

CHAPTER-IV

URBAN MORPHOLOGY AND LAND USE IN COOCHBEHAR TOWN

4.1 Introduction:

This chapter deals with the morphology and land use of the study area and to find out the characteristics of Cooch Behar town. The layout and the internal structure of the town, the arrangement of various types of functional structures and the pattern of roads and streets which go to make up the morphology of the town is the great geographical interest. The very fact that a town has developed through the time, occupying a particular site and serving one or more purpose, tend to influence its physical form (Sing, 1994). Examination of the morphology of a town should take into consideration both the external form and the outline of the town, finally limited by its municipal boundary as well as the internal details of their mutual functional relationship. As is the case with the most of the older towns in India, the study of morphology should also include both the natural, uncontrolled and unplanned part of the town of earlier origin as well as the planned and consciously developed part of later origin and the relationship between the two parts (Lodha, 1969). Though the morphology of the town under study exhibits both the planned indigenous form, lacking unity and uniformity of layout and giving an impression of haphazard growth as well as the planned form, yet morphologically the town does not strictly conform to typical Indian towns either of the former British provinces or those of West Bengal or even those of the region to which this town belongs.

In this chapter the study also aims to represent the Land use pattern in Cooch Behar town and to find out the space and direction of land transformation in the town. The land use of various sort are so mixed type, which is related with the type of activities in different parts of the town. The structural form of the town helps the residents to find every necessary thing within their walking distances. Urban landscape is therefore

undergoing alteration at all times as it grows in size. The methods adopted for this study has a rationalistic one being associated with various statistical and quantitative techniques. The data and information has been processed, analysed and the results derived from statistical and quantitative methods have been presented by suitable cartographic diagrams and methods.

Land use survey was made for several times due to non-availability of land use maps, published materials. The distribution of different land use functions in the wards of the town is shown in figures in the different sections below.

4.2 Morphology:

Urban morphology is the study of the form of human settlements and the process of their formation and transformation. The study seeks to understand the spatial structure and character of an urban area or village by examining the patterns of its component parts and the process of its development. Urban morphology is also considered as the study of urban tissue, or fabric, as a means of discriminating the underlying structure of the built landscape. This can involve the analysis of physical structures at different scales as well as patterns of movement, land use, ownership or control and occupation.

4.2.1 Morphological pattern:

The morphology of any city or town is dynamic in nature. The term 'urban morphology' refers to the physical arrangement or structure of a town, it consist of buildings, pattern of streets and their different functions, densities and layout. Definite zone for different urban functions is found in the town landscape, across the urban area, one passes from one zone to another zone with changing landscape and socio-economic environment. The urban morphology is determined by a number of predetermined general principles of land use and location (Ghosh, 2011).

A morphological pattern of the town is a set of associations and operations that built its various forms and structure (Figure 4.1). It is important to distinguish the forms and structure of the town from a morphological pattern. Morphological survey reveals that the Cooch Behar town has overall above 40% residential area. There are some wards which have above 50% settlement or residential coverage. The ward which is surrounded by rural-urban fringe area is much more populated than the wards which are in the central part of the town. Mainly the central part of the town has been covered with the commercial and administrative purpose. There are some wards namely ward

No. 19, 20, 8, 10, have below 20% area under residential area. The causes behind the low settlement of these wards are covering of administrative and commercial activities. But most of the town is covered with residential purposes. Some wards are fully residential and even in some wards like ward No. 2, 12, 14 residential areas are found above 70%. From overall view point the town morphologically is looking like a residential town. Beside the residential purpose there are some wards of the town which look into the public use of morphological pattern. But few number of wards whose residential area is low as these are covered by administrative and educational purposes. It is also found that roads and transport system is very unsystematically spreading. In the town private and mixed uses keep very low impression.

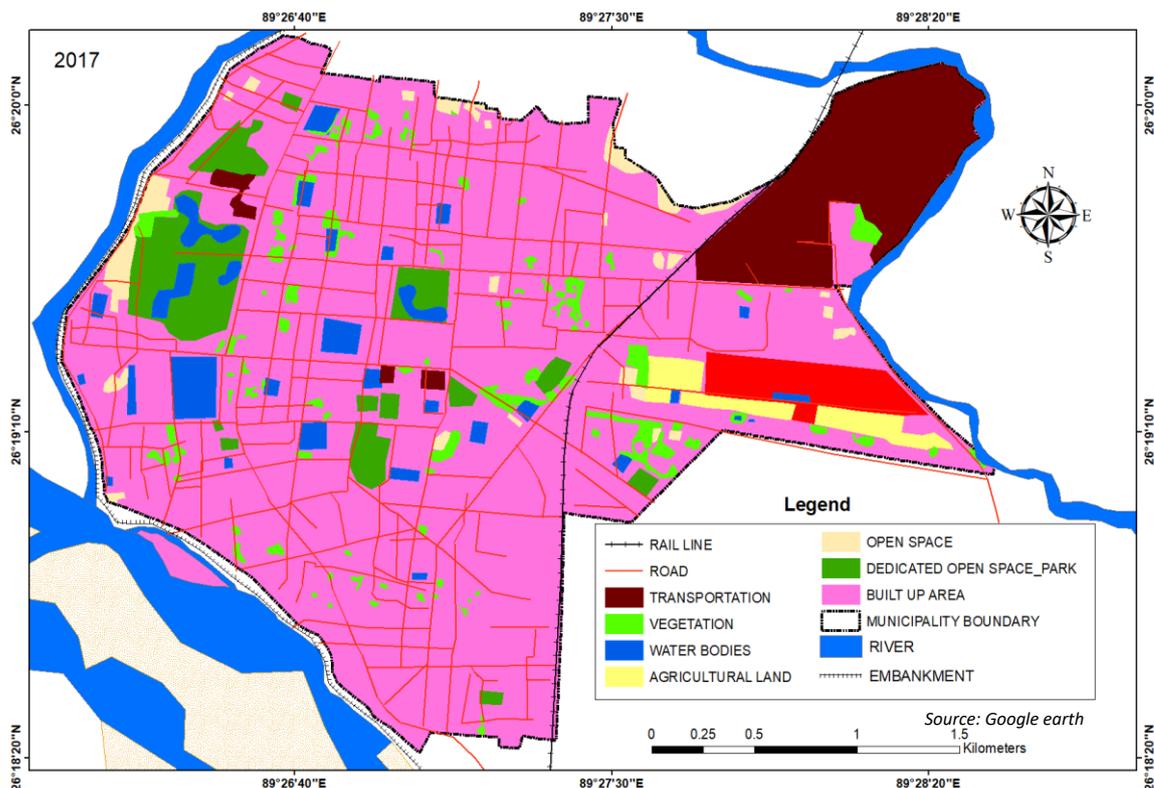


Figure 4.1: Morphological pattern of Cooch Behar town.

4.2.2 Morphological development:

The town depicted the concentric zone form in the early stage of its development process. The C.B.D. consists of financial organizations with retail outlets. In the early period up to 1950, the town grew ground this commercial centre in a more or less

concentric form. People of higher income group occupied the large plot at the fringe. Later with further expansion it reveals a semi-circular form as river Torsa restricted the expansion of the town in the south. The changes in the circulations of water, energy and materials produced by urbanization modify the landscape of the town.

Urban morphology is actually the layout of a town both in its historical as well as geographical contexts which gives it individuality. Its morphology represents various elements which form the part of its structure, plan and growth. Its relief and terrain play the significant role on which its nucleus seeks origin to form a base. The nucleus shapes by streets and roads, houses and building finally develops its functions as a trading and commercial centres with all the complexities of its administrative and cultural services. Its plan during the various phases of history may change to cope with changing urban scenario. In India the town plans represents the sequence occupancies of settlement by their inhabitants during the course of past history right from its origin to the present day (Stamp, 1962).

Traditional models relating to the growth and structure of town is partly applicable in Cooch Behar town. The classical models deal with the internal structure of the town. According to the Burgess's concentric zone model in 1923 cities expand outward from the city centre (C.B.D.) by creating concentric ring of commercial, transitional, residential of lower and higher income group respectively this concentric zone model was based on the land use pattern of Chicago (Mandal, 2000), which is partly applicable in the early stage of development of some Indian cities like Cooch Behar town. Different land use patterns around several commercial centres as per multiple nuclei model is not applicable in the case of Cooch Behar as the town has only one commercial centre (Bhabanigunj bazaar). This theory helps to understand the out ward expansions of Cooch Behar town. The central part of the town has less land for more people as demand and land value both are high in the business area, which results in multi-storeyed buildings and slums are around Bhabanigunj bazaar and more specific houses are occupied by single families at the fringe as stated in this model.

The town area which had more wasteland and open space in 1971 shows a complete change of land use by 2001. The agricultural land use has almost disappeared at the fringes. But in 2011 the areas census town, having less urban activity are found with agricultural lands. There is an increase in all the urban activities. The southern side has natural barrier followed by the river which prevents growth. The land use study

indicates the large-scale growth of residential, commercial, transport and other activities. The communication lines have played important role in the spatial growth. The extended areas show the absence of commercial activity, hence the centre is burdened by commercial activity catering to the multiple growths of commercial activities.

4.2.3 Changing morphology:

Though Cooch Behar town is a planned town but the present morphology of the town is like an unplanned old Indian town, with narrow lanes, crowded shops and densely populated residential area. The C.B.D areas developed in the heart of the town, is still maintaining its prominence. The slum areas are sparsely distributed over the town especially in C.B.D. area and along the railway track. In precisely speaking the morphology of a town is a geographic-historical interpretation of its site situation or existing layout and arrangement of houses as well as streets and roads. It also includes within its purview the development of different parts of the town and analysis of its boundary in different phase of history as well as explanation of existing land use.

Cooch Behar town in 1900- During this century, the land use in Cooch Behar town has characterised by the presence of jungle, marshy land and paddy field. According to Hooker, many paddy fields were present in the midst of the settlements (Hunter, 2012). But the beginning of the last century, the urban appearance in Cooch Behar becomes visible with the population reaching to 3102 persons. A small commercial area was situated at Bhabaniganj bazaar. Only some small scale industry (Cotton mill) was established by the local businessman. The main residential area was concentrated at the east of river Mora Torsa near Rajbari and in Biswas para, Subhas pally, Hazrapara area. At the East bank of river Torsa the residential area was scatteredly situated around Natunbazar, Ghoshpara area. Administrative units like H.P.O., Kutchary (Court), community hall, municipal office were the only brick built offices at the time, situated middle part of the town and around Sagardighi. Other public offices were kutcha houses with tin and thatched roofs. The major roads of the town were narrow and unmetalled. Other roads were found in residential area those are also very narrow and unmetalled. The railway service was connected the town with Calcutta and Siliguri in 1877 and 1878 respectively and the railway station along with railway track was

located at the Eastern boundary of the town. Between Railway station and Rajbari there was huge plantation and at the North of the Rajbari there was a mixed jungle. Rest of the town is covered with marshy land, water bodies and grassland. Dumping ground of the town was located along the railway line at the Eastern part of the town.

Cooch Behar town in 1951- By 1951, the population in Cooch Behar town reached up to 30162 persons and with this rapid growth of population the land use pattern has also been transformed from agrarian look to urban look. In Newtown area previously covered jungle or paddy fields were converted in to residential area. Immigrants were compelled to settle in the formerly marshy lands. Arable lands in the sub-urban areas i.e. Newtown, Khagrabari etc. before 1950's one storied buildings with kutcha roofs are predominant. Several new roads were constructed to link up the newly developed residential area in an irregular manner. Most of these roads were narrow and interlinked with each other. At the north of Rajbari, eastern part of the residential area and left side of railway track arable lands were still predominant. Wetlands still existed at the left of the newly developed residential areas of Railghumti Para, Newtown area; Kadamtala becomes an important commercial centre. With the growth of population and road network added a new dimension along with shops and bus stands.

Cooch Behar town after 1960's and onward: By 1960's the built up area of the town had expanded around the C.B.D. (Bhabaniganj Bazar) mainly at left bank of river Torsa. There after the major developmental activity take place in this part and ultimately this new part become the main township. The plantation was totally abolished from the town. With the rapid growth the land use pattern changed dramatically, the water bodies were converted to the residential lands unscientifically in the town. The Salbagan at the north east of the town was restricted in a particular area and most of the trees were cut down for residential purpose.

Slowly the town expanded at the East and North. Figure 4.2 showing, after 2001 the built up area of the town which situated at the northern part (Khagrabari census town), Eastern part (Guriahati census town) is not included in municipal area. The town ultimately expanded both in size and population. But lack of planning in the future development in Cooch Behar town and haphazard growth of its lying eastern part account for the unhealthy growth of the town space.

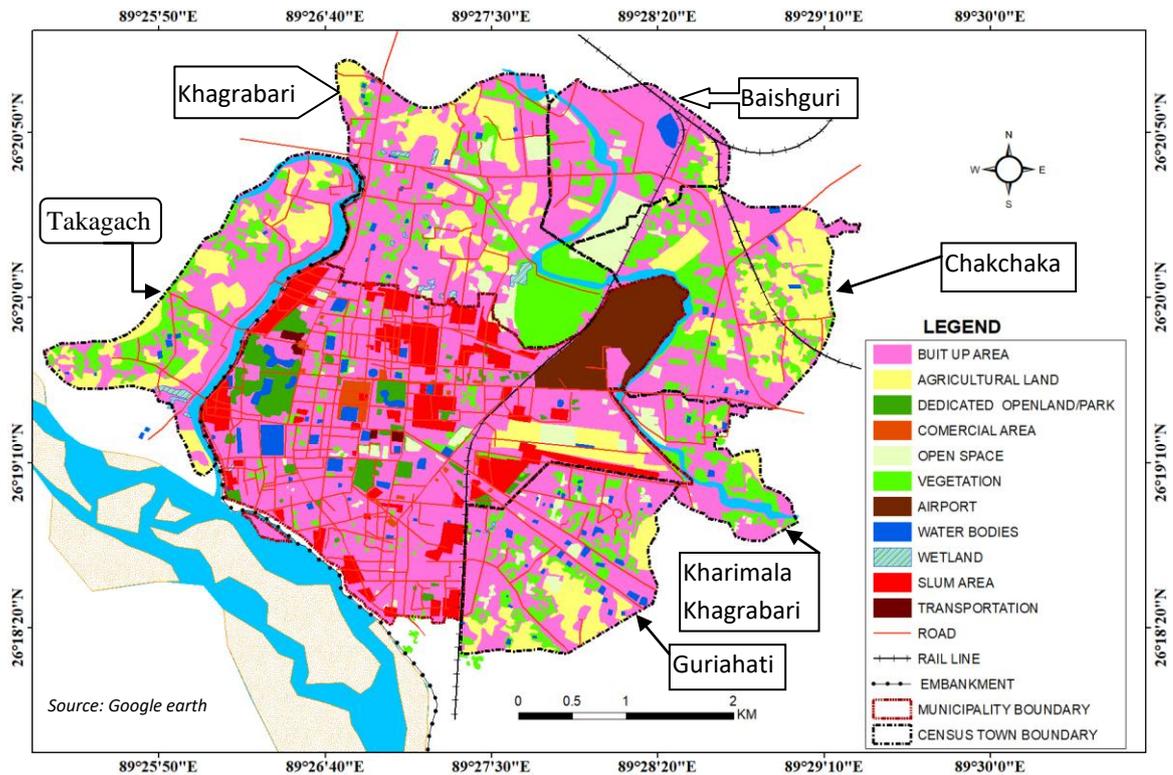


Figure 4.2: Morphological pattern of Cooch Behar town with its outgrowth.

4.2.4 Factors of changing morphology:

Towns over all in India are subjected to physical and demographic change. A mark able change took place during the last century with the rapid increase in the horizontal and vertical extent of the town. Out of many changes brought about the recently most important has been in the nature of manufacturing. The tertiary sector of economy and diversity of in jobs have altogether changed the urban morphology. Changes have been possible primarily due to technological factors. This change allows more and more people to live in the cities leading to rapid changes in the urban morphology. Within the town the force of gravitation is greatly encouraged by the nature of modern communications and the increase awareness of urban living. People from surrounding village began to come in the Cooch Behar town for searching high income employment and for the change in social standards. The morphology of town depends on human response to certain stimuli, which are not necessarily apparent everywhere (Ghosh, 2011).

Various urban functions are so widely dispersed in the town that, predominantly residential areas also have retail shops, service centres, workshops etc. Some public and semi-public offices are also exist in residential areas within a walking distance. Natural growth, along with continuous emigration of rural people in searching of jobs increasing the population pressure in the town, which increase the demand of land for residential purpose. The location of district administrative headquarters along with all other infrastructural facilities those are more attractive than the surrounding rural areas are responsible for the continuous increase of residential areas in the town. Morphology in Cooch Behar town is also concerned with the ground building and vertical development of structure is formed in the town of multi storied buildings. Due to the high cost of land in core area multi storied buildings are growing to cope up the demand. The trend of increasing multi-storeyed buildings gives a new look to the vertical growth of residential use in the town. But the morphology of the town does not necessarily depend on its relationship with C.B.D., only some other linkages also exist. So, it can be said that the morphology of the town has been changed as the vertical growth of the town.

4.3 Land uses and their characteristics:

Land use means the land use by human activity. Land use and economic activity are very closely interrelated in an urban area. The study of land use is an urgent need for planning, cultural advancement as well as overall development of a nation. However, economical and cultural advancement can better be carried out only through the balanced and systematic utilization of land. Therefore, the land use study has an immense value for human development. The intensity and type of land use decide the extent and direction of infrastructural and social needs of the area (Sing, 1998). Hence, to regulate the urban activity and to optimize the use of existing infrastructural and their development to meet its future needs, the only way to manage the current situation in Cooch Behar town. To fulfil the objective of land use characteristics three different years land use characteristics were measured in ten years interval.

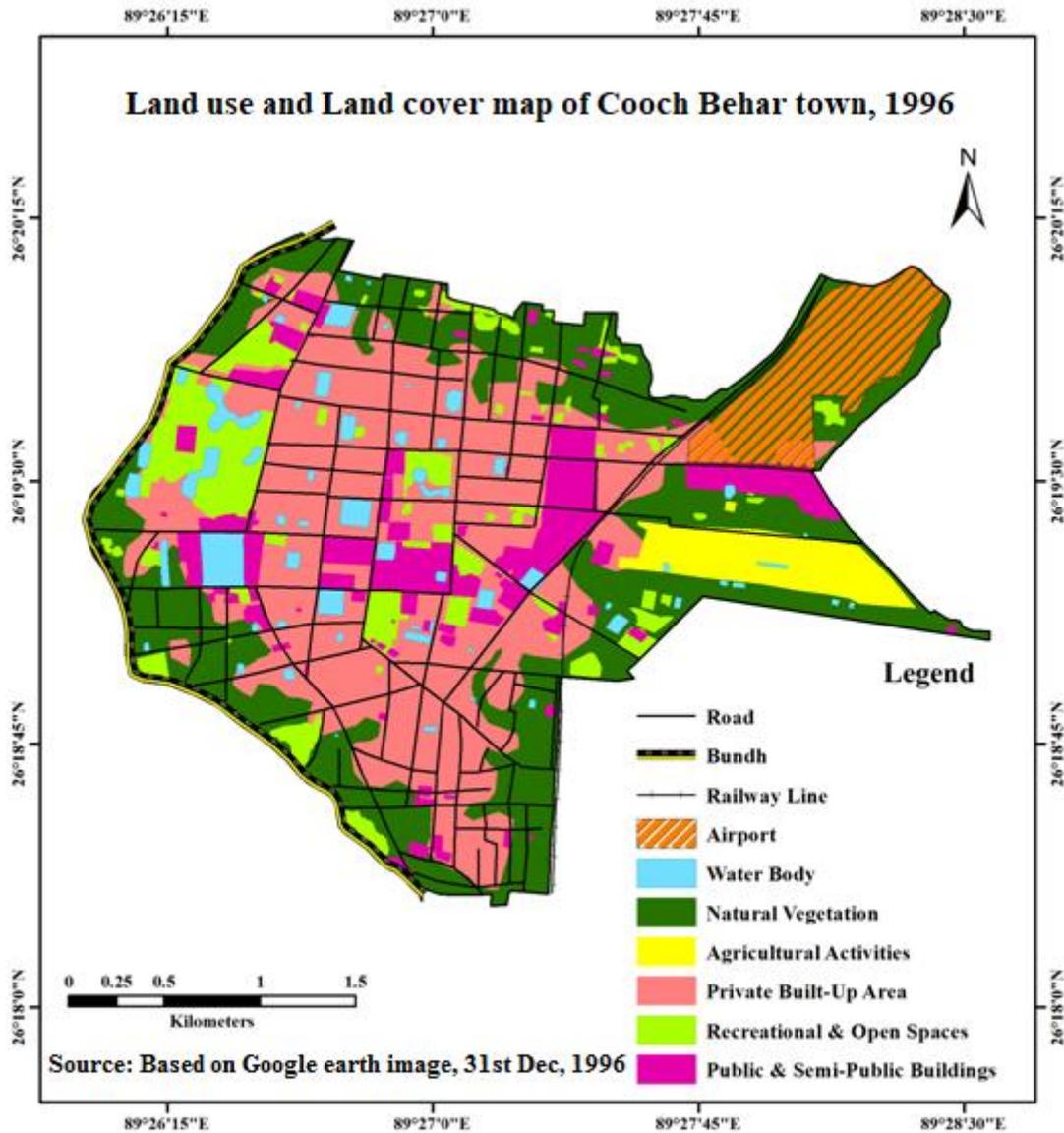


Figure 4.3: Land use map of Cooch Behar town in 1996.

Table 4.1: Land use categories of Cooch Behar town in 1996.

Features	Area in sq. Km.	% of area
Water Body	0.219	3
Vegetation	2.015	24
Public & Semi public buildings	0.723	9
Open Space	0.856	10
Agricultural Land	0.356	4
Airport	0.545	7
Private built up area	3.576	43
Total	8.29	100

Source: Compiled by author.

In 1996, following characteristics were prevailing in the town. Where residential share of land was below fifty percent (43%) and vegetation covers was 24%. The table 4.1 and the figure 4.3, showing the picture of land use distribution in Cooch Behar town up to 1996. The figure 4.4 showing the land use in Cooch Behar town, where it is find that surrounding of this town was vegetation cover. Other share of land is open space 10%, public and semi public area 9%, airport 7%, agricultural land 4% and water body 3%.

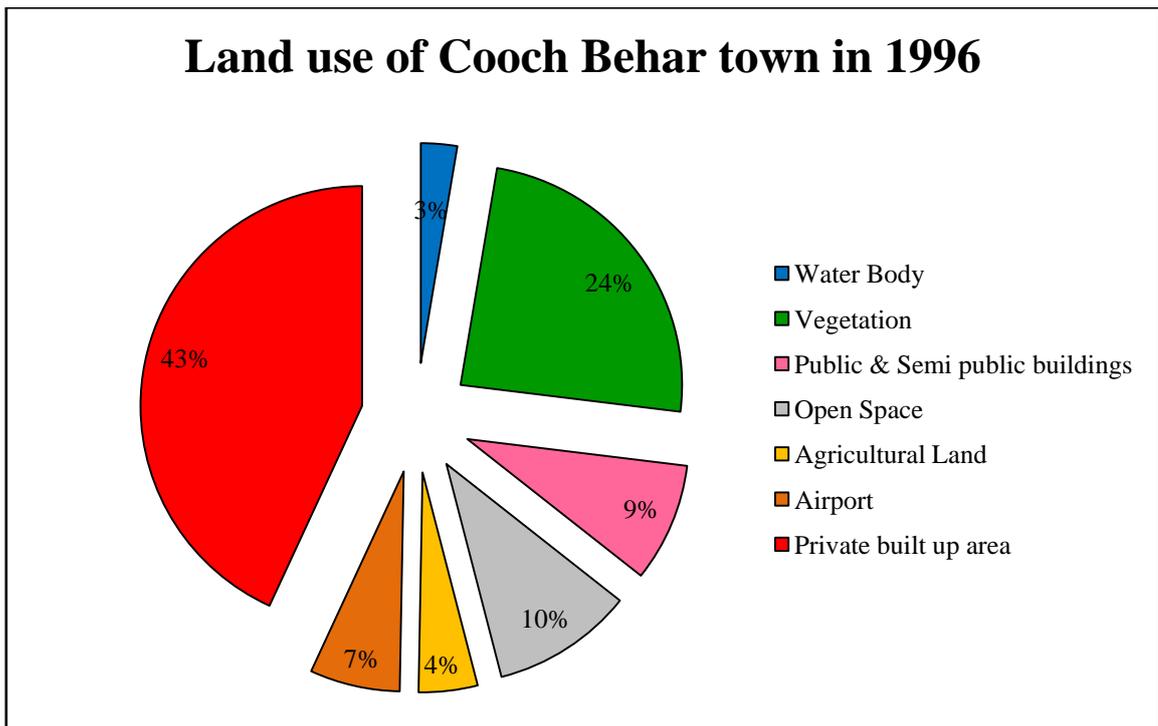


Figure 4.4: Distribution of land in Cooch Behar town in 1996.

In 2006, following characteristics were prevailing in the town. Where residential or private built up area share of land was above sixty percent (62%) and open space covers was 10%. The table 4.2 and the figure 4.5., showing the picture of land use in Cooch Behar town up to 2006. The figure 4.6 showing the land use of Cooch Behar town, where it is found that residential use is major purpose of land use. Other share of land use is public and semi-public buildings 9%, airport 7%, vegetation 6%, agricultural land 4% and water body 2%.

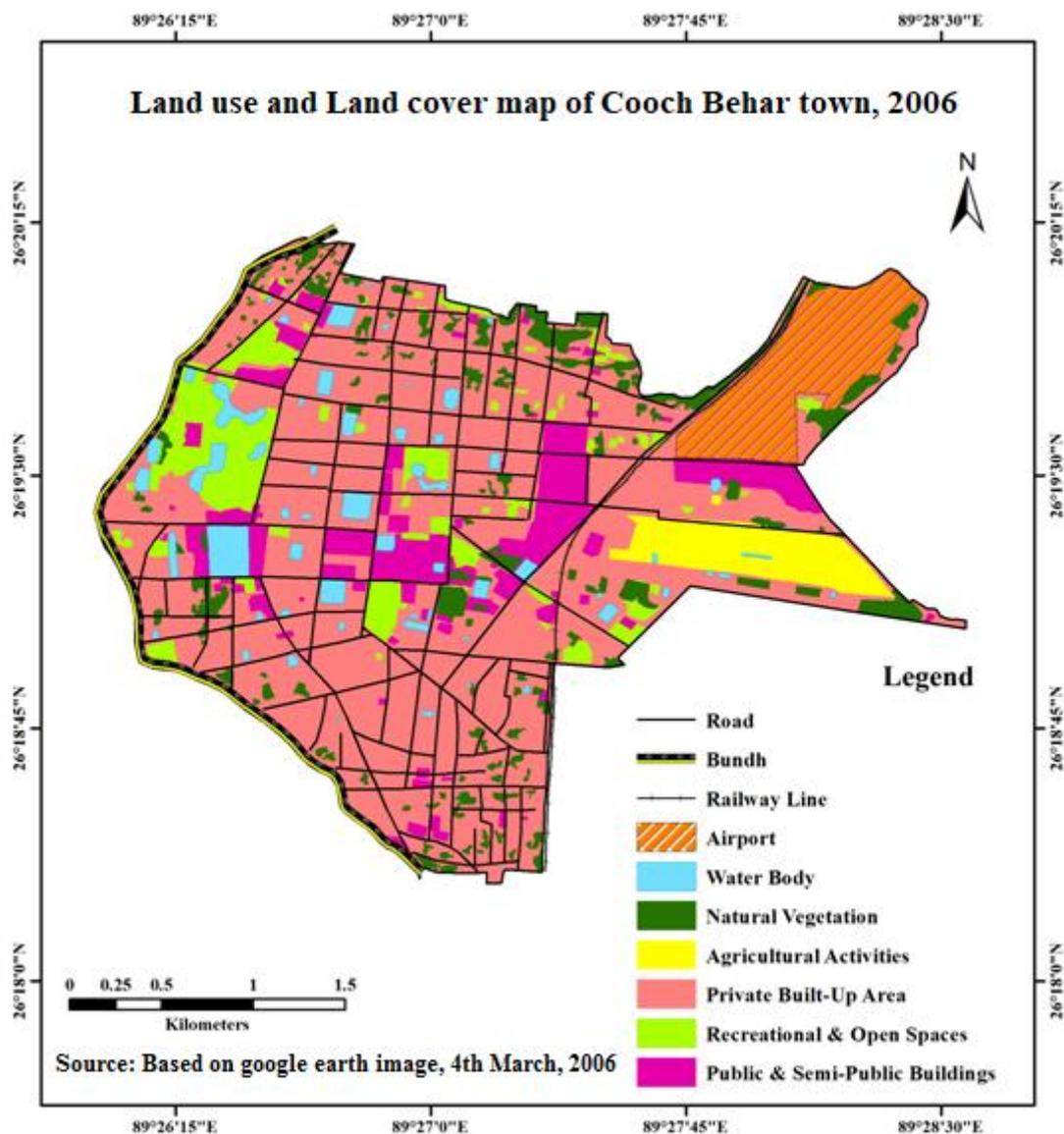


Figure 4.5: Land use map of Cooch Behar town in 2006.

Table 4.2: Land use categories of Cooch Behar town in 2006

Features	Area in sq. km	% of Area
Water Body	0.193	2
Vegetation	0.462	6
Public & Semi public buildings	0.784	9
Open Space	0.811	10
Agricultural Land	0.356	4
Airport	0.545	7
Private built up area	5.139	62
Total	8.29	100

Source: Compiled by author.

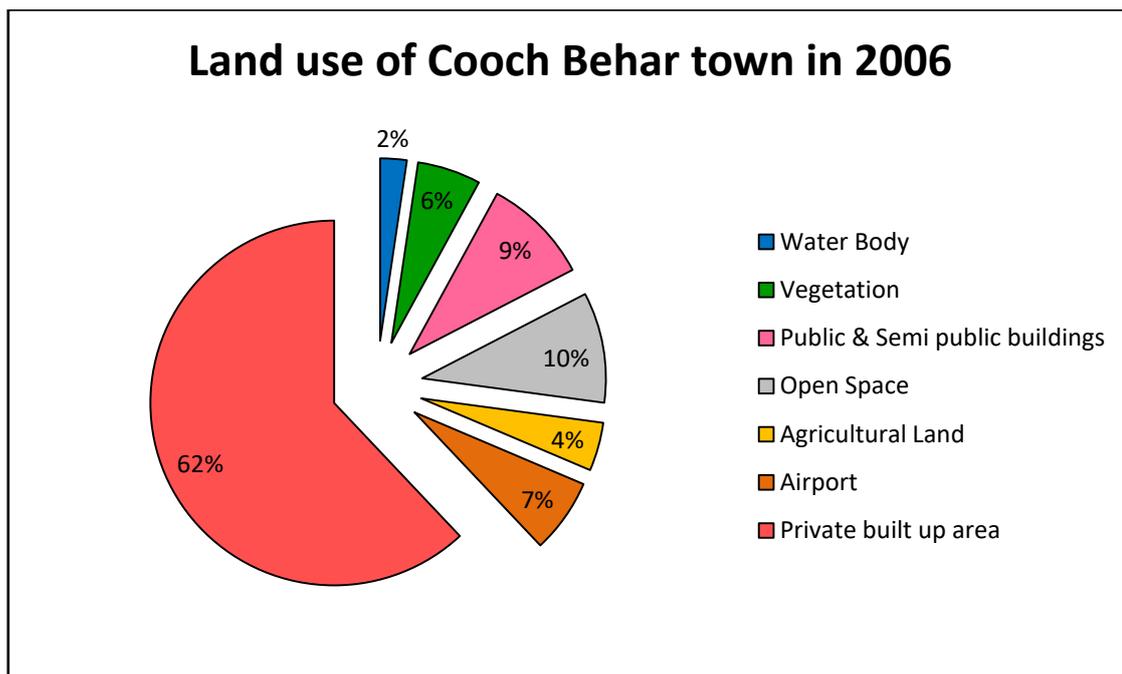


Figure 4.6: Distribution of land in Cooch Behar town in 2006.

In 2016, following characteristics were existing in the town. Where residential or private built up area share of land was above sixty percent (66%) and public and semi public buildings is 11%. The table 4.3 and the figure 4.7., showing the picture of land use in Cooch Behar town up to 2006. The figure 4.8 showing the land use of Cooch Behar town, where it is found that residential use is major purpose of land use. Other share of land use is open space covers was 8%, airport 7%, vegetation 3%, agricultural land 3% and water body was 2%.

Table 4.3: Land use categories of Cooch Behar town in 2016

Features	Area in sq. km	% of Area
Water Body	0.193	2
Vegetation	0.462	3
Public & Semi public buildings	0.784	11
Open Space	0.811	8
Agricultural Land	0.356	3
Airport	0.545	7
Private built up area	5.139	66
Total	8.29	100

Source: Compiled by author.

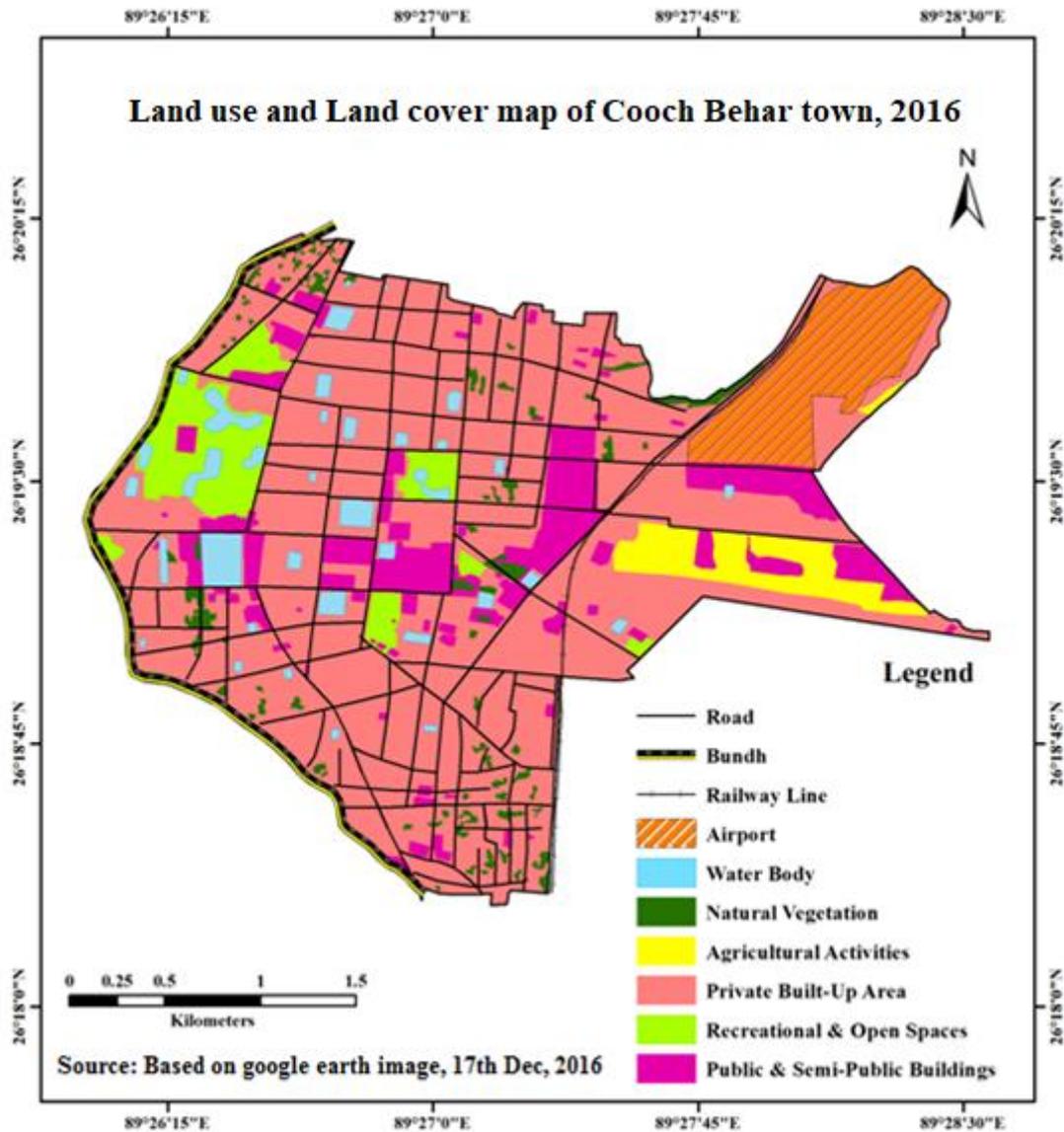


Figure 4.7: Land use map of Cooch Behar town in 2016.

The land use characteristic in Cooch Behar town reveals that it is a service town. Because from previous time the land use character was dominated by private built up area or residential purpose. Other land use area decreases but residential area increase. So, the land use characteristics said that it is residential town. The capital of the princely state of that name, the present Cooch Behar town was built on a planned layout. The setting of various activities like markets, hospital, academic institutions, park, administrative blocks etc. were pre-determined and so that most of these are located along the major through accessible to the residents of the town. But with the increase of population the estimation, based on which the town was built, became invalid and this gave rise to the unplanned growth as noticed in the other town of the

region. This haphazard growth took place mostly in the later phase of the development of the town, particularly in the post partition era, looking at the land use.

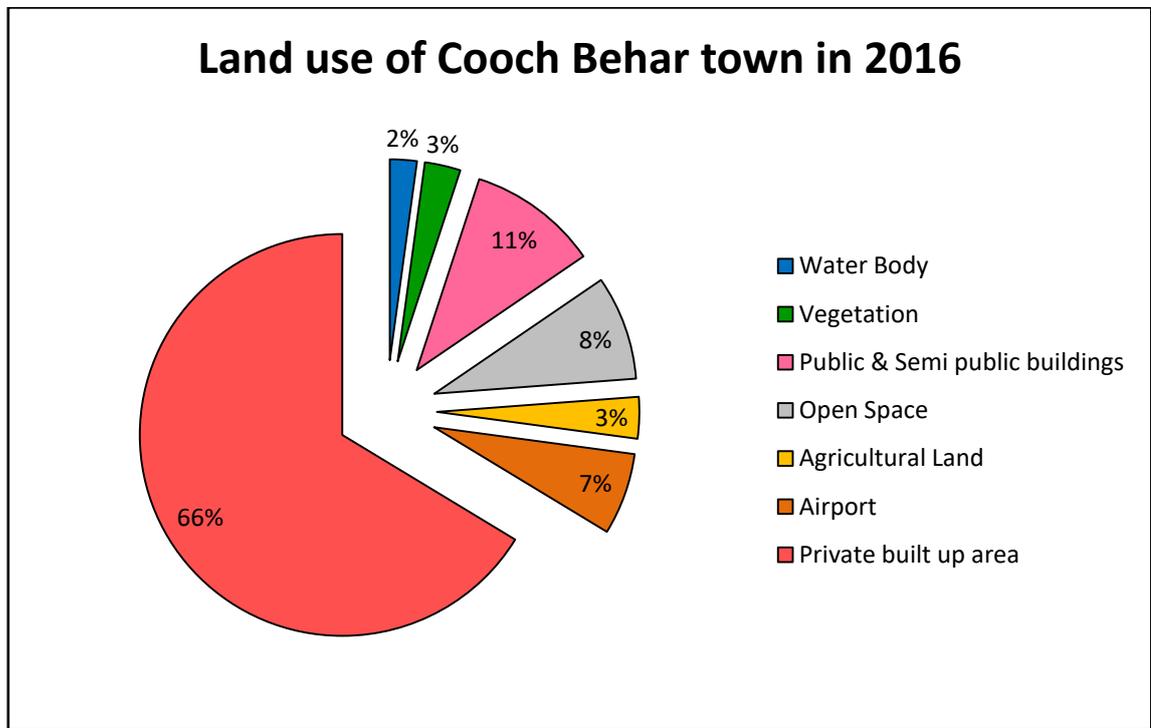


Figure 4.8: Distribution of land in Cooch Behar town in 2016.

4.3.1 Changing pattern of land use:

Urbanization is the causes of land use changes. Land Use or land Cover change due to human activities is currently proceeding more rapidly in developing countries than in the developed countries. The land use or land cover pattern of a region is an outcome of natural and socio-economic factors and their utilization by man in time and space. Land use change is one of the most important fields of human induced environmental transformation. Urbanization is a gift to the human society if it is systematic. Geographic Information Systems within remote sensing have been used for detecting and analyzing the spatio-temporal dynamics of processes and patterns of urban growth and land use or land cover change at town level.

The urban land use pattern is a consequence of a large number of operative forces and these forces are social, cultural and political in nature (Carter, 1982). The town was almost a village in the beginning. It has undergone modifications even from early historical period (Table 4.4). The periodic alteration of the administrative limit has given rise to the increase of spatial extent. The urban growth and spatial sprawl have

also completely changed the land use (Figure 4.9). The agricultural lands have been covered by urban encroachment. The structural change in the urban landscape has created pressure on land and urban amenities. The land use under residential use has increased tremendously in all wards with the maximum at the residential wards. The land under commercial use has also increased in all the middle part of the town.

Table 4.4: Decadal Land use pattern of Cooch Behar town, from 1996 to 2016.

Features	1996		2006		2016	
	Area in km ²	In %	Area in km ²	In %	Area in km ²	In %
Water Body	0.22	2.64	0.19	2.33	0.18	2.15
Vegetation	2.02	24.31	0.46	5.57	0.24	2.86
Public & Semi public buildings	0.72	8.72	0.78	9.46	0.86	10.41
Open Space	0.86	10.33	0.81	9.78	0.70	8.38
Agricultural Land	0.36	4.29	0.36	4.29	0.28	3.34
Airport	0.55	6.57	0.55	6.57	0.55	6.57
Private built up area	3.58	43.14	5.14	61.99	5.50	66.28
Total	8.29	100	8.29	100	8.29	100

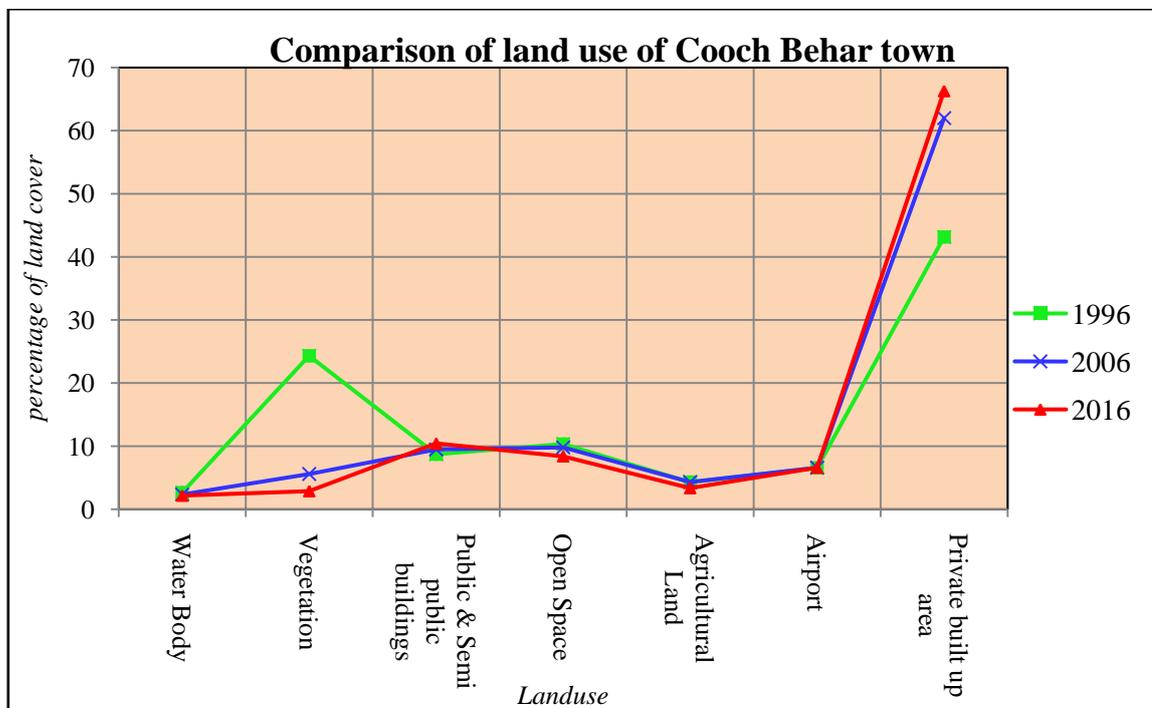


Figure 4.9: Variation in proportion of land use with three decades.

4.3.2 Ward wise distribution of land use:

In a town there may have multifarious uses of lands. The concentration of various land uses is related with the type of activity in different parts of the town. It gives rise to some structural form of the town. In order to conceive an integrated urban structure, it is necessary to know the existing land use distribution and its interrelationship. Such study also enables to determine the future land deposition. The residential use is spread throughout the length and extent of the town, while commercial, administrative, recreational uses are localized (Table 4.5). Commercial land uses are necessarily concentrated at the core of the built-up area and along important roads.

Table 4.5: Ward wise distribution of land use and land cover, 2017

Ward No	Public and Semi public Building	Water Body	Open Space and Recreational	Vegetation	Private Built-up area	Agricultural Land	Air port	Total
1	0.06	0.01	0.06	0.03	0.29	0.00	0.00	0.44
2	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.13
3	0.01	0.00	0.00	0.00	0.21	0.00	0.00	0.22
4	0.05	0.00	0.00	0.03	0.43	0.01	0.55	1.05
5	0.00	0.00	0.00	0.01	0.20	0.00	0.00	0.21
6	0.00	0.01	0.00	0.00	0.17	0.00	0.00	0.19
7	0.00	0.01	0.00	0.00	0.15	0.00	0.00	0.16
8	0.06	0.02	0.06	0.01	0.36	0.00	0.00	0.51
9	0.11	0.00	0.00	0.00	0.25	0.00	0.00	0.37
10	0.12	0.00	0.01	0.00	0.46	0.27	0.00	0.86
11	0.00	0.00	0.00	0.00	0.32	0.00	0.00	0.32
12	0.00	0.00	0.00	0.03	0.28	0.00	0.00	0.31
13	0.03	0.00	0.00	0.01	0.24	0.00	0.00	0.27
14	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.16
15	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.21
16	0.00	0.00	0.00	0.01	0.26	0.00	0.00	0.27
17	0.17	0.03	0.07	0.01	0.18	0.00	0.00	0.46
18	0.03	0.01	0.00	0.03	0.34	0.00	0.00	0.41
19	0.08	0.13	0.29	0.00	0.33	0.00	0.00	0.84
20	0.17	0.03	0.01	0.02	0.26	0.00	0.00	0.49

Table 4.6: Land category under residential use in Cooch Behar town

Percentage Of Land Under Residential Use	Category	Wards	No. of Wards	Percent (Wards)
Above 50%	High	1,4, 8,10,11,18, 19.	7	35
50-30 %	Moderate	3,9,12,13,15,16,20.	7	35
Below 30%	Low	2,5,6,7,14,17.	6	30
Total			20	100

Every ward in Cooch Behar town is dominated by residential purpose. Table No. 4.6 reveals that 35% wards of the total are high residential use and 35% is moderate type residential use. Not only that every wards are deposited with residential land use. This is the sign of residential town. The spatial distribution of ward wise residential land uses are shown in Table No. 4.5 and Figure No. 4.10., the table and figure reveals that major percent of wards are engage with residential land use due to the fact that a large part of land is covered by residential purpose. The intensity of land use reveals that residential land use increases day by day (Champing, 1957).

Classification is vital and most significant to the study of urban land use, because it provides an easy key to understand the complex structure of the town. The use of land is influenced by the inter play of many factors, constantly changing their relationship with one another, which give birth of different uses of land in different places. The residential land uses in the town is the largest proportion of urban land and play a significant role in shaping the urban morphology. There is an inverse relationship between the size of the town and the space occupied by residence, that is today, smaller the town larger the area under this use (Jana, 1996). Residential use is controlled by the nature of land, growth and distribution of non-residential lands, time distance from the place of worth, urban amenities etc. the demands for housing in urban areas depends on income, taste and affinity in their economic and socio-cultural frame.

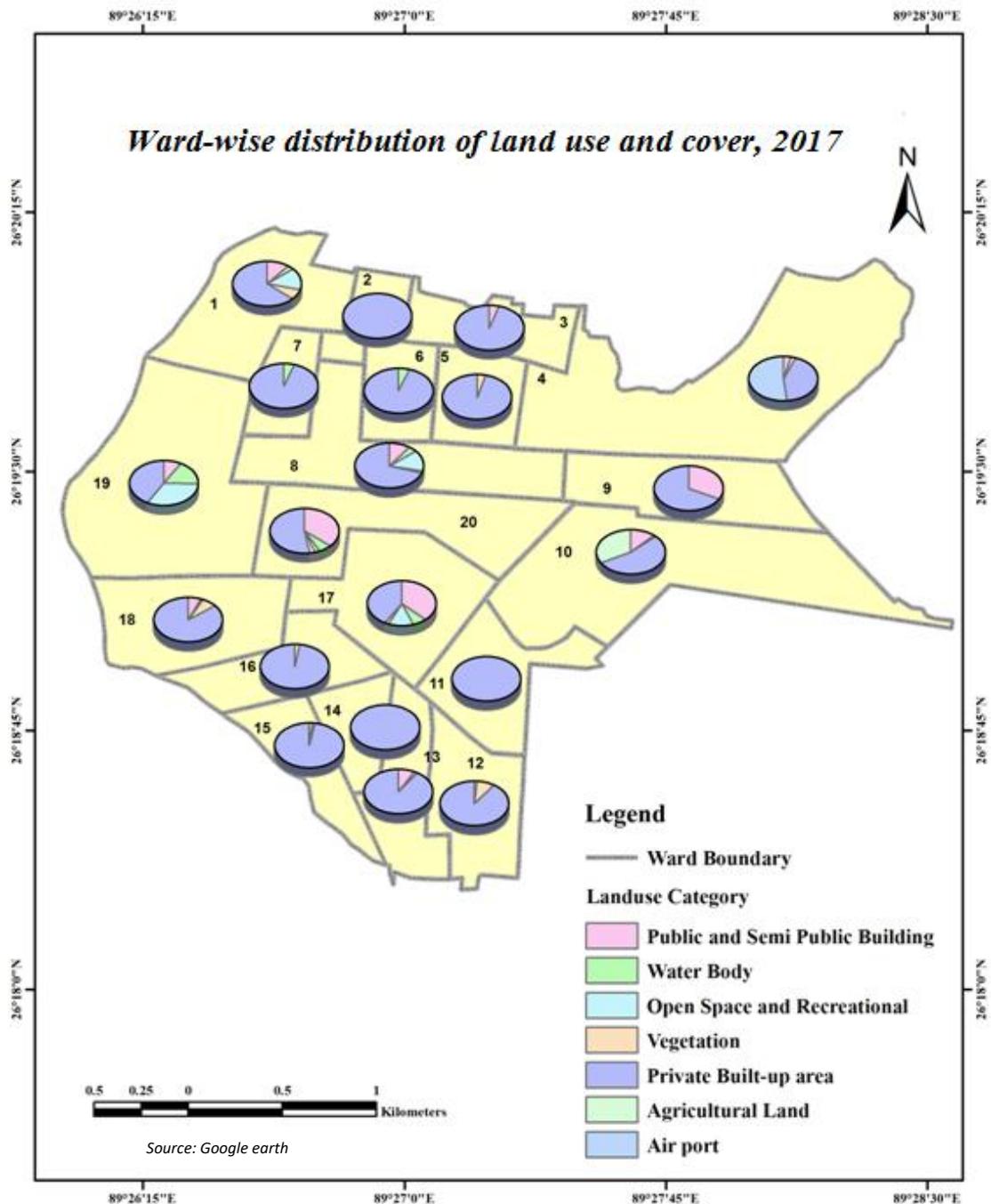


Figure 4.10: Ward wise land use distribution map of Cooch Behar town, 2017.

4.3.3 Distribution of functional zone:

Zone I (North East Part): Morphologically the town may be divided in to two parts, which have been separated by railway line, flowing through the eastern part of the town. Zone I is spread in this part of the town, which is an oldest part of the town and is characterised as less developed residential zone. Land under residential use represents

<40% in this part and the Cooch Behar airport is situated here, but other part of zone I is occupied by residential use. Agricultural land use was predominant here till 1990, but at the present vacant land occupied more than the agricultural land covers of the total area of this zone. In this zone residential land use is low in percentage due to backwardness and lack of financial activity. A few slums have filled in the gaps lying between the residential areas and vacant land.

Zone II (East Part): This zone is located in the north of the river Torsa and extended up to the railway track at the east and in the south up to the municipal boundary. This zone consist of five wards and characterised by public and private sector, where residential lands are segregated in pocket and covers only 50% lands in this zone. This zone is located far away from the central area, but government housing, policed housing and some government quarters, college hostels helps to increase the percentage of residential purpose. Some slums developed in public and semi public sector and besides railway line.

Zone III (South Eastern part): This zone is developed at the southern part of the town and extended up to the southern limit of the town or up to river Torsa. This zone is purely residential but the percentage of land use by residential s medium. This zone is characterised by rectangular street pattern and radium size plots and some slums area is located besides the river Torsa or southern part of this zone. This zone is lying at the middle of the town and extended up to new town at the south. This zone is used for both public and institutional purpose, which included Zillaparisod, district hospital, fire brigade, police line and schools, colleges and some cultural centres.

Zone IV (Central Part): Zone IV is located at the middle of the town and extended up to two wards. As this zone is lying around the C.B.D. (Bhabaniganj Bazar) and central commercial zone, more people are attracted to reside here. Among four wards, three (7, 8, 20) have low share of land under residential purpose, as main business centre and commercial zone are situated here. But other wards have large share of land under residential purpose in this zone, as area is low but population pressure is high. This zone lying in the most congested zone of the town. This zone is located at the middle east of the town and delimited by state high way at the east. This is largest public zone covering important administrative features of this zone are the locations of Cooch

Behar jail and public sector like Cooch Behar circuit house etc. During princely state and after independence administrative sector are located in an area that had both geographical and political advantages, Cooch Behar town is not an exception. It is the most important sector and lying at the middle and extended up to east to west of the town. Most important administrative, public and semi public centres such as D.M. office, municipality office, land and revenue, motor vehicles department etc. and a number of bungalows' of administrative officers, circuit house etc. showed true urban character of the town. This zone is well connected with other part of the town.

Zone V (Northern Part): This zone is located at the north of the town and delimited by national highway NH31 at the north and municipal boundary at the north east. Residential use of land is increasing in this zone because land price is comparatively low between congested and well connected with the other part of the town. This zone is located in northern of central business district which covers the smallest area among the other public zones of the town. Financial units like banks, several public and semi-public offices; educational institution etc. utilized this area. Besides a number of government offices located in the different part of the town, a number of private, public and semi public sectors are distributed in other wards in a haphazard manner.

4.3.4 Effect of land value on land use changes:

Urban geography is largely concerned with the town as a commercial system, as a place where commodities and services are manufactured, bought and sold. Thus the position within the town of any site affects its monetary value which, in turn, affects its eventual use (Murphy, 1974). Commonly in central business district with banking, insurance and many offices with major retail shopping areas is found at the urban centre and has high land values. Away from this central area the land value trend to decrease. Presently, the department of Land and Land Revenue, Cooch Behar fixes the minimum value of land in the town. On the basis of information received from registration department and experience from the field survey the map of land value has been prepared (Figure 4.11). The value of land is high along the commercial area. Not only that the availability of land is becoming scarce day by day and now days the construction of multi storied building or flats are observed here and there.

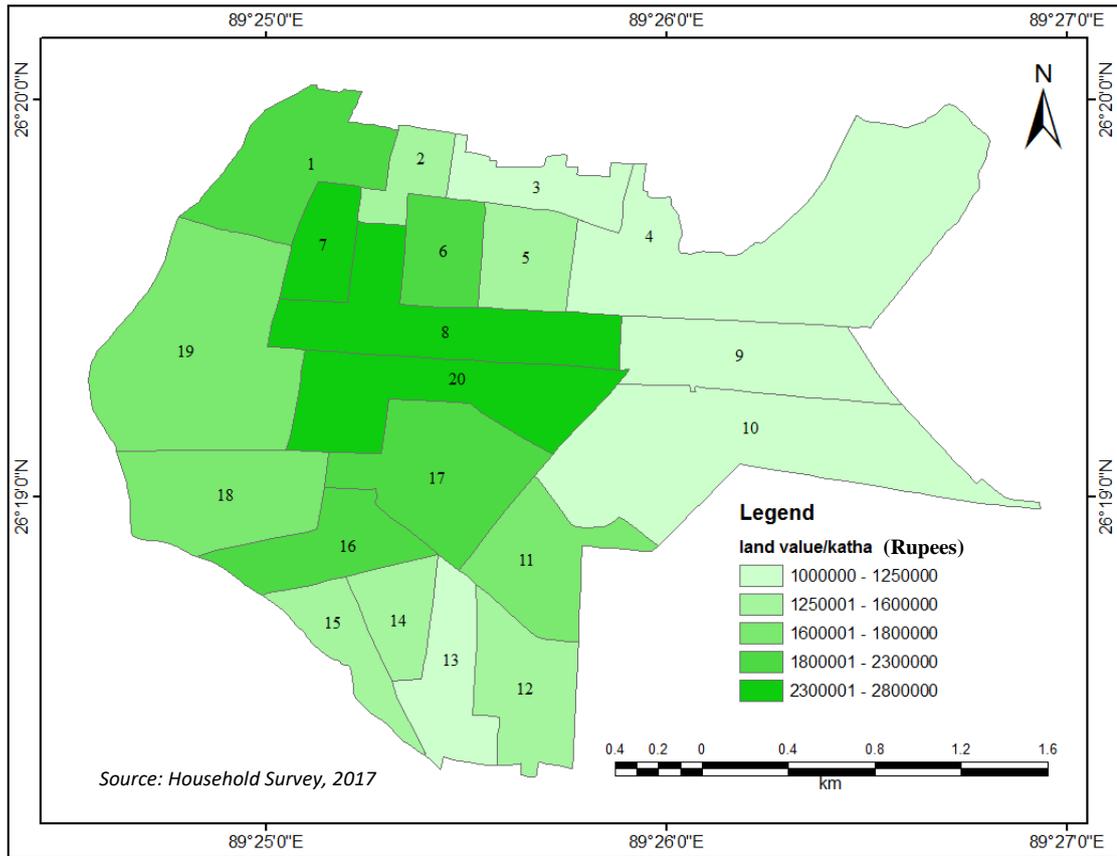


Figure 4.11: Ward-wise average land value in rupees of Cooch Behar town-2017.

Vacant places are very limited in the central part of the town. A good portion of vacant as well as fallow lands are available in the peripheral part. Practically, it a footpath less town because, of illegal encroachment by different houses and shops along the roads. Some efforts have been made by the town in different time to remove such illegal construction but the overall scenario is not satisfactory. Cooch Behar town is famous for ponds and the town has plenty water bodies. But the real picture is not desirable. Many of the big ponds are filled up for the residential and other purposes. Again another important fact is that previously many low lying parts, marshy lands, wet lands, abandoned river channels of the town which were the container and free passage of excess water during monsoon, now converted into residential purpose. As a result, most of the town facing the problem of water logging during heavy rainfall. It is observed during field survey that the densely populated wards are basically more affected by water logging problems. This also suggests that the unscientific construction and its definite relation is causing drainage congestion in the town.

4.4 Conclusions:

The land use pattern of the town reflects the use of land by different socio economic functions. Some of the functions have increased over the town in the recent years. The administrative functions, educational institutions, commercial activities, transport and communication reveals the socio economic status of the town and its land use characteristics. The land use under public utility is found concentrated within the centre of the town. Vacant is negligible in the centre of the town. The public and semi public land use decreases in the fringe areas. The GIS mapping techniques, adding of new dimensions and intensive field survey becomes the useful tool to the planners for identifying the existing morphology of the town and for the implementation of the future plans.

The present chapter is studied over the concept of land use the different land use characteristics and the changes of land use pattern. A congested population in a limited area invites creates problems. In demand of sufficient space for expansion high rise structure increases which is being used for multiple purposes. For a civilised living, life depends on planning and some institutional arrangements are also required.

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