CHAPTER - 3

PHYSIOGRAPHICAL FEATURE OF THE AREA UNDER INVESTIGATION
PHYSIOGRAPHICAL FEATURE OF THE AREA UNDER INVESTIGATION

North Eastern Region of India covers a total geographical area of 2,55,037 sq. km. sharing about 8% of the countries total area. It has a forest area of about 47% of the total geographical area and represent 50% of the total flora of the Indian subcontinent. The region is rich in biodiversity (Dutta, 2002).

Assam is one of the oldest members of the seven sisters of North East India. It lies between 24° N and 28° N latitude and covers an area of 78,523 sq. km. The state comprising of two valleys viz. Brahmaputra Valley and Barak Valley being separated by N.C.Hills. The later is southern most part of the state which lies approximately between latitude 24° N to 25° N and longitude 92° E and 93° E. The whole valley, formerly included under a single district of Cachar is bounded by N.C.Hills and Jaintia Hills on north, Mizoram on south, Manipur on East and Tripura and Bangladesh on west. The total geographical area of the zone is 6941.2 sq. km. Which is equivalent to 8.84% of the states total area.

At present the valley has been divided into 3 districts viz. Cachar with head quarter at Silchar, Hailakandi and Karimganj with head quarters at Hailakandi and Karimganj town respectively.

The Cachar district lies between latitude 90.44°(E) and longitude 20.04°(N) and covers an area of 3786 sq.km. of which 1,43,270 hectares is
covered by the forest. The district accounts an average rainfall of 2910 mm/year. The maximum and minimum temperature of the district is 32°C and 11°C respectively. The humidity ranges from 75% to 80%. The district has warm and humid climate during the summer. The soil varies from alluvial to laterite, texture is generally clay loam to clayey. The pH of the soil ranges from 4.0 to 6.0. Laterite soil is generally found in the hill slopes and hillocks.

The climate of Barak Valley zone is subtropical, warm and humid. The average rainfall of the zone is 3180 mm with an average rainy days of 146 per annum.

The rainfall distribution in the Barak Valley follows a definite pattern. A high rainfall zone (above 4000 mm) is delineated in the north-western part bordering Meghalaya which incidentally comprises mostly high hill areas. The next rainfall zone (3000-4000 mm) covers the largest area spreading over the middle of the zone from high hills in the north and north-east to Bangladesh border in the west. The third rainfall zone (below 3000 mm) lies in the south of the previous zone and covers the entire southern part from Manipur border in the east to Tripura border in the west, including the southern part of Hailakandi district bordering Mizoram. In general, the rainfall gradually declines from North to South.

When the average annual rainfall in the three districts of Barak Valley are considered, Karimganj ranks first with 3694 mm followed by Cachar with 2910 mm, while Hailakandi registers the lowest rainfall of 2329 mm. Districtwise seasonal variation of rainfall and number of rainy days show that except winter in
all the seasons, the rainfall is higher at Karimganj in comparison to Cachar and Hailakandi district. Maximum number of rainy days during monsoon is same at Karimganj and Cachar districts whereas in Hailakandi it is lower.

The trend in the distribution of weekly rainfall is somewhat different in Cachar and Karimganj districts. Generally, the rainfall is more in Karimganj than in Cachar from 15th week to 41st week, covering the 2nd week of April to the 2nd week of October. The rainfall in Karimganj is particularly severe in 23rd week to 25th week corresponding to the month of June with weekly mean rainfall varying from 178 mm to 207 mm.

Normally the temperature in the Cachar district is congenial for growing most of the crops. The mean minimum temperature ranges from 12.2°C in January to 25.4°C in August and the mean maximum temperature ranges from 24.3°C in January to 32.0°C in August. The temperature range is therefore moderate and the winter appears to be less severe than other parts of the state.

The morning relative humidity (RH) is much higher (about 90%) than that in the afternoon. Further, monthly variation in RH is much less in the morning hours ranging from 90% to 92%, compared to that in the afternoon varying from 43% to 78%. Normally the morning RH is higher due to foggy weather in the winter than in the rainy season. The trend is, however, reverse for afternoon RH.

The main river of the area is Barak which flows in east-west direction originating from Naga and Manipur Hills; it ranges through the central portion of Cachar districts and northern most part of Hailakandi and Karimganj district.
The river bifurcates into Surma and Kushiara. While the Surma enters into Bangladesh, the Kushiara flows along the northern boundary of Karimganj district. These two rivers demarcate the Indo-Bangladesh Border up to their point of entry into Bangladesh. The Barak is joined by its tributaries like Jiri, Chiri, Madhura, Jatinga, Dhaleswari etc. from both north to south in Cachar district. On the other hand, the river Singla originating from the hill of Mizoram flows north-wards to meet Kushiara in Karimganj district. The river Longai originating from the hill of Mizoram traverses Karimganj district and enters Bangladesh through the north-west part of the districts by assuming the name Sonai.

Tentative soil map of Barak Valley shows five different types of soil composition viz. old riverine alluvium, Non-laterised red soil, laterised red soil and peat soil.

Vegetation of the Valley comprising of both evergreen and deciduous forest along with scrub jungles, presence of *Dillenia indica*, *Cassia fistula*, *Oroxylum indicum*, *Bombax ceiba* etc. indicates Tropical deciduous type of vegetation (Dutta et al, 1998).