

CHAPTER 4

RESOURCE INVENTORY IN THE STUDY AREA

4.1. Resource Inventory

“The human values of preserving natural environments will expand dramatically in the future as surrounding lands become increasingly modified by humankind. However, these values are contingent on the effectiveness and success of our managing these irreplaceable resources. The threats to these resources are numerous, pervasive, and intractable” (Marion, 1991).

In both the villages people settle because they are dependent on nature. People of both the villages moved in search of alluvial land, water and forest so they can extract resources from them. Many agricultural labourers come to the area in search of agricultural land. In early period of settlement there were lots of resources available in both the villages but as the time passed, slowly the landscape changed and people modified their neighbouring area with the help of their ideas. As the population increased the people start to clear forest and started cultivation. There should be some condition for the settlement of people. if the settlement is fulfill by nature than in very short time settlement increased.

In Lokampur village the people first settled nearby the road and slowly the settlement moved in to the village area (Fig 4.1). In this village, road is plying a significant role in pulling the population in the village. Because of road connectivity the people easily come and settle in the village. Also the job opportunity available in the Doolohat tea Garden pulled the people to settle in that area.

In Dolicoto village people in the early period migrated from nearby areas for jhum cultivation. Farmers always seek for the forest patches for jhum and for domestic fuel. From the starting time of this village till today most of the population extracts resource from forest and they are dependent for that on the forest. In Dolicoto village settlement is near the road and foothills because that area is suitable for the settlement and also found to be plain and people easily can construct house (Fig 4.2). People of this village settle in one place and practice jhum in uplands. There is no any road condition for the people of that place because most of them are practice jhum, for that they required open forest area. Also they keep *Mithun* (Gayal) and these *Mithuns* graze in the forest.

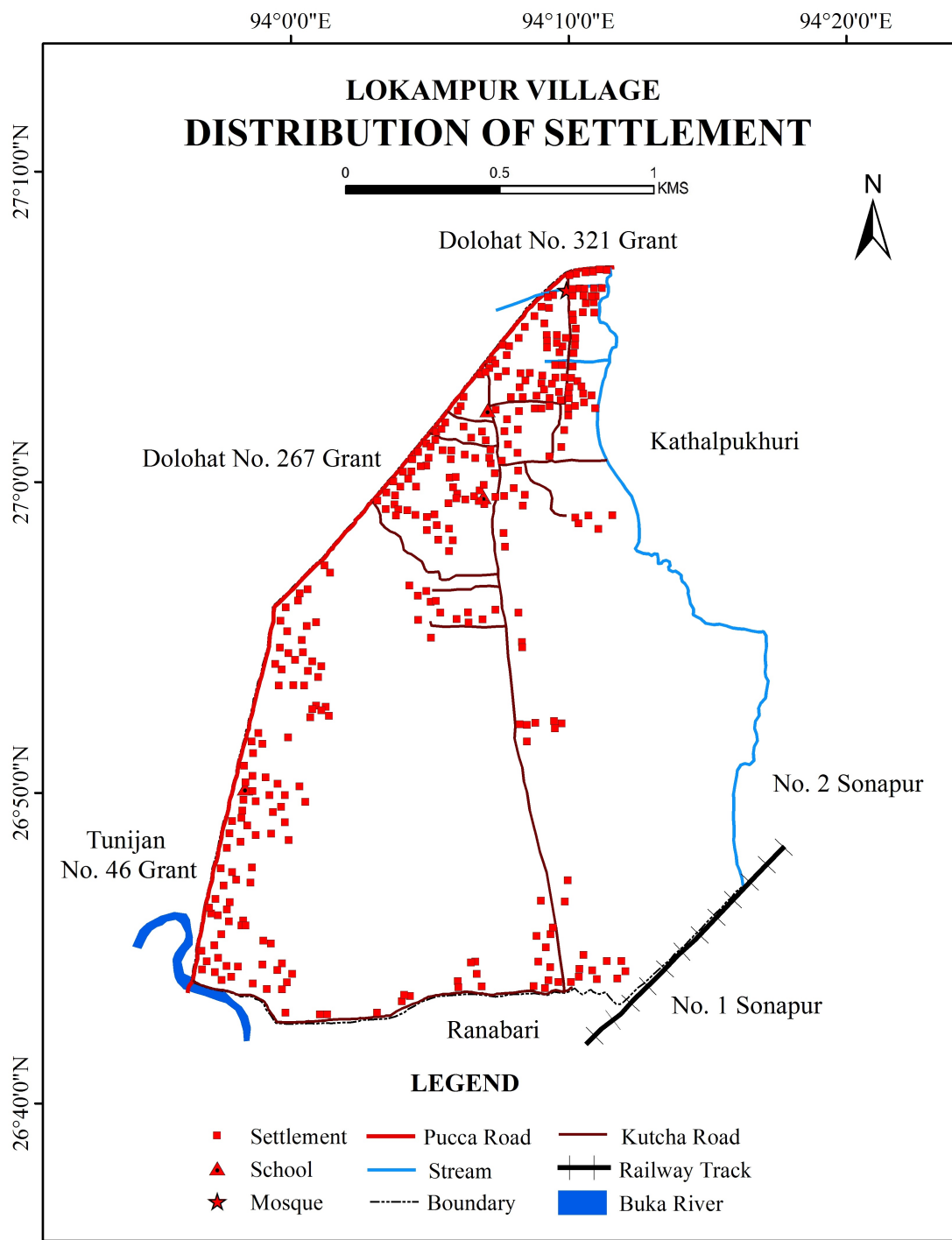


Fig 4.1: Settlement in Lokampur village.

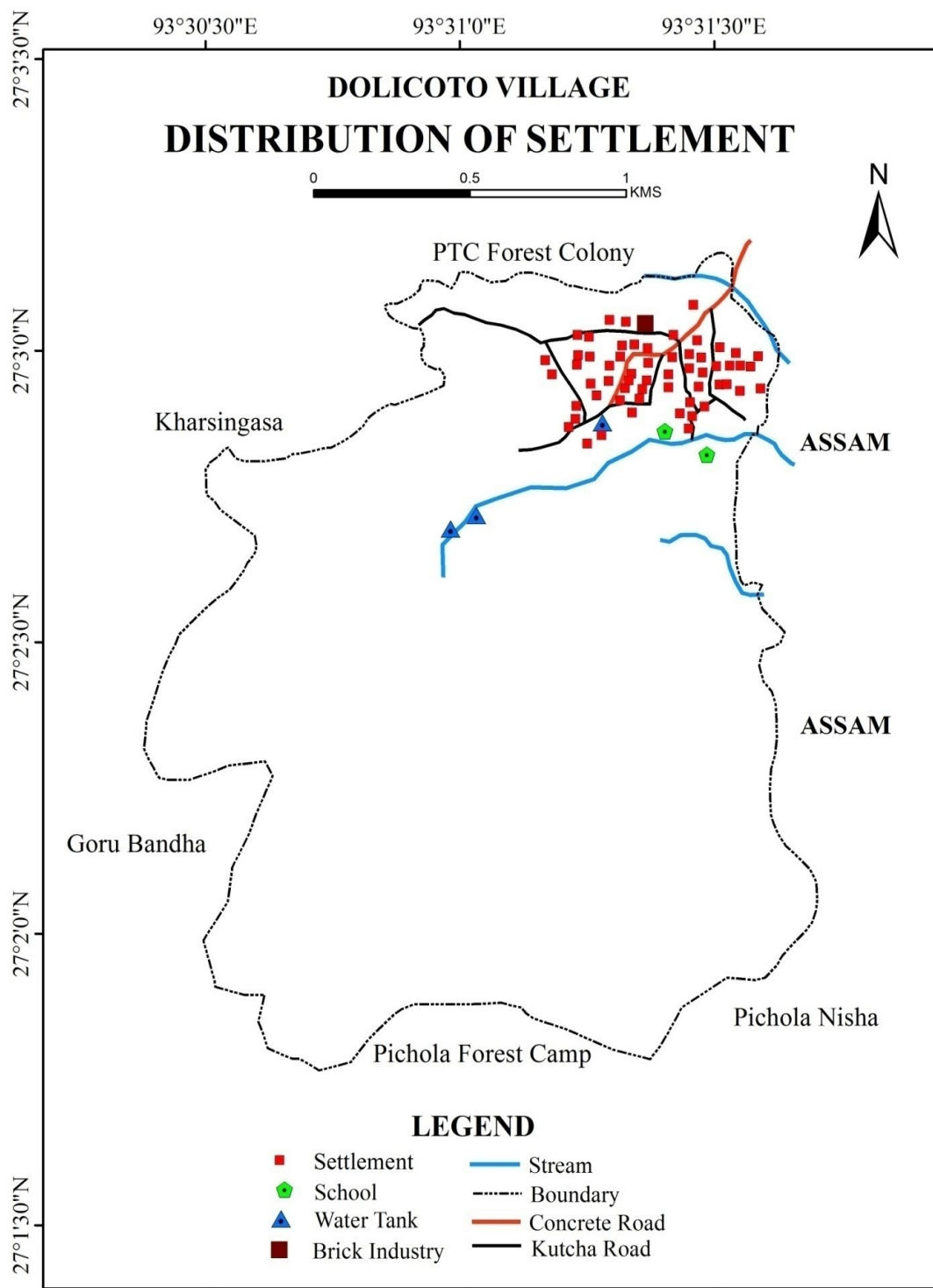


Fig 4.2: Settlement in Dolicoto village

4.2. Forest resources

Ever since human habitation takes place in an area, people start extracting the resources of its nearby areas, be it forests, land or any other. Similarly, the study areas selected have the same kind of situation though the starting, rate and trend of resource utilization is different since the origin of human habitation in both the villages was different.

Lokampur, located in the western part of the district of Lakhimpur in Assam had its first human settlement in 1934 and the settlers were from Jharkhand, Bihar, Orissa, Chhattisgarh and West Bengal. They were brought to this area by the British as tea labourers to work in Doolahat Tea Estate. Thus, they have settled in the area and later named it as Doolohat. With the emergence of human settlement in the village, people have started extracting the resources from its neighbouring areas that are locally found from the nature. Since, abundant forests were available in the village; they have utilized it over time and made it an important resource for themselves.

At the very beginning, forest resource extraction was started by the British as they cleared forests to set up tea gardens in the area. Then there came the labourers who first extracted forest resources for building their houses. Thus, they started cutting trees for timber and bamboo for various other purposes. Besides, the people have also started using the forests as domestic fuel to cook food.

On the other hand, Dolicoto is a tribal village of Papum Pare district of Arunachal Pradesh where first human habitation took place in the 1980s. The people while shifting their jhum lands came to that place and practiced jhumming there by clearing forests. While dwelling with the place, they have permanently settled in the area and thus, for building houses they used the forest resources. In the process of jhumming the people have cleared the forests in the southern part of the village and thus, deforestation has popped up as a new problem in the area. Besides, collecting firewood from the forests has become another source of forest resource extraction.

Domestication of *Mithun* is another characteristic in Dolicoto village. They rear it mainly for milk and meat. It is interesting to note that the people do not have to collect fodder for these animals rather the animals are set free in the morning and they eat grasses and leaves of trees and plants all day long in the forest and return back themselves by the evening.

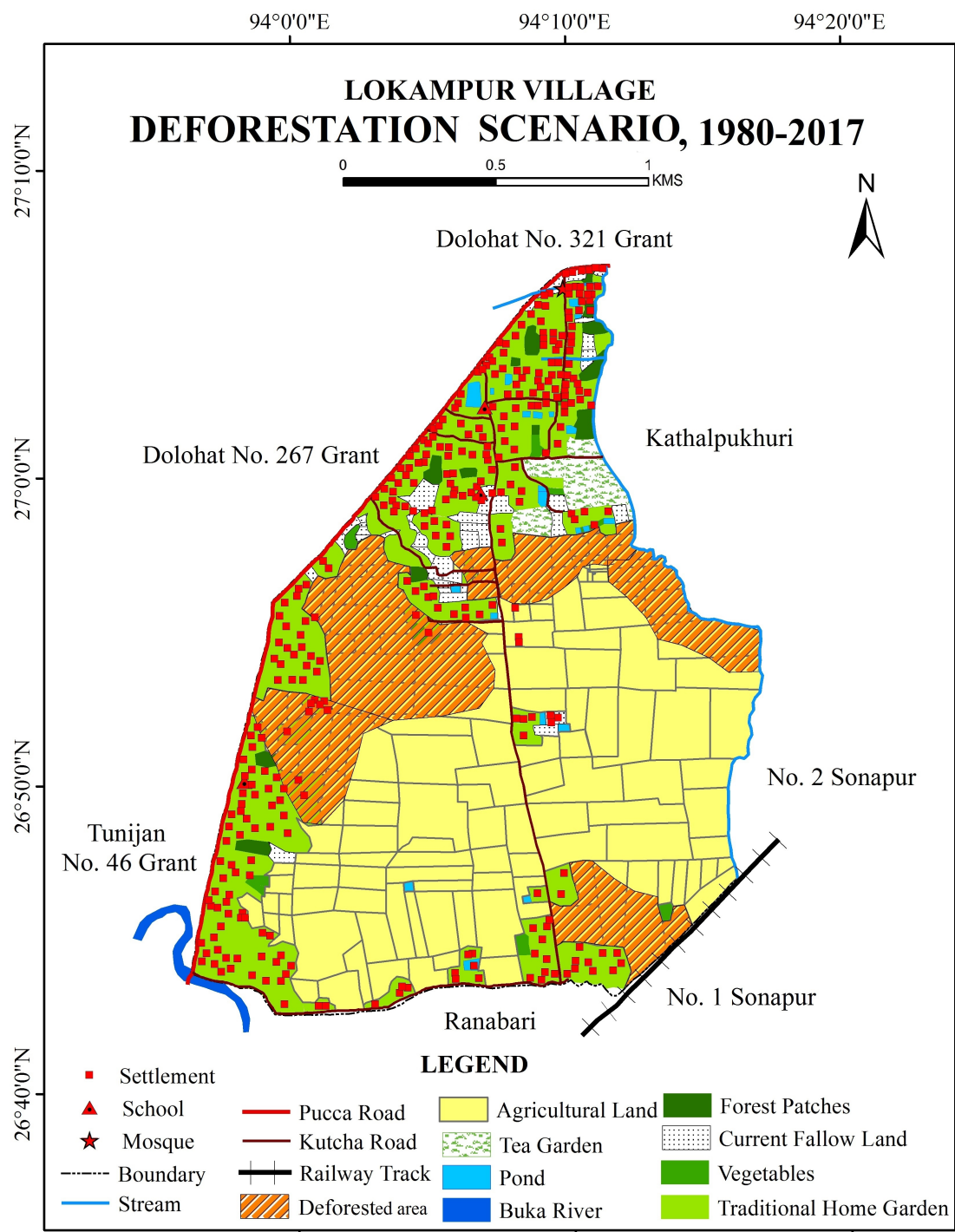


Fig 4.3: Deforested scenario in Lokampur village

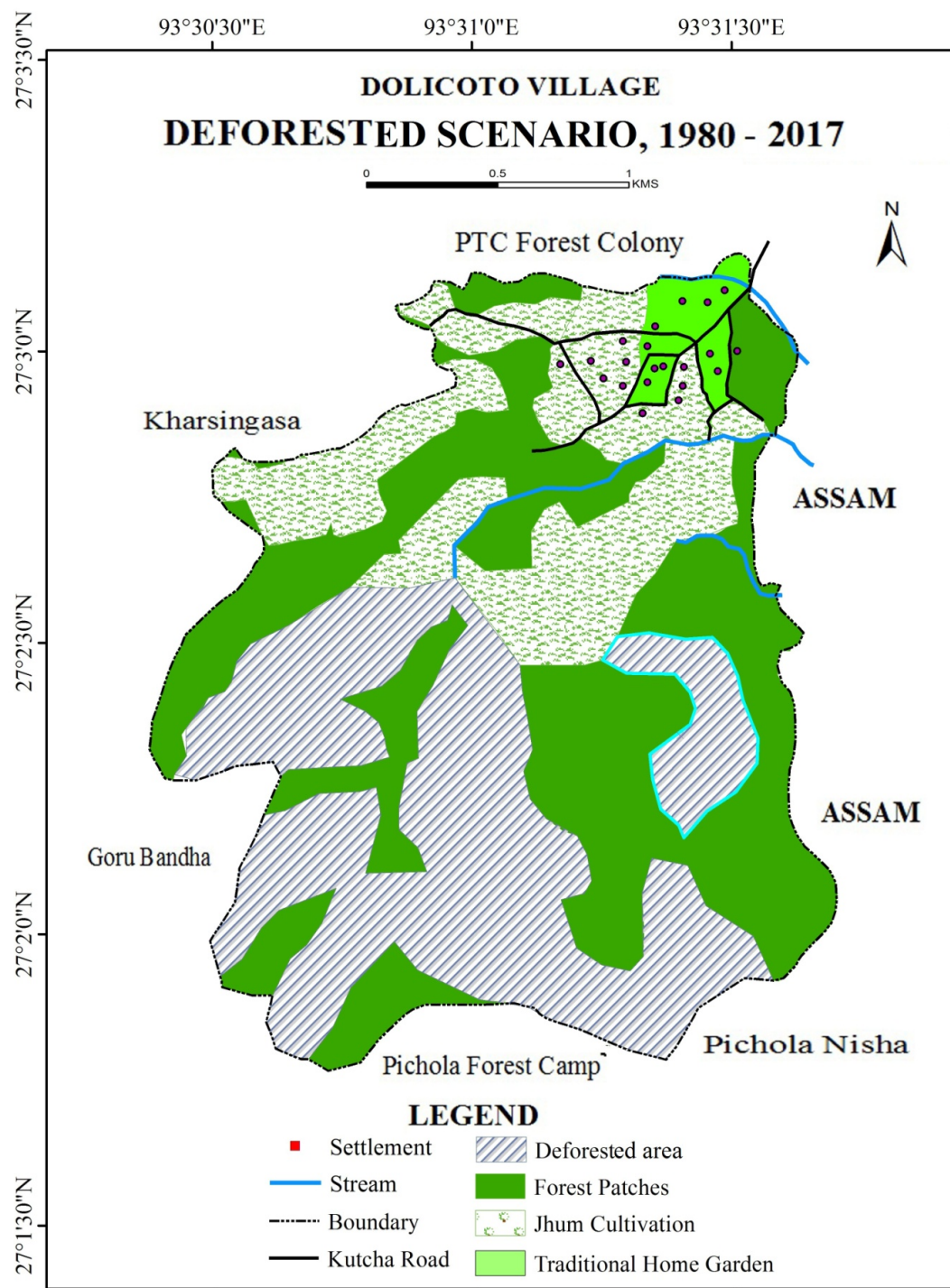


Fig 4.4: Deforested scenario in Dolicoto village



Plate 4.1: Forest resource used for domestic fuel and grazing

4.3. Agricultural resources

Agriculture, being the main occupation of the people in both the villages of Lokampur and Dolicoto has dominated the natural landscape with cultural elements. Tea industry is very important in Lokampur village as it is practiced since their settlement. Tea plants have been well cultivated in the area.

Sali rice (winter rice) is the main crop that is cultivated in agricultural fields of Lokampur village and during winter only vegetables are cultivated. Some people have converted the winter rice fields to tea growing areas as they need only one time labour. In winter rice fields, the farmers had to keep themselves engaged in fields continuously but in tea plantations such engagement is not required so they have shifted from cultivating rice to grow tea. Thus, the number of farmers in the village has decreased in the last few years.

It is interesting to note that earlier people cultivated rice in the lowlands having stagnant water which can sustain the farmers the whole year. Hence, agriculture before 20-30 years was confined only to the lowlands. But now, as the number of people has increased with time, the agricultural lands were expanded to the areas which are relatively higher and agriculture was not practiced previously on such lands. Thus, the process of expanding their agricultural lands has been going on till date. However, shifting of occupation is another matter of serious concern where people have left practicing agriculture and instead joined in various business organizations, industries, etc. The children of the farmers are even not inclined to agriculture rather they prefer working in some small vendors as tea garden labourers, security guards, construction workers, salesmen, etc.

Earlier the people of Lokampur cultivated crops by themselves and thus they can enjoy all of the produce. But now the people of the village give their land on lease to those farmers who have not shifted their occupation and thus another system of agriculture is being maintained. It should be mentioned that earlier a particular farmer used to cultivate his lands either by himself or by engaging his family members and thus agricultural production was confined to them only as the mode of agriculture was self-subsistence. But as lease system has been dominating the agriculture more labor is being engaged in the fields to produce more so that the farmers gets much profit as now agriculture has become profit-oriented

Another important aspect of Lokampur is that though forests areas were earlier cleared for practicing agriculture but now-a-days some of the agricultural fields have been replaced by

human settlements. With the growth of population, people have started settling in the agricultural fields thereby, occupying the fields and hampering in crop production. Again with the increase in the number of population, fragmentations of lands have become very common.

Again due to clearance of forests, settlements in the agricultural fields, grazing lands have been decreasing due to which the people who domesticate animals had to feed fodder to them. As it gets difficult for them to collect fodder for their animals, the owners leave their animals in the tea garden at night and thus they graze themselves inside the gardens. But the animals are caught by the security guards then, the owners had to pay fine and take their animal back to home.

The scenario of agriculture in Dolicoto is different from that of Lokampur. Being a hilly area, people find it difficult to cultivate on the highlands. So they adjust themselves to the slopes and practice jhumming there. People of Dolicoto village start jhum cultivation process with the celebration of festival like Nyokum and Boori-boot Yullo etc. They practice jhumming with natural fertility of the soil as earlier, they cannot afford to pay for the fertilizers and thus even in the present time, and they are not using it as they have not used it earlier. The jhum cultivators with their traditional knowledge plant rubber, teak, bamboo etc. because these plants grow well in such areas and thus while planting these plants the farmers clear other trees and plants in the area to grow them. Consequently, deforestation has also become a major problem in Dolicoto.

The farmers while setting their lands on fire to regain fertility sometimes become unmanageable and thus it takes into consideration a large part of the forests area and creates destruction of forests at a large scale. On the other hand, they farmers had no option but call help from the fire brigades to combat the fire. Two such cases in 2002 and 2004 were very remarkable due to their large scale destruction.

Another important aspect of agricultural fields in Dolicoto is that there is no demarcation of agricultural fields of a particular farmer. Instead, the fact is that all the land belongs to that farmer how much he can clear the forests and in this process deforestation has become a serious problem in the area.

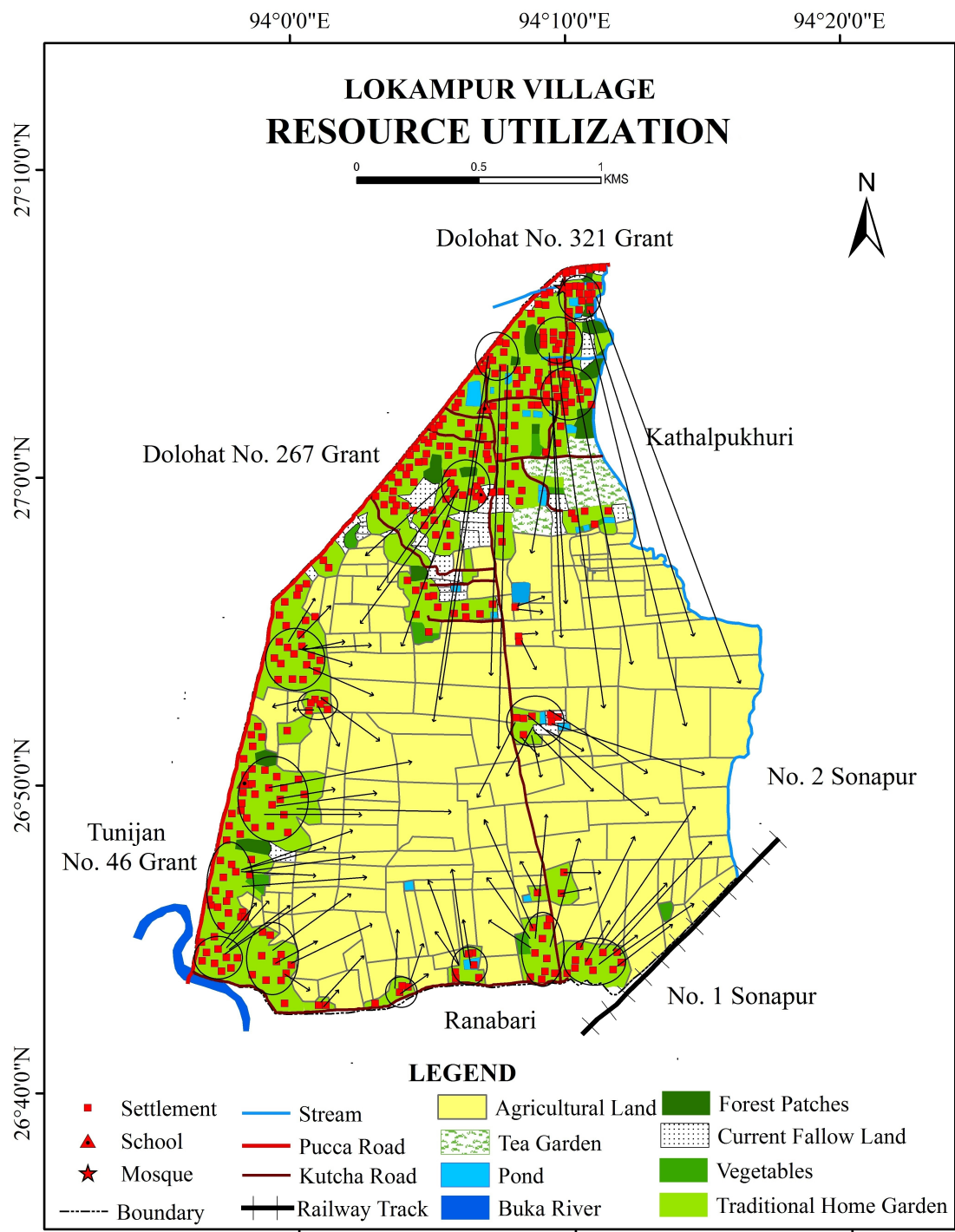


Fig 4.5: Agricultural area in Lokampur village

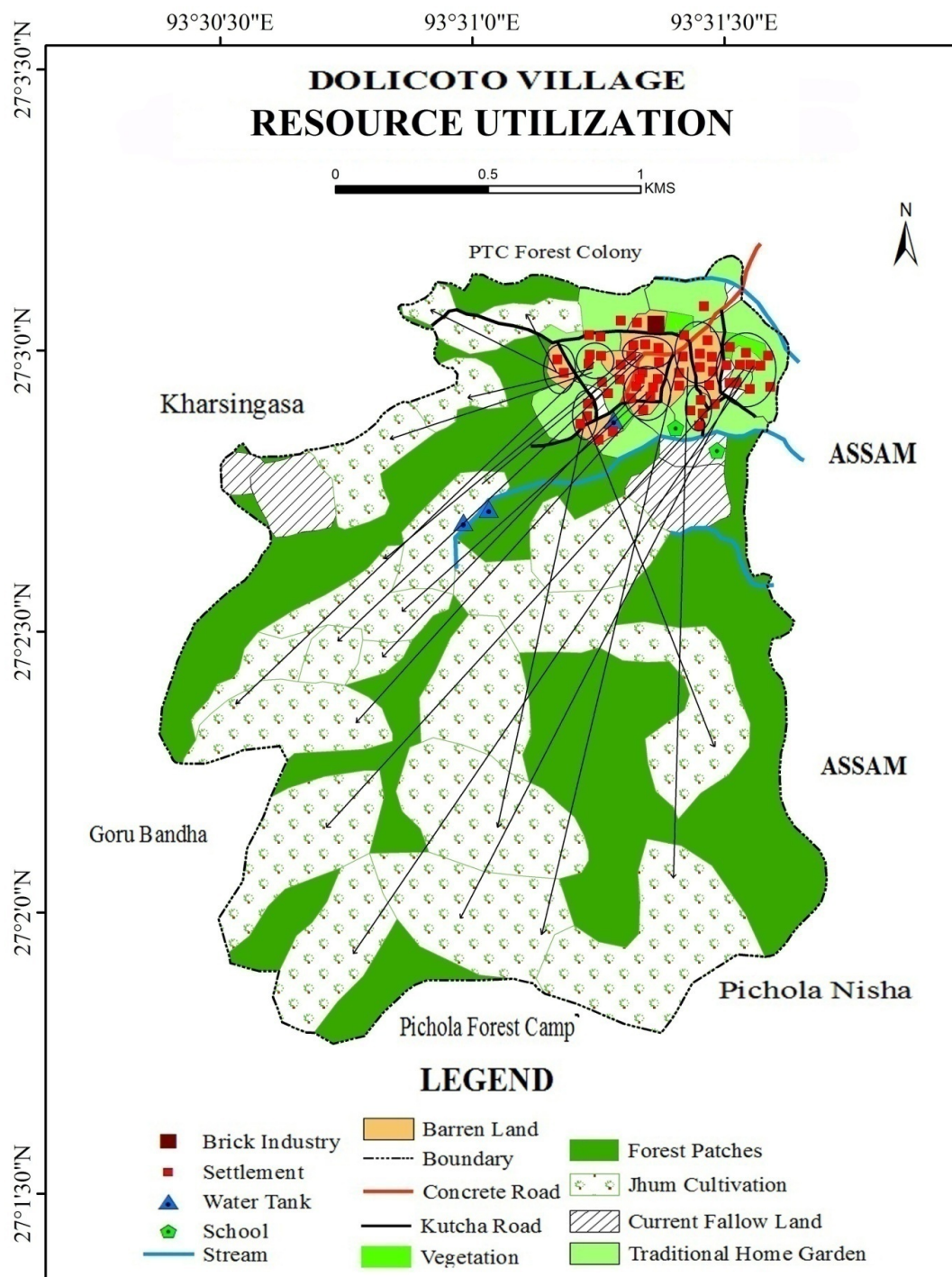


Fig 4.6: Agricultural area in Lokampur village



Plate 4.2: Land resource used for cultivation

4.4. Water resources

The people used to drink water of the *khals* (natural ponds) and the stream that flows through the eastern part of the village forming the eastern boundary of the village. The water of the stream is also used in the agricultural fields. The farmers in the village earlier depend on rainfall to plough the land for agriculture as they were purely on nature. But later on, people used the water of the *khals* and *pukhuris* while ploughing the land and mainly after 2010 people started using diesel motor pumps to irrigate the fields and thereby improving or increasing agricultural production. Again the water of the stream is also used for various other purposes like bathing, washing clothes and utensils, source of drinking water for animals, soaking of rice saplings, etc.

Besides, in the northern part of the Lokampur village, people have dug *pukhuris* (ponds) to collect the rain water and use it according to their convenience. When there is dearth of rainfall, the water of such *pukhuris* is used in the agricultural fields which help them in cultivation of various crops. Besides, some people have used the water of these ponds for drinking purposes and other household works.

But mainly after the 1980s, the people have installed pucca wells hand pumps to draw underground water for various uses. Thus, the source and extraction of water resources for the need of the people have changed with time which has changed their lifestyle to some extent. However, some people still use the water of the stream and ponds located nearby. It is to be noted here that during winter, the water level of the ponds, tube wells and ring wells go down to 12-14 feet while during summer, due to sufficient rainfall the water level of the ponds rise up and along with that the water of the hand pumps and ring wells are also available easily at lesser depths like 7-9 feet.

On the other hand, Dolicoto has four streams from which people use the water. The water of the stream is captured in the upper part of the mountain in a tank which is then drained into another tank in the lower hilly area. The water from this lower tank is distributed to the people of the village through pipes. But, there occurs during the rainy season as water of the stream gets muddy with erosion of the land caused by the flow of stream water. Thus, the water during the rainy season becomes unfit for the people to drink. In such a situation, some people drink water of the tanks by filtering it through homemade filters while some others do not even filter the water and drink it as it is.

On the other hand, it is interesting to note that the households of people living in the places located at a higher altitude than the water tank cannot access water from the tank. So they have made out an alternate way of getting access to water facilities. It is mainly after 2014 that these people have fitted electric motor pumps and deep drilling of water pipes so that they can fetch water without any difficulty.

Another interesting fact is that as people in Dolicoto mainly practice jhum cultivation so there does not need much water for it. Thus, there is no irrigation system in the village rather they depend on rain water for their cultivation. Even there is no rain water harvesting procedure followed in the village. Only levees are built in the jhum lands so that rain water can retain in the fields and help in the growth of the crops.



Plate 4.3: Water resource used for different purpose

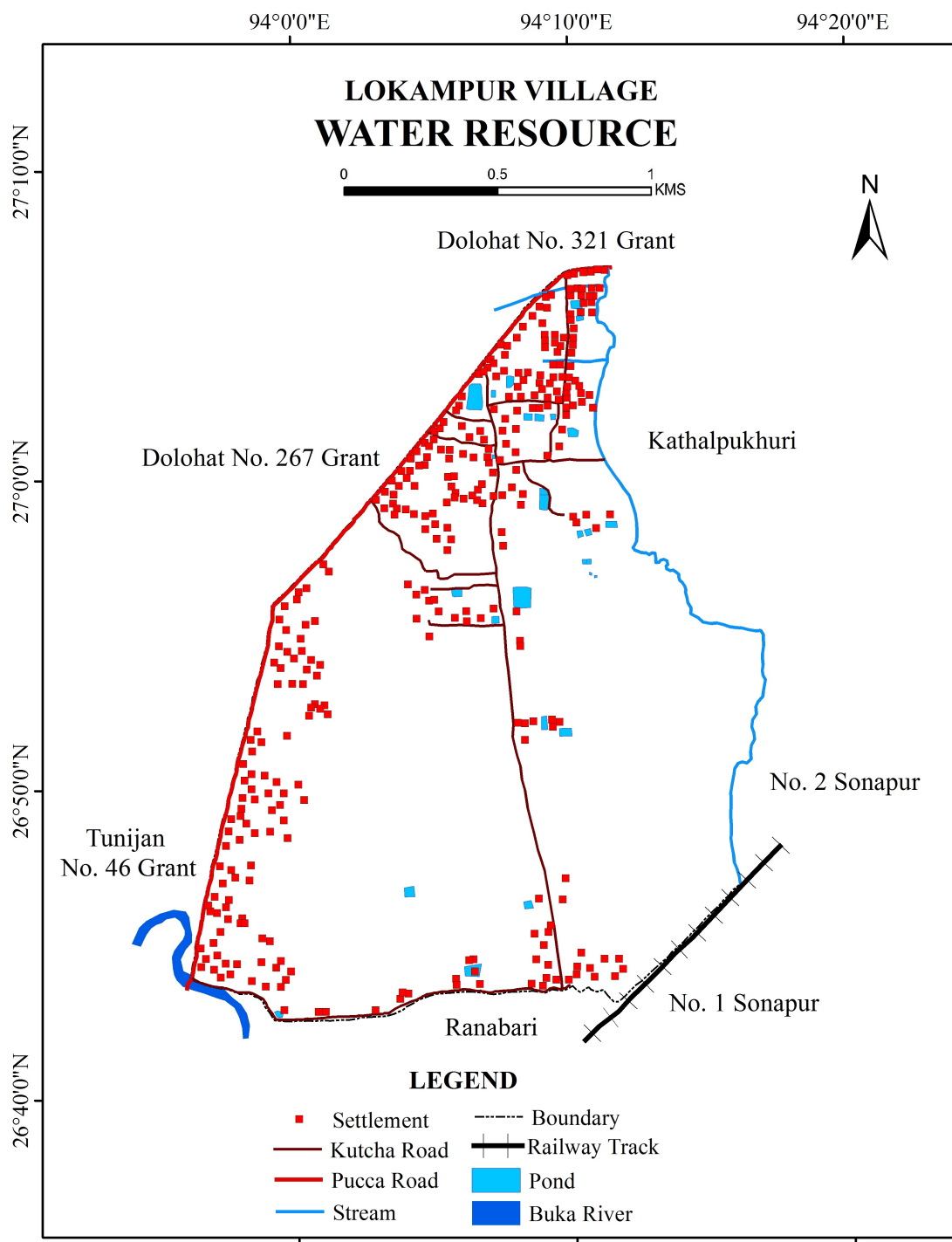


Fig 4.7: Water resource in Lokampur village

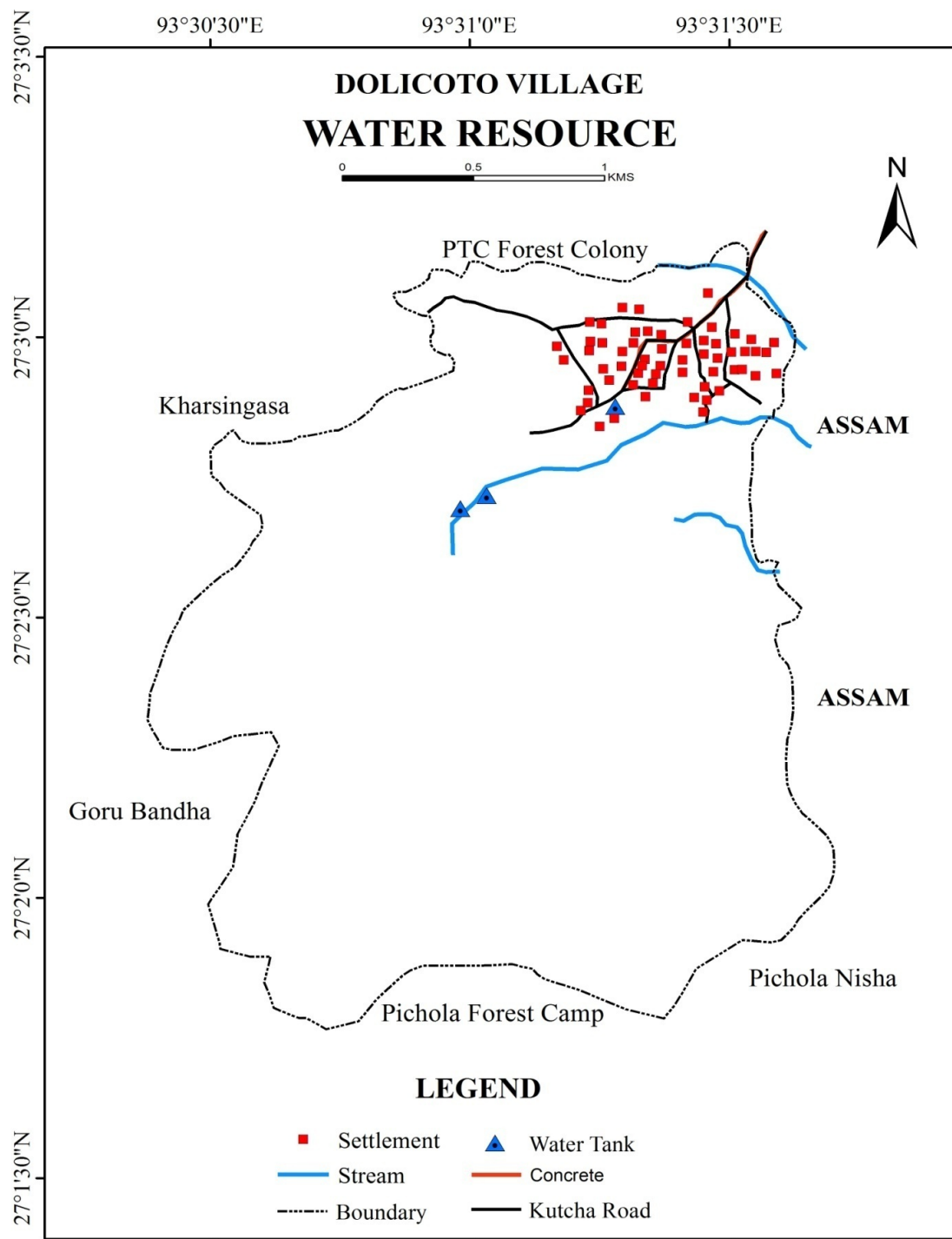


Fig 4.8: Water resource in Dolicoto village