Chapter 3

Study site
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3.1 Location and boundary

The state of Assam is comprised of three physical divisions, namely, the Brahmaputra Valley, the Barak Valley and the hill range. The Barak Valley region is situated between longitude 92° 15’ and 93° 15’ East and latitude 24° 8’ and 25° 8’ North covering an area of 6922 sq km. The valley constitutes 8.9 percent of the geographical area of the state but contains 11.22 percent of the population as per 2001 census. The region shares its border with North Cachar hills district and the state of Meghalaya in the North; the state of Manipur in the East; the state of Mizoram in the South and the state of Tripura and the Sylhet district of Bangladesh in the West. Administratively, the region is composed of three districts, namely the Cachar, the Karimganj and the Hailakandi. The Cachar is the largest district with total geographical area of 3786 sq km. The Barak valley region has an undulating topography characterized by hills, hillocks (locally known tillah), wide plains and low lying waterlogged areas (locally called beels) (Roy and Bezbaruah 2002). The present study was conducted in Irongmara and Dargakona village, in Cachar district of Barak Valley of North East India and is situated between longitude 92°45’ East and latitude 24°41’ North. Map of the study area is shown in Figure 3.1. The study villages dates back from the British colonial rule and most of the inhabitant of villages are tea garden labourers. The two villages have population of 6847 with 3523 males and 3324 females (Govt. of Assam 2001). Socioeconomically the villagers are small holders with paddy land as the major land use system and day labour as the primary occupation. Average number of people per family is 6.86 (range 2-20) with average number male 3.81(range 1-14) and female 3.06 (range 1-10). Community like Mala, Maal, and Pashi dominates the study villages.
Figure 3.1 Map of the study site.
Figure 3.2 Climate data of the study site (2003-2006).
3.2 Geology

In Assam the Tertiary deposits reach a very great thickness, probably exceeding that of any other part of India; where fully developed the sediments are more than 1500 m thick. Evans (1935) survey of Assam has laid the foundation of the stratigraphic classification of the Tertiaries in that difficult and inhospitable geological terrain. The Surma series has a wide extent in the Naga hills, North Cachar hills, the Surma valley of Assam, and extends southwards through Chittagong to the Arakan coast of Burma. It is composed of sand stones and sandy shales, mudstones and thin conglomerates, generally free from carbonaceous content (Wadia 1999).

The Eocene rocks occupy a large area in Assam. The lowest beds exhibit two sharply contrasted facies, one in the east of the province and the other in the west. With the exception of a narrow belt of interrupted Lower Gondwana outcrops stretching from Darjeeling, the oldest fossiliferous sediments of Assam region belong to the Cretaceous system. There are deposits of the Southern Sea which had no connection with Cretaceous Sea (Wadia 1999).

3.3 Climate

The climate of the study site is sub-tropical warm and humid with average annual rainfall of 2226 mm, most of which is received during the Southwest monsoon season (May to September). Southwest monsoon usually operates for a longer spell in the Northeastern region compared to the other parts of India. Average maximum and minimum temperatures were 30.5°C and 20.3°C respectively. The climatic variable of the study area is represented in Figure 3.2. The average relative humidity varied between 48 percent (January) to 97 percent (June).
Figure 3.3 Village bamboos in rural landscape of the study site.
3.4 Forests

The Barak Valley region has 3833 km$^2$ of total area under forests which is about 54.39 percent of the total geographical area (6922 km$^2$) of the region as against 35.24 percent for the state as whole (State of Forest Report 2005). The estimates of forest cover in Barak Valley reveals, Cachar district represents the highest percentage with 58.76 followed by the Hailakandi district with 58.85 percent and the Karimganj district with 46.04 percent of the geographical area of their respective district (State of Forest Report 2005). The forest resources currently on economic use include timber as well as non-timbers like bamboo and cane. According to Champion and Seth (1968) the forest vegetation of Barak Valley comes under Cachar tropical evergreen forest (1/1B/C3) and Cachar semi evergreen forest (2/2B/C2). Bamboos in the valley have been classified into Secondary Moist Brakes (1/B/C3/2S1) and Dry Bamboo Brakes (1/B/C3/E1/2S1). Bamboos of the valley are primarily seral type. Its occurrence is attributed to heavy biotic interference in the evergreen and semi-evergreen forests.

Village bamboos in the rural landscape of the study site are shown in Figure 3.3. Village bamboos in the traditional homegardening system are grown at the periphery and backward of the holdings and are also often managed in a separate zone within the homegardens or in the extended land in a pure or mixed with other vegetation.