second problem of the houses is the floor problem. The katcha floor are common in Nalbari district. In the rainy season, the houses remain damp due to katcha flooring, various viral diseases occur at that time.

Ceilings are uncommon in the houses of the poor people. So various problems including summer heat are to be faced by the dwellers.

Like ceiling, roofs cause a great problem to the people, mostly in rural areas. The thatched roofs are destroyed by various insects in the rainy season. So people have to suffer a lot at that time to these problems.

Most of the people make wall by bamboo sticks, mud with cowdung plastering. Except a few households, no brick wall is seen among the poor people's houses in Nalbari district. But, these mud plastered walls are destroyed at the time of flood. Almost every year, the wall has to be changed. So extra cost for wall construction is common to
the poor people. Lastly, the district suffers from various amenities. These are educational, medical, post and telegraph, telephone, markets and haats, power, roads and transport, drinking water, industries and cremation ground and grave yard problems. All these amenities are either directly or indirectly creating problems to the people of Nalbari district.

From the findings of the study the following developmental Planning measures are to be taken for solving the problems of housing in Nalbari district.

(i) To provide the better housing, the economic condition of the people of Nalbari district is to be improved. So, modernization of agriculture is to be introduced for the upliftment of economic condition of the rural people. Besides, small scale and cottage industries should be set up on the basis of agricultural products to improve the economy of the district for better housing.

(ii) The southern parts of the district are situated on the floodplain of the Brahmaputra. So these areas are very low lying. Some areas are covered by 'Char' and 'Chapari'. Most of the people living in these areas are immigrated muslim. Economic conditions of these areas are grim. These flood affected areas are mostly covered by traditional types of housing. For example, thatched roofs and walls are made up of jute sticks. Most of the houses are made of mud plastering. Rich people are also not using modern materials of housing due to bad road communication. Besides, most of the people in these areas
belong to scheduled caste. Their economic condition is also deplorable, so housing is too difficult to resolve. Thus, road communication is to be developed.

(iii) High density of population in Nalbari district, especially in the middle elevated plain zone is the root cause of poor housing. In this zone, the housing land is very low. So house conjunction is a frequent event. This affects the look of the traditional housing materials. So cost of house building materials is increased.

(iv) Due to the ever increasing population, the major parts of the land of the district are used for housing purposes. Even, northern forest cover of the district is swallowed by population - migrated from the southern part of the district. So the old housing materials like bamoos, thatches, reeds, canes etc. are not sufficient to meet the increasing demand of the growing population.

(v) Population distribution of the district is not uniform. The northern tarai zone is thinly populated and southern zones are thickly populated. So, the northern zone has more space and materials for house building. But as the southern zones are thickly populated, the housing space and materials are less which causes higher building cost.

The Government has now introduced many housing schemes to resolve the ever increasing housing problems in the district. These are "Indira Awas Yojana" (IAY),
State Housing Board, Co-Operative Housing Societies, etc. The housing financial institutions are like LIC, HDFC, HPFC, NCHF, etc.

Though these institutions are providing housing loans to the people, yet majority of people are deprived of it. So, private organization has vital role to provide better housing to the homeless people.

Till today, housing, the basic human need, has been met by the individuals themselves by their own personal savings. But housing has also a great potential for intervention of state and private sector. On the part of the district authority, there is need to facilitate housing finance, reduce legal barriers and promote role of N.G.O. in housing create a skilled construction workforce and replace environmentally detrimental housing technology by scientific, sustainable low cost housing technology which can be acceptable and affordable by all sections of people of the study area.