

CHAPTER III

LAND USE AND THEIR DISTRIBUTION

INTRODUCTION

The concept of *land use* is often considered a relatively stable subject, related mainly to the use to which the land in certain region at a certain time is put (Viale, 1975). There are several general definitions of land use, the earliest of which was given in connection with the first land utilisation survey of Britain from 1931 onwards. It stated quite simply that the object of survey was to discover 'for what purpose the surface of the country is used' (Stamp, 1948). According to Vink, 'the use of land is the result of a continuous field of tension created between available resources and human needs and acts by human efforts'. Thus, by land use it is implied that it is mankind's adaptation of land surface and man's need of different magnitudes for space for different uses (Northam, 1979).

The pattern of land utilisation is of foremost importance in urban activities and it becomes crucial to define and develop a systematic and comprehensive land policy. The urban land policy should aim at providing guidance in the use and reuse, in curbing the misuse, in preventing abuse, and in regulating the non-use of land in the better interest of people (Abrams, 1964). But before starting actual planning, a proper study of the existing land use is imperative.

There is no uniformity in the classification of urban land uses in different parts of the world. This is primarily due to the differences in the land use in different cities and it is also attributable to the difficulties in mapping various uses. The types of land use in the Indian cities and those in the western cities are not spatially distributed in the same manner. The highly mixed land use in Indian urban areas differs markedly from the usual segregation of land use in Anglo-American cities (Breese, 1969).

One earliest classification was by Bartholomew (1955) in the U.S.A. He distinguished two categories of urban areas: developed and undeveloped and then divided the developed areas into (a) privately developed, such as residential, commercial and industrial, and (b) publicly developed, such as streets and transport property, parks and playgrounds and public

and semi-public property. Chapin (1957) categorised urban land use into residential, retail business, transport and communication, industries, wholesale and storage, public buildings, open spaces, and vacant or non-urban use. The major land use categories in Britain today are residential, open spaces, public buildings and institutions, industrial, commercial, statutory undertakers, vacant and derelict buildings (Collins, 1965). Later, American Institute of Planners focussed on land use characteristics alone as basis for classification. In this classification main divisions were 'functional characteristics' and 'other characteristics'.

In India, the recognised land use categories are of two types – the town planners use one category and the urban geographers use the other category. The town planners categorise urban land use into residential, commercial, industrial, transport and communication, public utilities, public and semi-public uses, open space, agricultural, vacant land and water bodies (Gowda, 1972). The urban geographers categorise urban land use into residential areas, agricultural areas, open spaces, military lands, parks and playgrounds, commercial, administrative, educational, industrial and burial grounds (Singh, 1964). The best use of each parcel of land requires a scientific and methodically appreciable classification of the present land use, which may help in investigating the best use of land after considering the major land use categories (Mondal, 1982).

3.1 LAND USE CLASSIFICATION

Based on land use classification by town planners, the following land use categories for the present study are discussed.

3.1.1 Urban Use

(a) Residential

Residential land use plays a significant role in shaping the urban morphology. There is an inverse relationship between the size of a town and the space occupied by residences, that is to say, smaller the towns larger the area under this use (Attaulah, 1985). Location of a residential area in an urban centre is controlled by a variety of factors, such as the nature of land, growth and distribution of non-residential lands, time-distance from the place of work, urban amenities etc. It is also controlled to a certain extent by factors like – land value, choice

of urban planners and political decisions. All these factors account for a significant change in the pattern of residential land use with the growth of town.

(b) Commercial

Trades and commerce play an important role in the development of urban life and activity. Since a town is an agglomeration of people, development of commerce is necessary to meet the demand of the local and surrounding rural population. The demand for land for commercial activity is related to business profits anticipated from its use. The competition for the most advantageous sites places a higher market value on commercial land that can be commanded by most other uses of urban land (Bartholomew, 1955). Once the commercial centre is established, it starts affecting the residential growth. In order to minimise travel, people like to reside close to the commercial centre. The central business district becomes the hub of all activities and the vehicles begin to originate from there. The business centres thus play an important role in controlling the urban growth and in turn they themselves are affected and modified by it (Singh, 1980). Kurseong is a hill town and its commercial structure is different in many respects from the towns of the plains.

(c) Industrial

The light industrial area of central cities has in the past centred on the main business district of the city. This area sometime surrounds the business core, but most often is on one side or another of the major commercial concentration. While some light industries have been located in peripheral area to gain larger sites, there are still strong ties between certain light manufacturing processes and the central area (Bartholomew, 1955). Kurseong doesn't have any important industrial establishment.

(d) Transport and communication

Transport has an important influence on land use economics, and the amount of land given over to railroad property varies from community to community according to each city's economic functions and its position in transportation network (Bartholomew, 1955). The amount of space devoted to streets varies according to the individual towns.

(e) Public utility

The land under public utility services performs important activity in the city life. Adequate water supply, sewerage, drainage and power are the essentials of urban life. The utility services and public facilities are responsible for the urban growth to a considerable extent. Further, these services also create avenues for social and cultural development of a city. The distribution of cultural and religious institutions gives a broad view of the type of people living at any place.

(f) Public and semi-public

These uses are either scattered or isolated but are important in the social life of a town. In an urban centre, institutional land use is expected to increase at a faster rate than the administrative use as the former is directly related to the population and thus has a greater potentiality to expand. Educational and medical institutions are bound to develop with an increase in population (Ataullah, 1985). Educational institutions perform one of the major functions in a city by providing socio-cultural activities to the urban way of life.

(g) Open space

Open space is inversely related to the size of a town. This is to say the larger the town the smaller is the open space. This is because urban development takes place at the expense of non-urban uses. Thus, open space has been decreasing in all the towns. Open space planning is not what to do with leftover or provide space for recreation only. Rather, it is how to make the most of the open space character of areas within the built-up areas.

Open spaces should (i) give structure, shape and form to the separating clusters, preserving wedges, and giving identity to the urban communities and yet unite them through parks and playgrounds, (ii) draw a 'limit of development line' both within the city and around the city to prevent sporadic sprawl, and (iii) open spaces are needed not only to provide recreation and to preserve scenic and historic sites but also to protect watersheds of even minor streams and provide natural drainage (Prakasarao, 1983).

3.1.2 Non-urban use

(a) Agriculture

In Kurseong agriculture land use is not associated with the growing of cereals but with a plantation crop that is tea. During the formation of the municipality areas under tea gardens were incorporated within its limits.

(b) Forest

A part of Dhobijhora Reserved Forest lying in the north-eastern part of the town was made a part of municipality during its formation.

3.2 LAND USE PATTERN IN 1977

Of the total area of Kurseong town (504.97 ha) only 29 percent was developed in 1977 (Table 3.1). Green belt comprising tea gardens and reserved forest accounted for about 56 percent of the total land of the town. The Government and private users own vacant lands, which accounted for about 24 percent of the land. The spatial distribution of different functions of land use in the town is shown in Fig. 3.1.

Table 3.6 : Areas and percentages of land use in Kurseong, 1977.

Urban use				Non-urban use			
Land use type	Area (in ha)	% to urban area	% to total area	Land use type	Area (in ha)	% to non-urban area	% to total area
Residential	75.887	51.29	15.03	Agriculture	168.97	47.33	33.46
Commercial	5.905	3.99	1.17	Forest	64.992	18.2	12.87
Industrial	0.969	0.65	0.19	Vacant	123.054	34.47	24.37
Transport & communication	30.26	20.45	5.99				
Public utilities	5.11	3.45	1.01				
Public & semi public	21.295	14.39	4.22				
Open space	8.528	5.76	1.69				
Total	147.954	100.00	29.3	Total	357.016	100.00	70.7

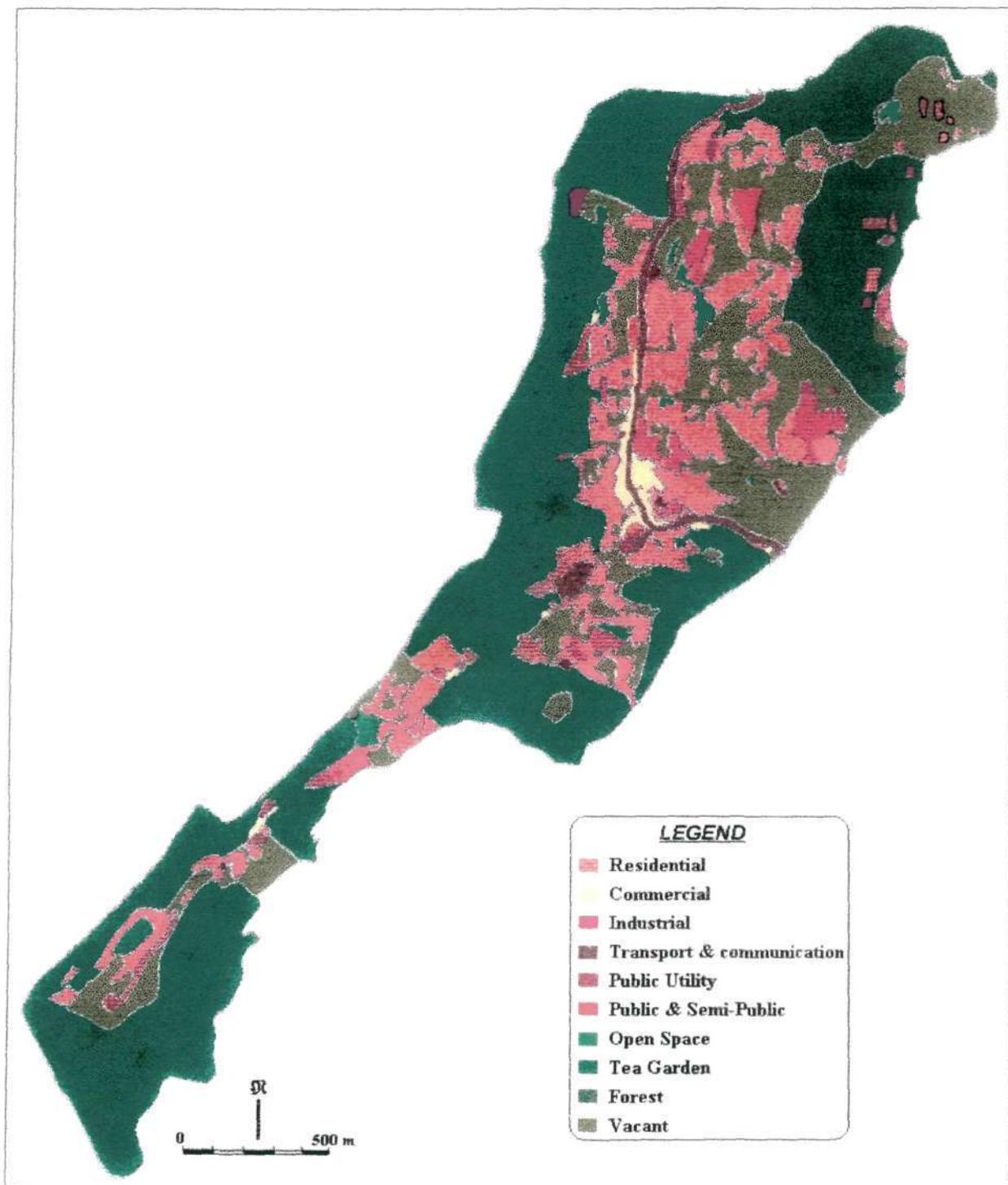


Fig. 3.1: Land use pattern in Kurseong town in 1977.

Table 3.2 reveals that four wards had a very low percentage of land under urban use and this was due to the presence of tea gardens and reserved forest. Ward I had the lowest percentage of urban land (19.12) of all the wards in the town. The four wards with low percentage also had a large part of their land either under reserved forest, tea gardens or vacant land belonging to the private owners. The three wards with high percentage of land under urban use were located at the centre of the town and ward VII had the highest percentage (94.7). The distribution of different land use functions in the twelve wards of the town is shown in Fig. 3.2. It reveals that in the bigger wards, the percentage of land under residential and commercial uses were less in comparison to the smaller wards lying near the centre of the town.

Table 3.2: Percentage of land under urban use to total land in different wards of Kurseong town.

Percentage of land under urban use	Category	Wards	No of wards	Percent (wards)
Below 25	Very low	I, IX, XI, XII	4	33.33
25-50	Low	II, V, VIII, X	4	33.33
50-75	Moderate	III,	1	8.33
Above 75	High	IV, VI, VII	3	25.00
Total			12	100.00

(a) Residential

About 51 percent of the land under urban use was devoted to residential use or it covered about 15 percent of the total land of the town. The land under residential use to land under urban use played a dominant role in the town. Share of land under residential use in different wards are grouped and categorised in Table 3.3. The grouping reveals that in three wards percentages of land under residential use were low and lowest percentage was recorded in ward VI (18.3). Wards VI and VII are located at the centre of the town and are dominated by business activities. Table 3.3 also reveals that four wards had high percentages of land under residential use. Land under residential use played a dominant role in all the wards except in wards VI and VII.

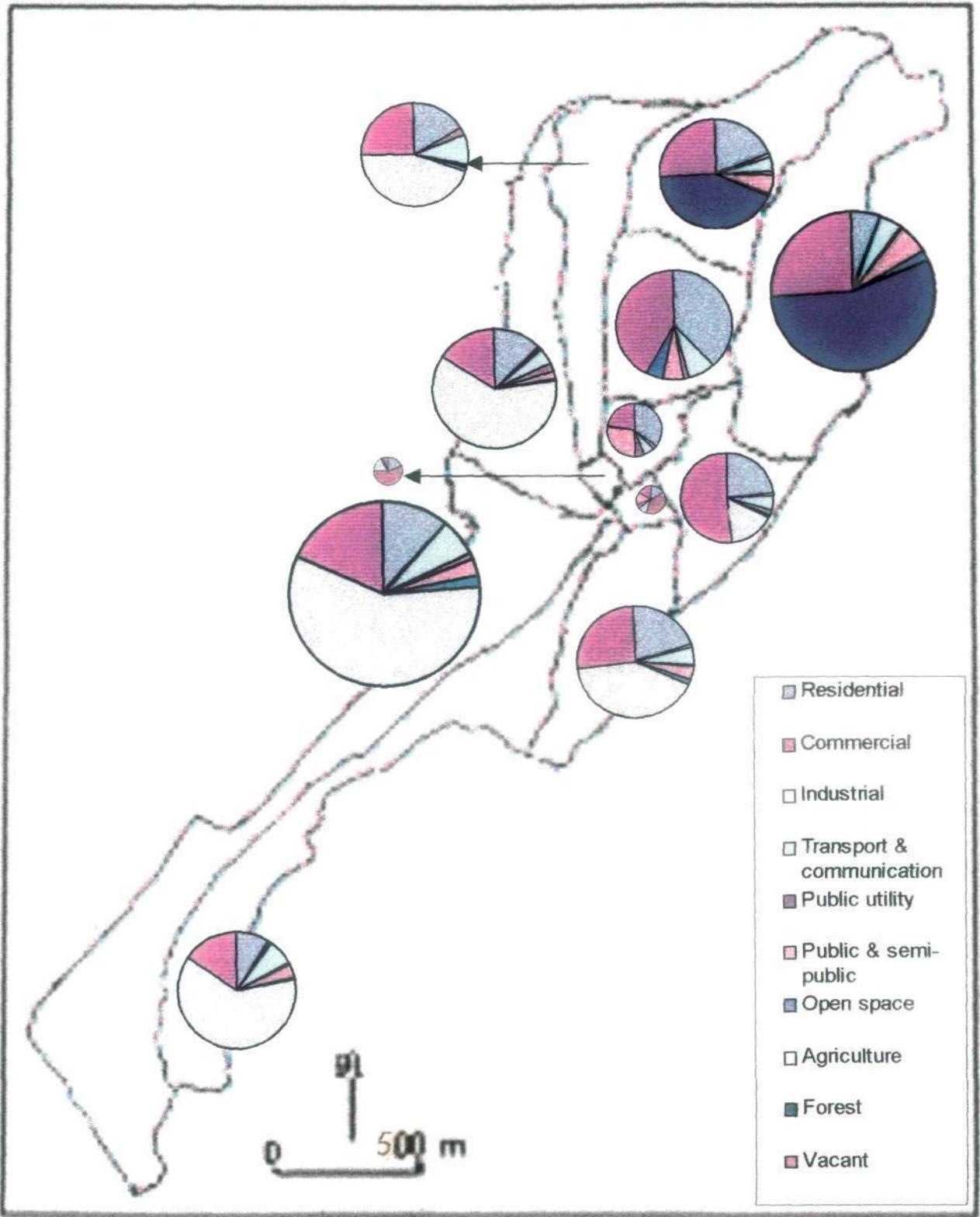


Fig. 3.2: Percentage of land under different land uses functions in Kurseong town in 1977.

Table3.3 : Land under residential use in different wards of Kurseong town.

Percentage of land under residential use	Category	No. of Wards	Percentage of wards
Below 20	Very low	1	8.33
20-40	Low	2	16.67
40-60	Moderate	5	41.67
Above 60	High	4	33.33
Total		12	100.00

(b) Commercial

About 4 percent of land under urban use was under commercial use. Only in two wards i.e. VI and VII it played a dominant role and most of the business activities either wholesale or retail, were conducted here. In wards VI, VII and VIII commercial land use was the most distinctive function. There was no land under commercial use in wards I and II.

(c) Industrial

Industries were insignificant in this town. Factories for processing of tea were found in wards IX and XII. The factory in ward II was known as the Cutlery Servicing Station related with manufacture of tools and other items needed for the tea industry. Railway press was located in ward IX.

(d) Transport and Communication

These uses were the second most important functions in Kurseong town and covered about 20 percent of land under urban use. They included land under roads, railways and radio station of A.I.R. The radio station was located in ward XII. Share of land under transport and communication use to land under urban use in different wards is categorised in Table3.4.

Among the wards, Ward IV had low percentage (8.3) of land under transport and communication and ward XI had the highest percentage (33.23) and this was due to the fact that a large part of land was under roads and railways. The railway station was also located in this ward.

Table 3.4 : Land under transport and communication use in different wards of Kurseong town.

Percentage of land under transport and communication	Category	No. of Wards	Percentage of wards
Below 10	Very low	1	8.33
10-20	Low	7	58.34
20-30	Moderate	3	25.0
Above 30	High	1	8.33
Total		12	100.00

(e) Public Utilities

Land under this use was minimum in ward VII and maximum in ward IX. It included land under religious places, cultural centres, Public Health Engineering and public and community latrines.

(f) Public and semi-public

Land under this use had the third highest percentage (14.3) of land under urban use in the town. Table 3.5 shows the number of wards in different categories. The Ward V had the lowest percentage (1.8) and the ward IX had the highest percentage of land under this use. These two wards (I and IV) in the high category had a number of Government offices, educational institutions and hospital. The Ward I had residential educational institutions, office of the forest department and TB Sanatorium where as ward IV had the offices of the

Table 3.5 : Land under Public and Semi-public use in different wards of Kurseong town.

Percentage of land under Public & Semi- Public	Category	No. of Wards	Percentage of wards
Below 10	Very low	5	41.67
10-20	Low	5	41.67
20-30	Moderate	-	0.0
Above 30	High	2	16.66
Total		12	100.00

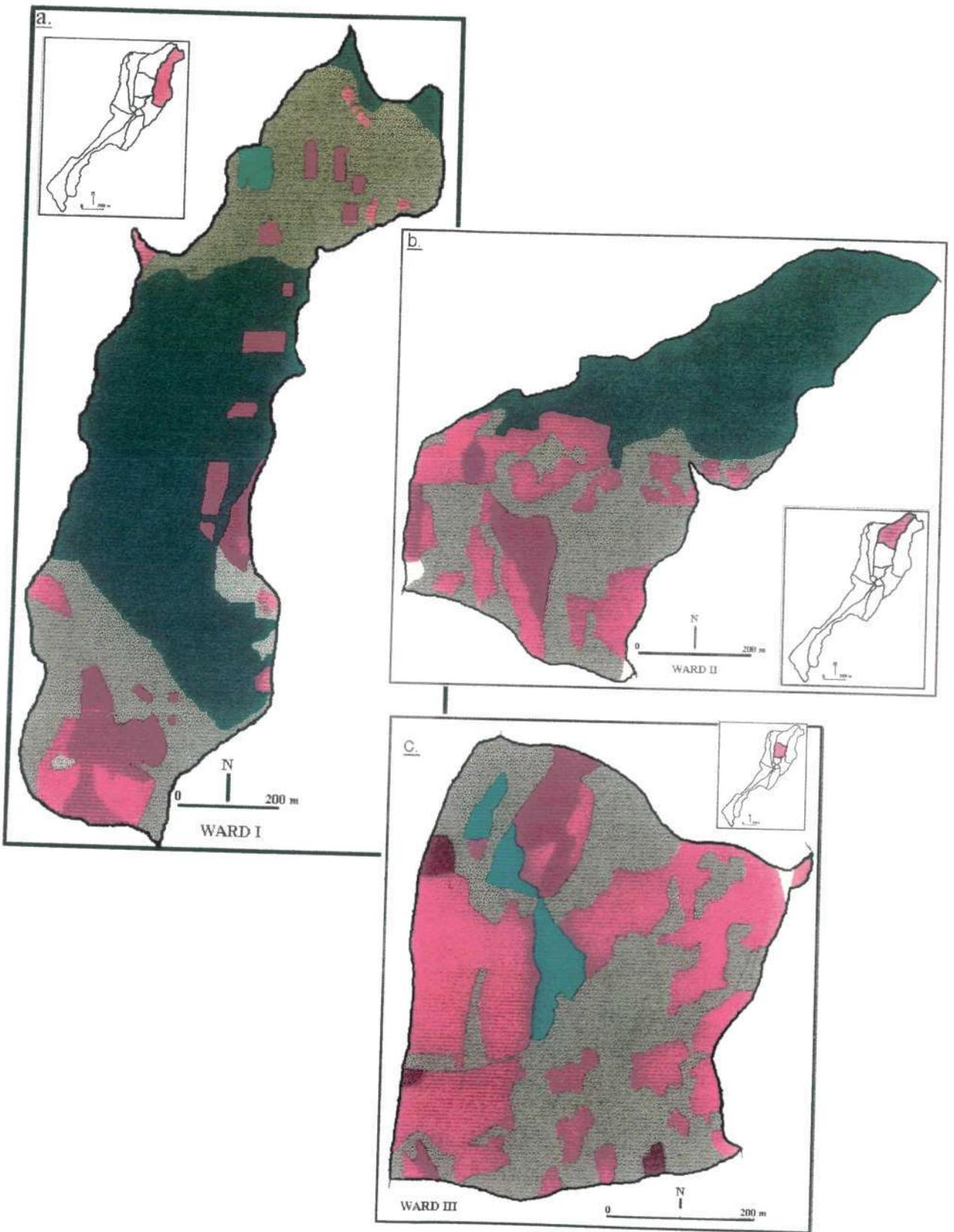


Fig. 3.3 : Land use pattern in 1977 in wards (a) I, (b) II and (c) III.

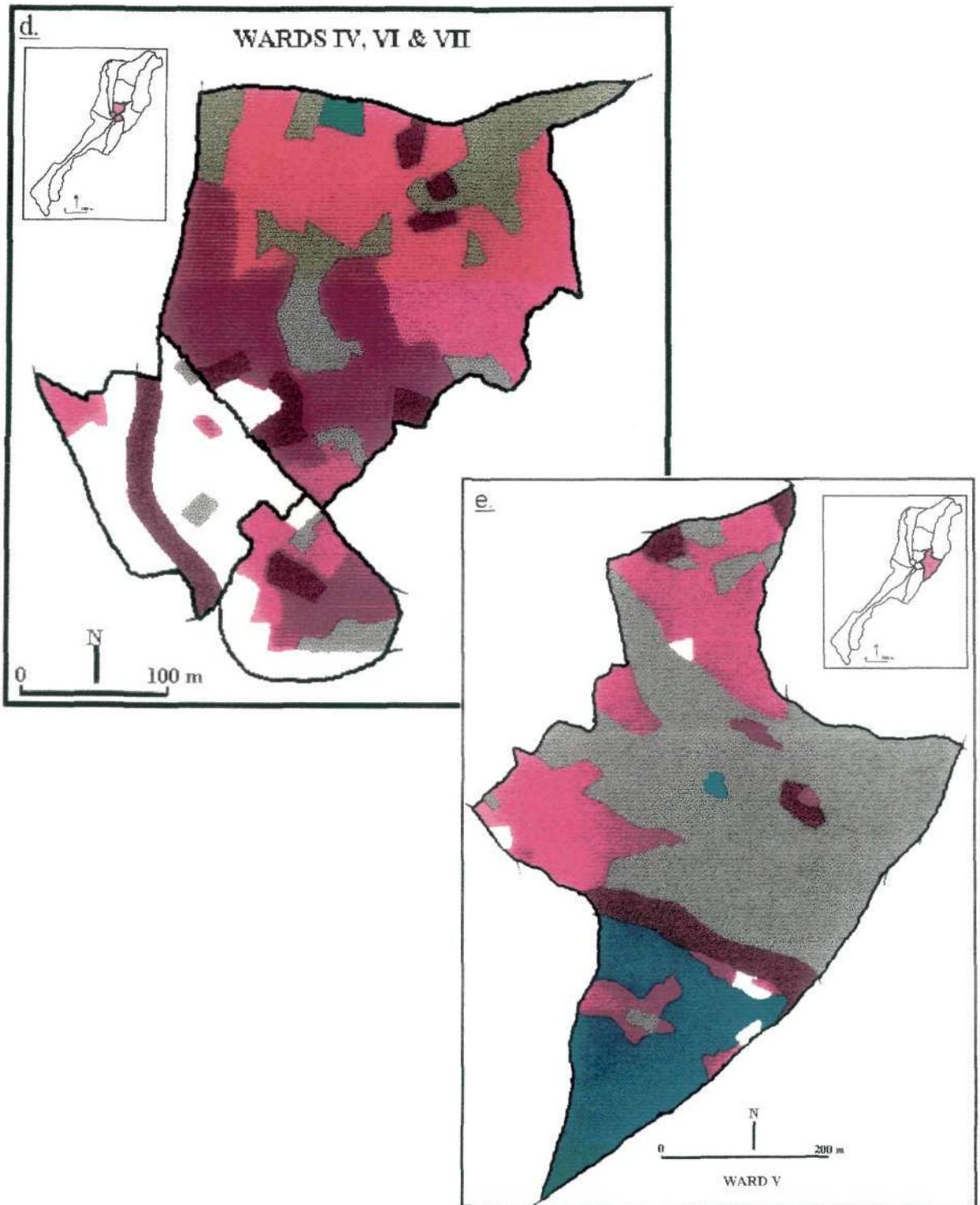


Fig. 3.3 : Land use pattern in 1977 in wards (d) IV, VI and VII and (e) V.

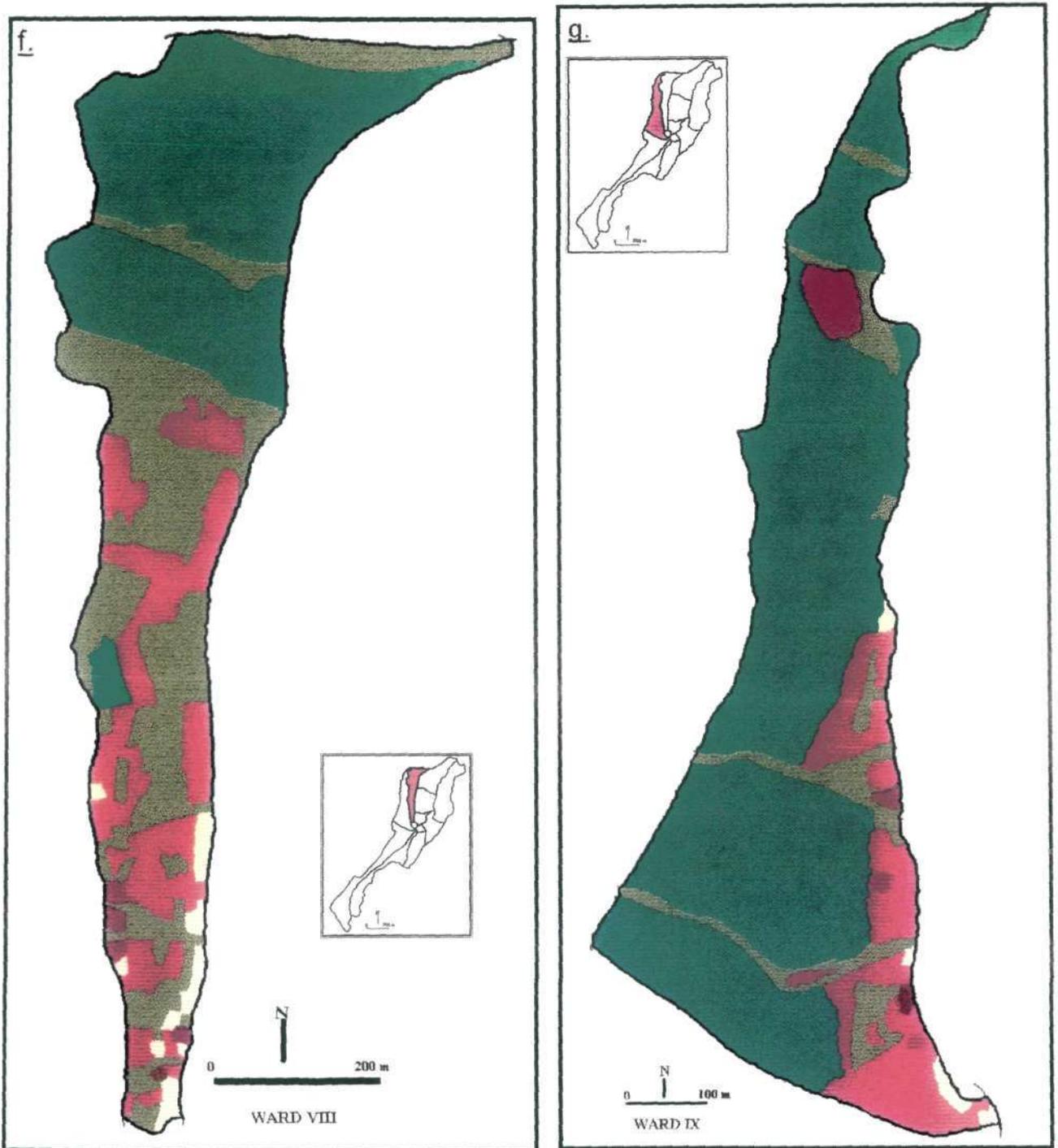


Fig. 3.3 : Land use pattern in 1977 in wards (f) VIII and (g) IX.

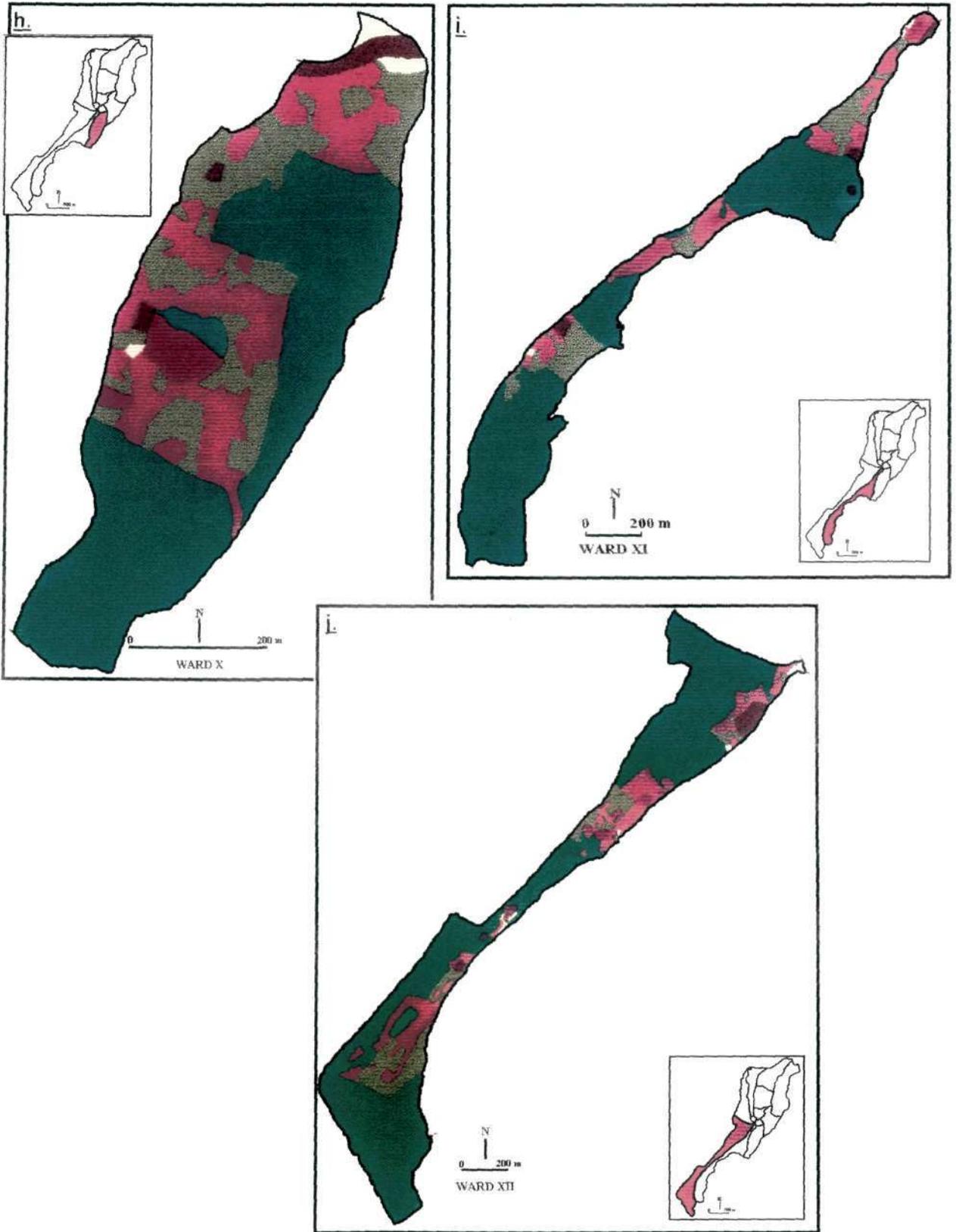


Fig. 3.3 : Land use pattern in 1977 in wards (h) X, (I) XI and (j) XII.

Public Works Department and the Municipality, Sub-Divisional Hospital and a few educational institutions.

(g) Open Space

This use comprised land under playgrounds and in two wards (VI and VII) land under this use was not found. Big playgrounds were found in wards I, III and XII.

3.2.2 Non- Urban Use

(a) Agriculture

In three wards (IX, XI and XII), more than 50 percent of the total land and in two wards (VII and X) more than 40 percent of the total land were under tea gardens.

(b) Forest

Wards I and II were covered by forest and about 54 percent of the land in ward I and about 42 percent in ward II were under forest.

The spatial distribution of different functions of land use for the different wards of the town is shown in details in Fig. 3.3 (a-j).

3.3 LAND USE PATTERN IN 1999.

Of the total area about 47 percent of the land was under urban use in 1999 (Table 3.6). Land under non-urban land use is still high due to the presence of tea gardens, reserved forest and vacant land under its jurisdiction. The spatial distribution of different functions of land use in the town is shown in Fig. 3.4. The number of wards in different categories of land under urban use is shown in Table 3.7.

The table reveals that only one ward has a very low percentage of land under urban land use due to the fact that a large part of the land is covered by reserved forest. Three wards have low percentage of land and this is due to the fact that these wards cover tea gardens. Four wards have high percentage of land under urban use. Out of these four wards two (VI and VII) have the maximum area under commercial use and can aptly be called the Central Business

District (CBD) of the town. The distribution of different land use functions in the twelve wards of the town is shown in Fig. 3.5.

Table 3.6 : Areas and percentages of land use in Kurseong, 1999.

Urban use				Non-urban use			
Land use type	Area (in ha)	% to urban area	% to total area	Land use type	Area (in ha)	% to non-urban area	% to total area
Residential	147.65	62.48	29.24	Agriculture	147.274	54.82	29.16
Commercial	11.427	4.83	2.26	Forest	64.631	24.06	12.8
Industrial	0.682	0.29	0.14	Vacant	56.741	21.12	11.24
Transport & communication	30.486	12.9	6.04				
Public utility	7.591	3.21	1.5				
Public & semi public	28.003	11.85	5.54				
Open space	10.485	4.44	2.08				
Total	236.324	100.00	46.8	Total	268.646	100.00	53.2

Table 3.7 : Percentage of land under urban use in different wards of Kurseong town, 1999.

Percentage of land use under urban use	Category	Wards	No. of Wards	Percent (Wards)
Below 25	Very low	I	1	8.34
25-50	Low	IX, XI, XII	3	25.00
50-75	Moderate	II, V, VIII, X	4	33.33
Above 75	High	II, IV, VI, VII	4	33.33
Total			12	100.00

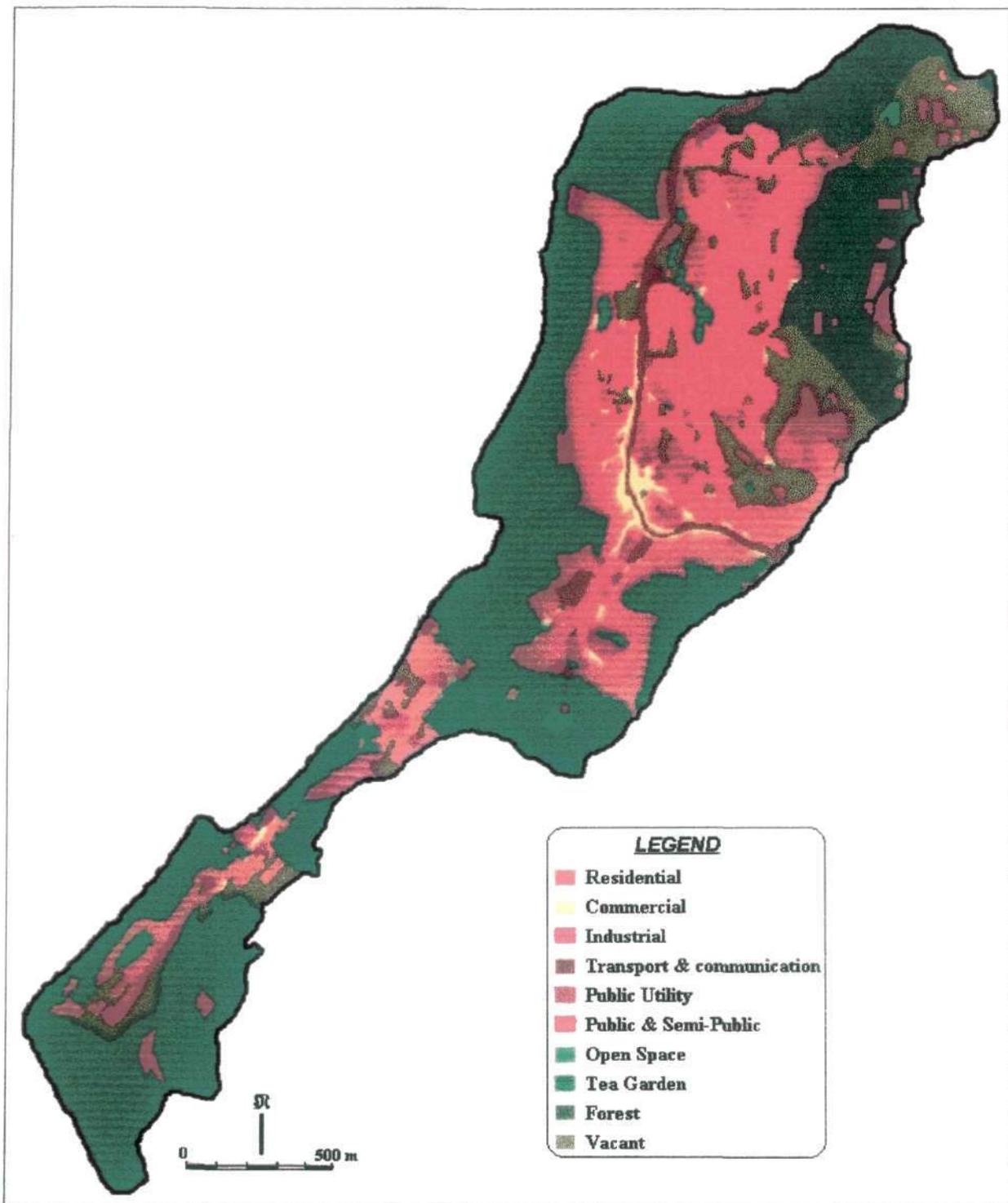


Fig. 3.4 : Land use pattern in Kurseong town during 1999.

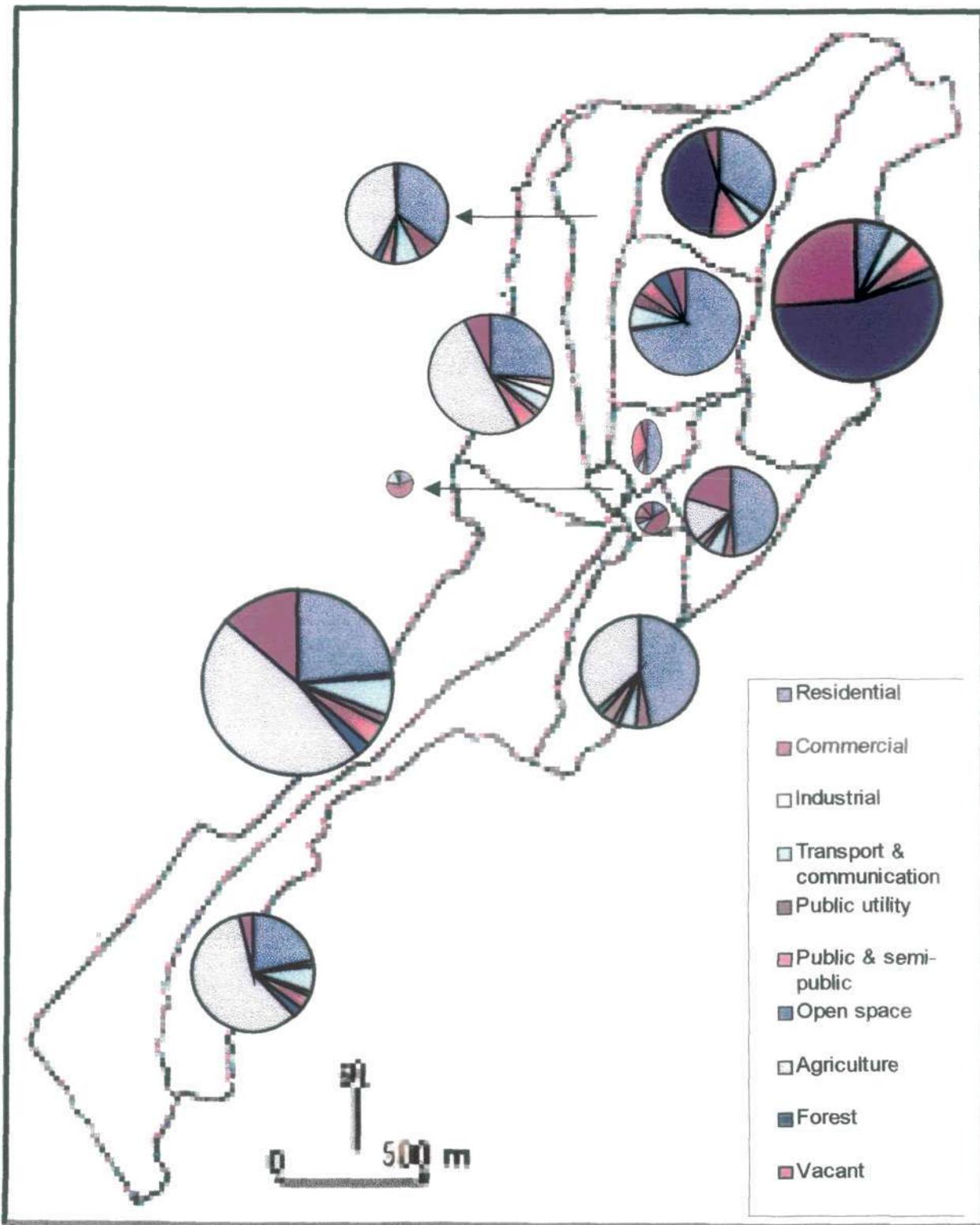


Fig. 3.5: Percentage of land under different land uses functions in Kurseong town in 1999.

3.3.1 Urban Use

(a) Residential

About 62 percent of the land under urban use is devoted to residential use or it can be said that this use covers about 29 percent of the total area of the town. Table 3.8 reveals that percentage of land under residential use is very low in two wards and these wards are known for their commercial activities. 50 percent of the wards have high percentage of land under residential use and out of these 50 percent, 25 percent of the wards (wards III, V and X) have about 75 percent of their urban land under residential use. These wards have become distinctively residential zones. Wards III and V have grown as new residential area where as ward X is an old residential area. In ward III, houses have come up on a land once owned by a tea company and the condition of houses in this ward is better than that of ward V, where a disorganised area with sub-standard housing conditions, called *bustys* (slum) has grown along slopes not suitable for habitation. Wards –VIII, XI and X also have some *bustys*.

Table 3.8 : Land under residential use in different wards of Kurseong town.

Percentage of land under residential use	Category	No. of wards	Percentage of wards
Below 20	Very low	2	16.67
20 – 40	Low	1	8.33
40 – 60	Moderate	3	25.0
Above 60	High	6	50.0
Total		12	100.00

(b) Commercial

Commercial land use covers about 5 percent of the built-up area or about 2 percent of the total area of the town. Although land under this use is, except ward I, found in all the wards, but wards VI and VII have the maximum area under it. Since the town is small and easily approachable from most of the areas in and around the town, these two wards have become the nucleus of business activities and is the central business district of the town. Both

wholesale and retail businesses are conducted here. As horizontal expansion is not possible due to paucity of land, this area is experiencing a vertical growth and this has led to congestion. The Hill Cart Road and the railway line pass through the CBD and shops are found on both the sides of the road. A new shopping complex, built by the municipality, has come up in the CBD. Land under schools run by private enterprises has been added to commercial land use. These private schools are found in nearly all the wards of the town and have come up on existing houses or on privately owned vacant lands.

(c) Industrial

Share of this land use is insignificant. The cutlery servicing station in ward II has become defunct and has been converted into a training centre for carpet weaving by the D.G.H.C., which has also become non-functional. Railway press is located in ward XI and a few factories for processing tea are located in wards IX and XII.

(d) Transport and Communication

These covers about 13 percent of the built up area and includes land under roads, railways and radio station of the A.I.R. Ward IV has the lowest share (6.9 percent) and ward I has the highest share (21 percent) of the total land covered by it. A new un-metalled road has been constructed in ward V for improving communication system in the town.

Table 3.9: Land under transport and communication use in different wards of Kurseong town.

Percentage of land under transport and communication	Category	No. of Wards	Percentage of wards
Below 7	Very low	1	8.33
7- 14	Low	6	50.0
Above 14	Moderate	5	41.67
Total		12	100.00

(e) Public Utilities

Percentage of land under this use is the lowest in ward VII and the highest in ward IV. New areas have come under public utility like, in ward III worship places of Hindu and

Buddhists have come up, in ward XI, water reservoirs for supply of water to the town have been constructed by the P.H.E. and in ward XII, an 11 kV Sub-station of the West Bengal State Electricity Board has been constructed.

(f) Public and semi-public

These land uses accounts for about 12 percent of the built up area and the ward VII has the lowest share (2 percent) and ward I has the highest share (30 percent) of it. Table 3.10 shows that more than fifty percent of the wards are in the low category and two wards are in very high category. A number of government offices and educational institutions are located in wards I and IV. The Polytechnic College has been shifted to its new site in ward IX and the Darjiling Tea Research Institute has been set up in ward XII. The Siliguri Jalpaiguri Development Authority (S.J.D.A.) in ward VIII has constructed the Bus Terminus and the Fire Station.

Table 3.10 : Land under public and semi-public use in different wards of Kurseong town.

Percentage of land under public & semi-public	Category	No. of Wards	Percentage of wards
Below 6	Very low	4	33.33
6 – 12	Low	3	25.0
12 – 18	Moderate	2	16.67
18 – 24	High	1	8.33
Above 24	Very high	2	16.67
Total		12	100.00

(g) Open Space

Playgrounds and parks are part of this land use and comprise about 4 percent of the built-up area. Except wards VI and VII, this land use is found in all the wards. In ward VIII, area of the playground also known as Montiviot Ground has been extended and in ward XI an obelisk with a small garden and a watchtower at the Eagles Crag has been constructed.



Fig. 3.6 : Land use patterns in 1999 in wards (a) I, (b) II and (c) III.

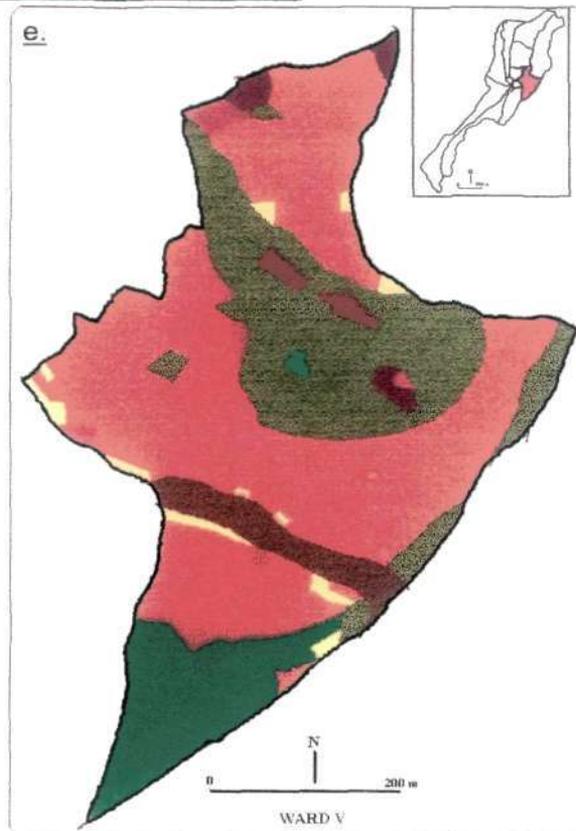
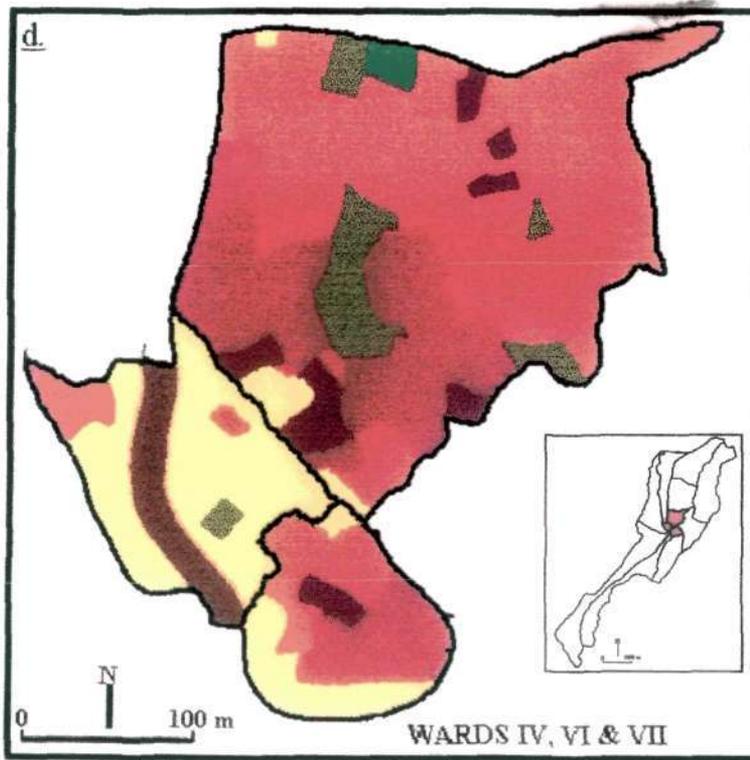


Fig. 3.6 : Land use patterns in 1999 in wards (d) IV, V and VI and (e) V.

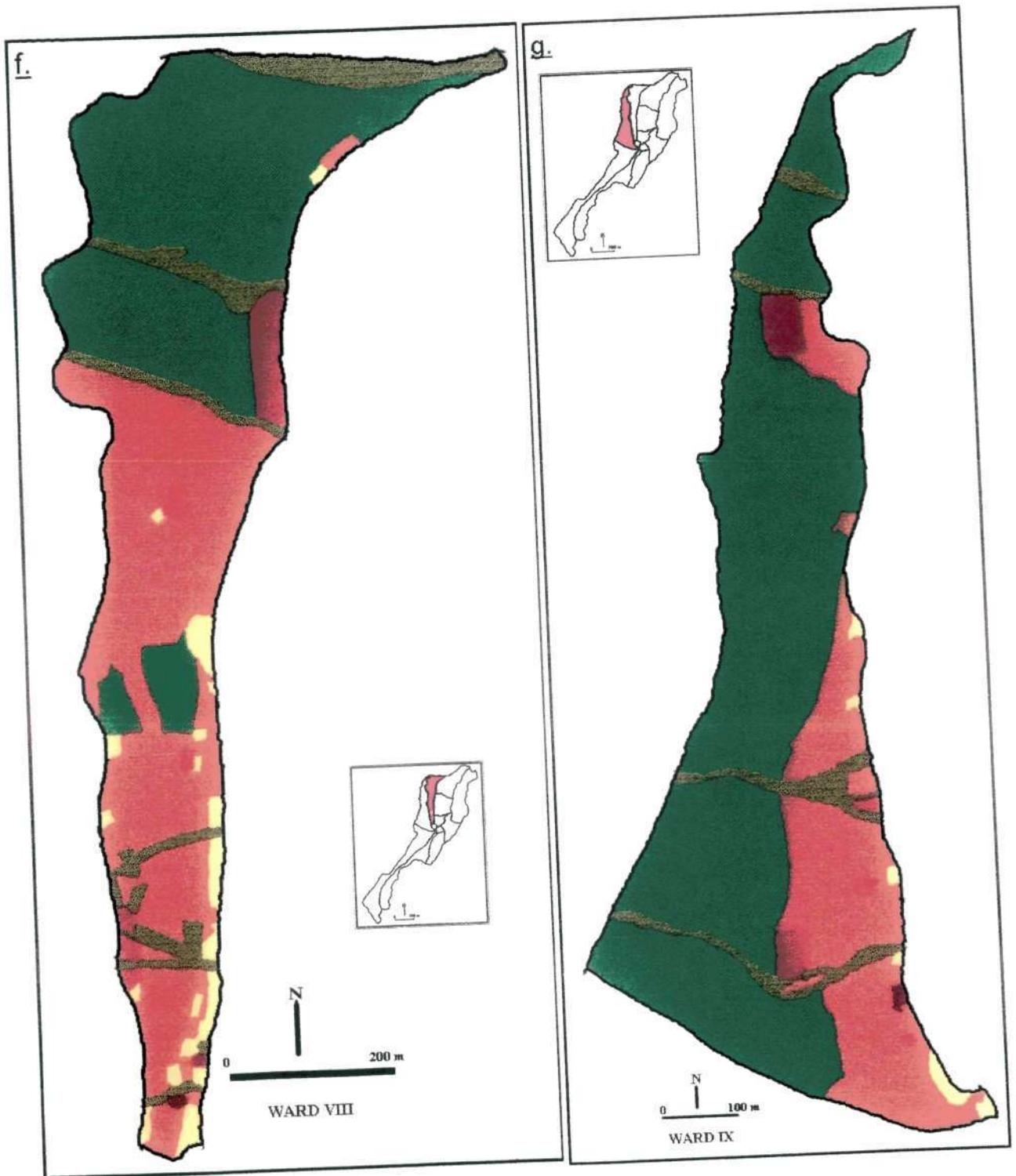


Fig. 3.6 : Land use patterns in 1999 in wards (f) VIII and (g) IX.



Fig. 3.6 : Land use patterns in 1999 in wards (h) X, (I) XI and (j) XII.

3.3.2 Non-urban Use

Area under non-urban use is very less in wards III, IV and VIII.

(a) Agriculture

Tea gardens cover more than 40 percent of the land in wards VIII, IX, XI, and XII.

(b) Forest

Reserved forest and vacant land still covers a substantial area in wards I and II.

The spatial distribution of different categories of land use for the different wards of the town is shown in Fig. 3.6 (a-j).

3.4 CHANGES IN LAND USE PATTERN – 1977-99

The segregation and aggregation of different functions in a city are the result of a long period of evaluation. The change in urban land use is, therefore, an important aspect of land use study.

The spatial structure of the town is the result of three forces of attraction and integration, of dispersion and disintegration and of spatial differentiation (Dickinson, 1964). The first two forces generate vertical growth and horizontal expansion. The third force results into the segregation of the buildings, persons and activities. With the age and growth of urban landscape, the spatial structure also changes in consonance with the land use. Any change in economic and social conditions, caused either by political or natural forces, also brings about a remarkable change in the land use patterns. Sometimes the changes are so adverse that they start posing problems of various kinds instead of facilitating urban functions (Singh, 1979).

The changes in land use functions have been studied during the period 1977-99. The year 1977 has been taken into consideration because of the non-availability of information on land use function before that period. The town under study is developing by functional movements and growth of the built-up area within and outside the municipal limits. These functional movements represents the impact of different social dynamics governed by a number of developmental factors noticed during different periods. Fig. 3.7 shows that two urban functions i.e., residential and commercial and to a certain extent public utility and public

and semi-public uses have experienced the maximum change. In other urban functions no remarkable changes are discernable but area under industrial function has decreased. High demand of residential areas is primarily responsible for the increase in built-up area of a town. Hence, this function experiences the highest rate of increase (94.56%) as compared to other uses during 1977-99 (Fig.3.8).

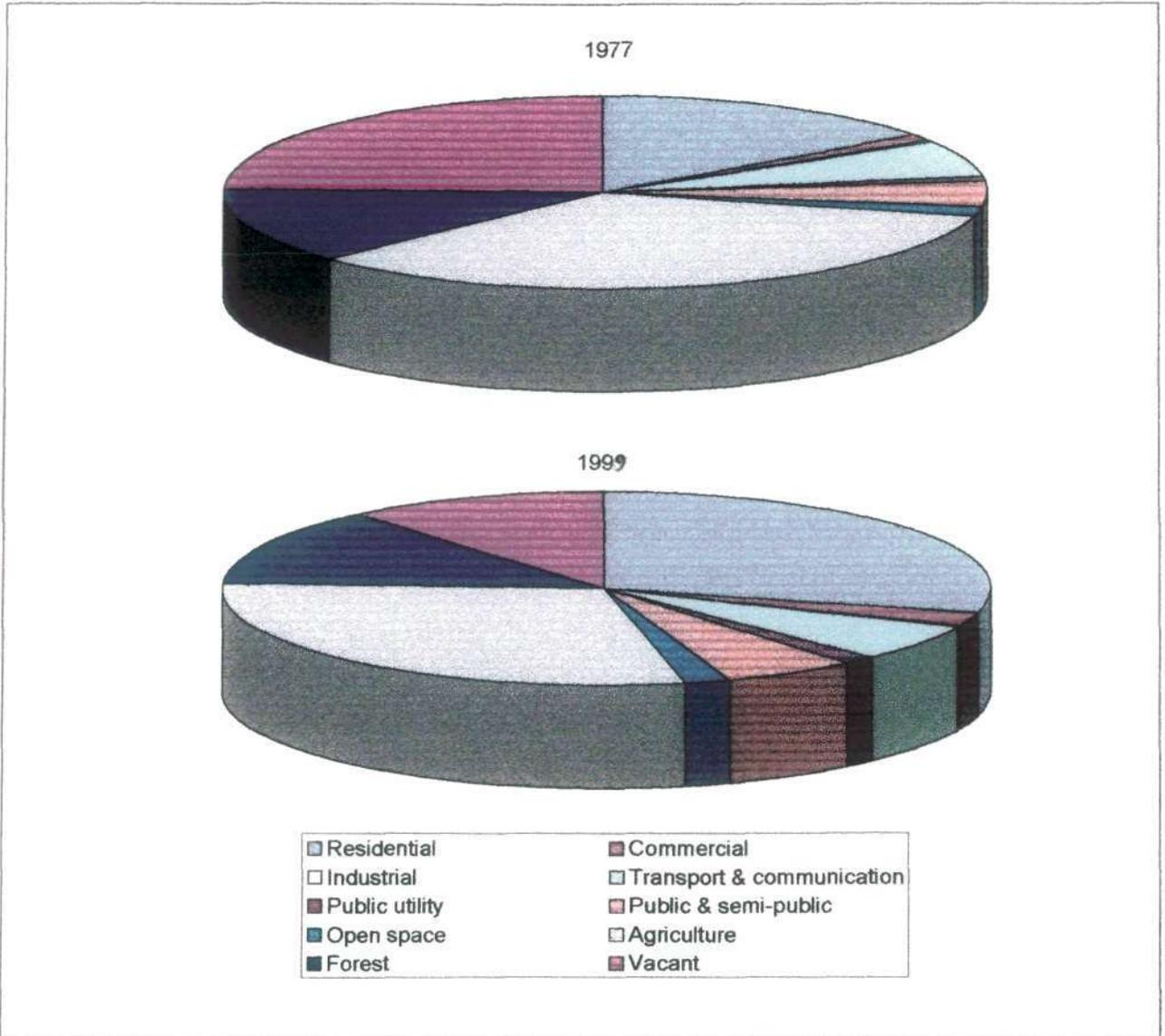


Fig. 3.7 : Land use pattern during 1977 and 1999.

About 18 percent (Table 3.11) of the total land of the town has experienced a change in land use pattern – from one function to another during 1977-99 and its spatial distribution in

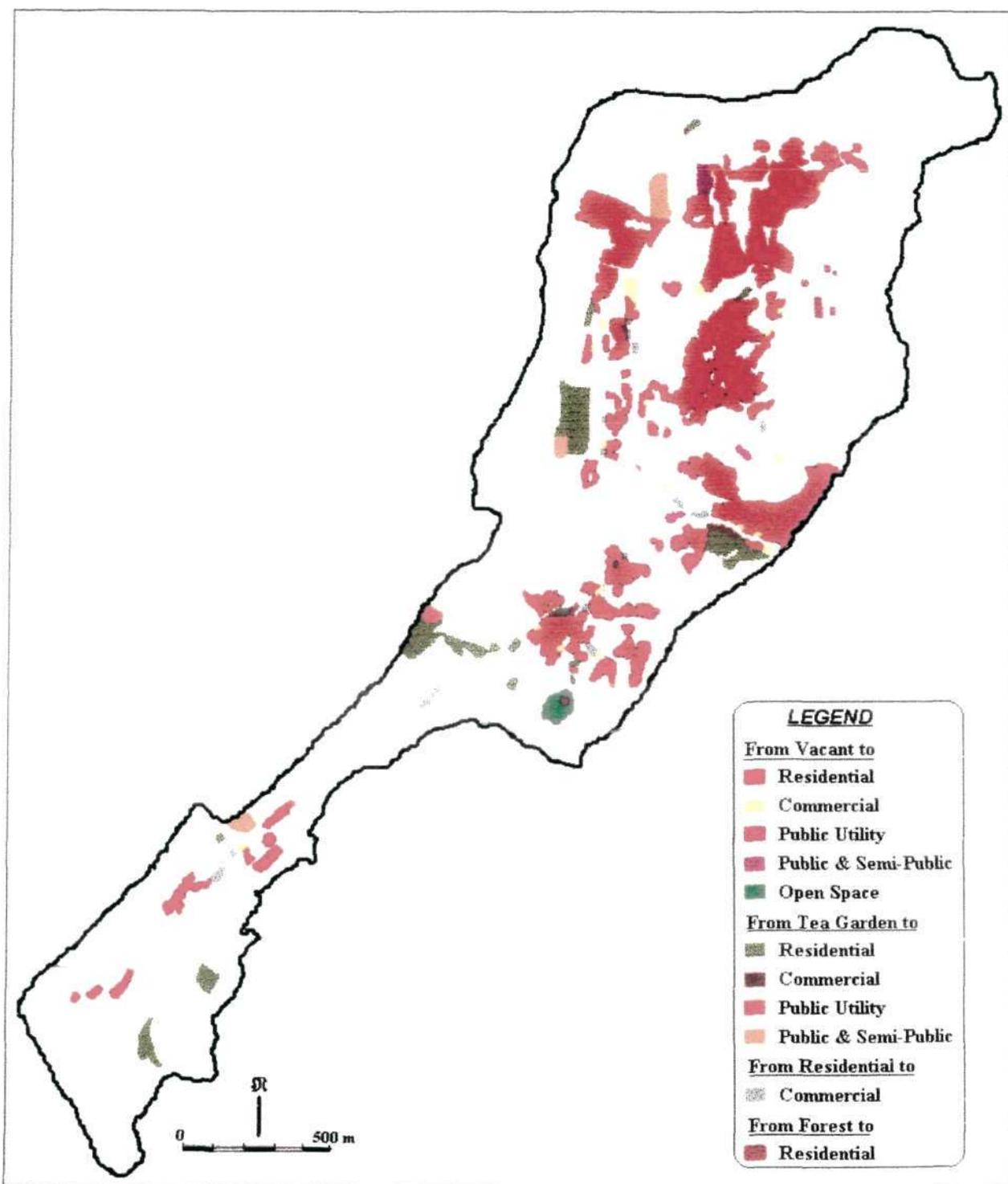


Fig. 3.8 : Changes in Land use pattern during 1977-99.

Table 3.11 : Change in land use pattern during 1977-99.

Gain / Loss in area (in ha)	Residential	Commercial	Transport and Communication	Public utility	Public and semi-public	Open space	Total area
Residential	-	2.996	-	-	0.041	-	3.037
Industrial	-	-	-	-	0.287	-	0.287
Agriculture	15.852	0.106	-	1.708	4.03	-	21.696
Forest	0.361	-	-	-	-	-	0.361
Vacant	58.587	2.420	0.226	0.773	2.35	1.957	66.313
Total area	74.800	5.522	0.226	2.481	6.708	1.957	91.694

different wards of the town are shown in Fig. 3.9 (a-j). During the period 1977-99, the land under urban use has increased by about 60 percent and this has happened at the expense of agricultural and vacant lands. Three wards (I, VI and VII) have experienced very less (less than 10 percent) change in its built-up area whereas two wards (V and X) have experienced an increase in its built up area by more than 90 percent. Nine wards have experienced an increase in urban land use more than the town's average.

3.4.1 Urban Use

(a) Residential

Built-up area occupied by residences have increased by about 95 percent in the town and this was possible due to the availability of vacant land and encroachment on the tea garden areas and on a smaller scale on forest's land. Maximum transfer of land from vacant to residential use has taken place in eight wards. Agricultural land has been encroached upon in five wards out of which it was the maximum in two wards (IX and XII). Encroachments of forest land for residential purpose has taken place in ward I.

The demand for space has resulted in a change of building types – from wooden single storey buildings to concrete buildings, usually two or more storied. This change is most visible in the Central Business District and in the areas surrounding it. This has increased congestion

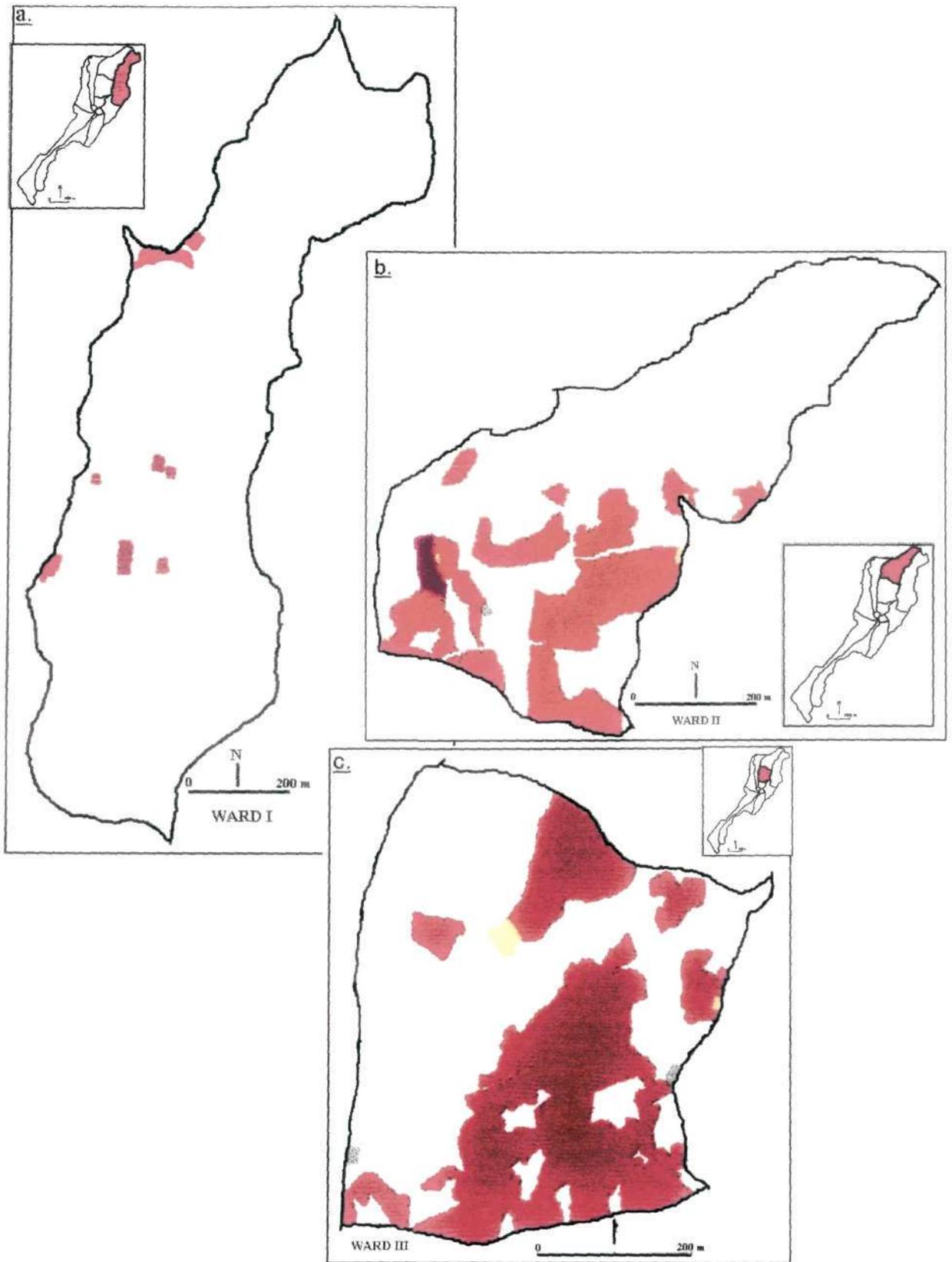


Fig. 3.9 : Changes in land use pattern during 1977-99 in wards (a) I, (b) II and (c) III.

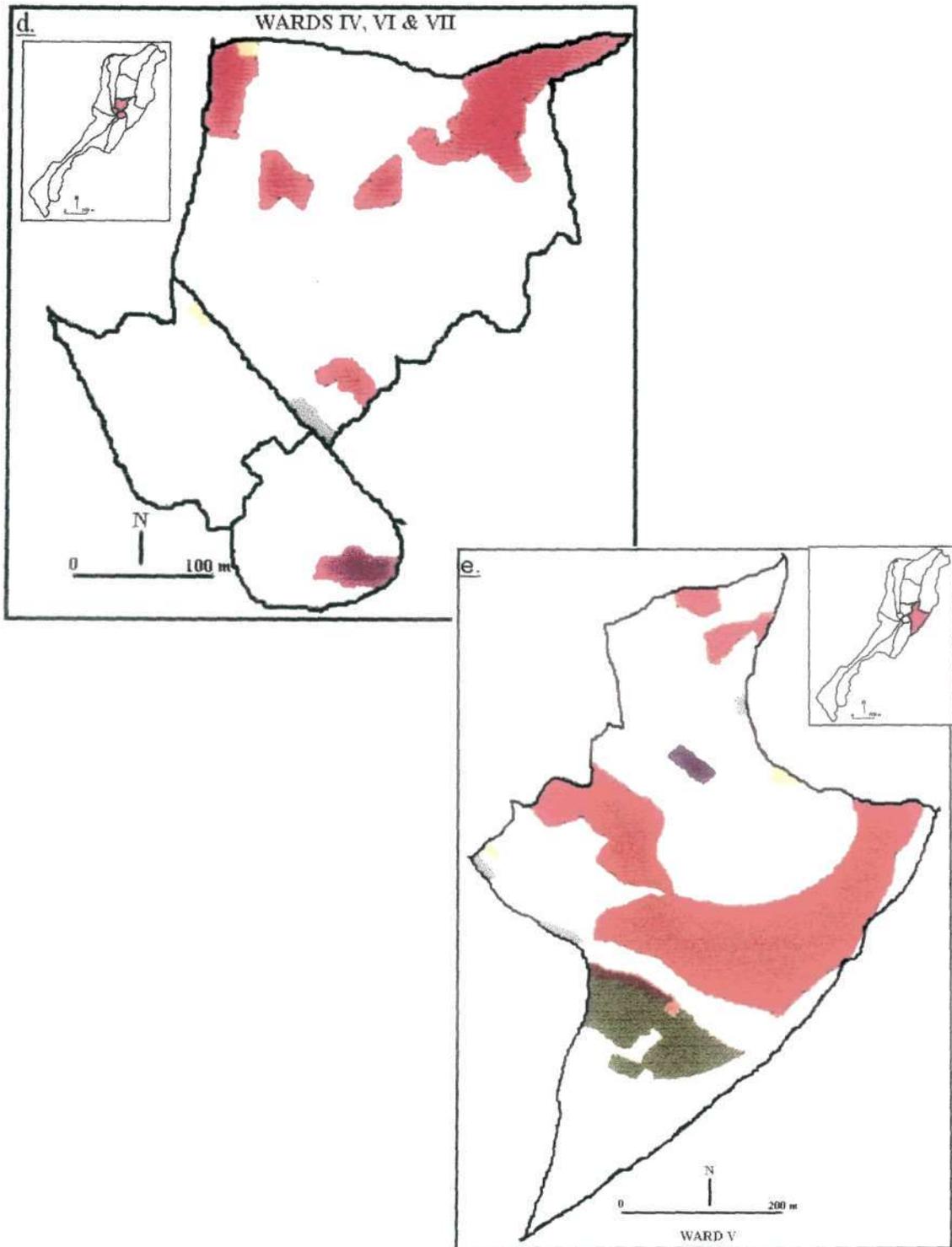


Fig. 3.9 : Changes in land use pattern during 1977-99 in wards (d) IV, VI and VII and (e) V.

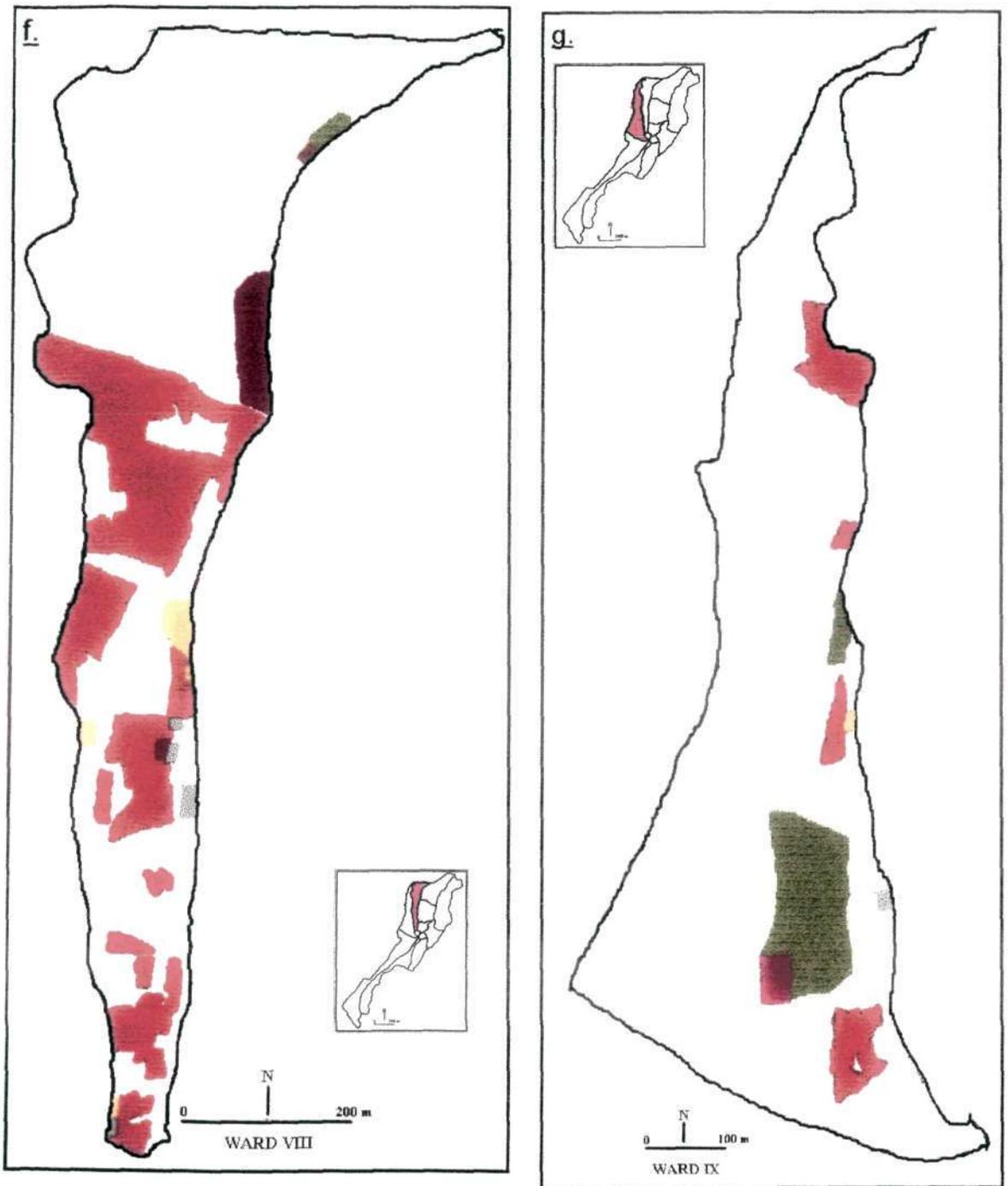


Fig. 3.9 : Changes in land use pattern during 1977-99 in wards (f) VIII and (g) IX.



Fig. 3.9 : Changes in land use pattern during 1977-99 in wards (h) X, (I) XI and (j) XII.

and most of the buildings are coming up without following the municipality building rules. *Bustys* have come up in wards III, V, VIII, IX, X and XII and here the conditions of the houses are sub-standard.

(b) Commercial

Built up area occupied by commercial uses have almost doubled and this was made possible by two factors – (a) increase in population and (b) growing importance of Kurseong as an educational centre. Transfer of land for commercial uses have taken place mostly from residential and vacant lands. Shops have come up in almost all the wards. In certain cases existing buildings have been converted into schools or boarding houses. Schools run by private owners have come up in the northeast, southeast and southwest of the town.

(c) Industrial

No new industry has come up in Kurseong town. The Cutlery Servicing Station which was set up during the Second Plan period to render assistance and technical know-how to traditional artisans manufacturing tea garden implements had been closed and later on it was converted into a training centre for carpet weaving and that has also become non-functional.

(d) Transport and Communication

Except an un-metalled road in ward V, no new road has been constructed. Even though the pressure on existing roads are increasing, especially on the Hill Cart Road and the Pankhabari Road, there is hardly any scope for either widening or making a new road due to the terrain of the land.

(e) Public Utility

Land under public utilities has increased specially in wards III, X, XI and XII.

(f) Public and Semi-public

Area under public and semi-public uses has increased in eight wards.

(g) Open space

Lack of open space is evident and except the park at Eagles Crag and an extension of the Montiviot Playground no new area has been added.

3.4.2 Non-urban use

About 54 percent of the vacant land available in the town has been utilised for different purposes especially for residential uses. Encroachments on tea garden lands have taken place for residential uses.

3.5 INTENSITY OF URBAN LAND USES

The intensity of urban land uses decreases away from the city centre. To test this hypothesis, a number of concentric circles within the urban area were drawn on the land use map of 1977 and 1999 of Kurseong town, at an interval of half a kilometre from the centre of the Central Business District. The different categories of land uses were measured within all the circles and then the percentages of all the uses in each circle were calculated (Fig. 3.10). In doing so, however, only the areas falling within the urban boundary were considered.

3.5.1 In 1977

In 1977, the following characteristics were prevailing in the town:

- (i) The residential areas were high in two zones. Near the Central Business District centre, these covered 21.3 percent of all the uses and in the next zone the percentage was 20.28. The residential areas decreased outwards and it decreased to 2.1 percent in the fringe areas.
- (ii) The commercial use was high (5.53 percent) near the centre because of the location of the market. Outwards, the percentages of commercial areas were negligible.
- (iii) The distribution of industries was irregular.
- (iv) Area under transport and communication was high at the centre due to the presence of the station of the All India Radio and the major roads like Hill Cart Road and Pankhabari Road. The percentage was also high at a distance of 2 km from the town centre.
- (v) The land use under public utilities was considerable (1.95 percent) at the centre and remains more or less same till 2 km distance.
- (vi) The land use under public and semi-public uses increased outwards from the town centre and was the maximum at a distance of 1km.

(vii) The area under open space was less at the centre and increased outwards with a maximum at a distance of 2 km.

(viii) The agricultural land covered 38.27 percent at the centre and decreased outwards till a distance of 2 km and after that the share increased to 79.68 percent in the fringe areas of the town.

(ix) Forest land was found between 0.5 km and 2 km from the town centre.

(x) Vacant lands were high in the C.B.D. centre and were considerable in all the zones with the highest in the 1.5 to 2 km distance zones.

3.5.2 In 1999

In 1999, the following characteristics are prevailing in the town:

(i) The residential areas are high in two zones. Near the C.B.D. the residential use covers 41.52 percent of all the uses and in the next zone the percentage is about 39 percent. The area under residential use decreases away from the centre of the town and it decreases to 6.3 percent in the fringe areas of the town.

(ii) The commercial use is high (about 8 percent) near the centre. This is so because the market is located here. Outwards, the percentage of commercial area to total area decreases.

(iii) The industries found in Kurseong are mainly the tea garden factories and the railway workshop and the distribution is irregular.

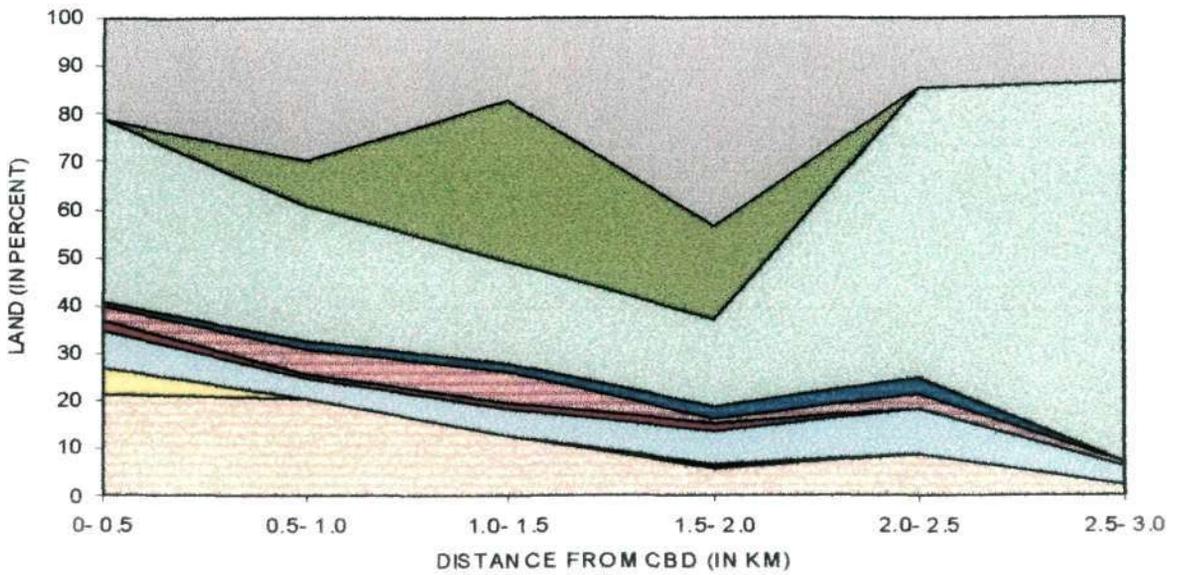
(iv) The transport and communication use is high (8.08 percent) at the centre due to the presence of roads and the location of the All India Radio Station. The use remains more or less same away from the town centre.

(v) The land use under public utilities is considerable (1.95 percent) in the centre and remains more or less same till 2 km distance and after that it is absent.

(vi) The land use under public and semi-public uses is considerable (about 5 percent) near the centre and increases outwards till one and half kilometre distance from the centre. The use decreases thereafter in the fringe areas.

a.

1977



b.

1999

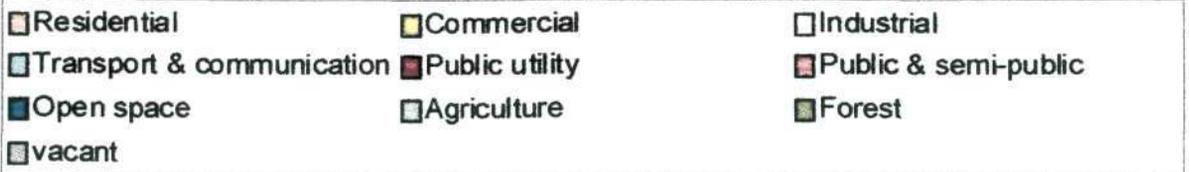
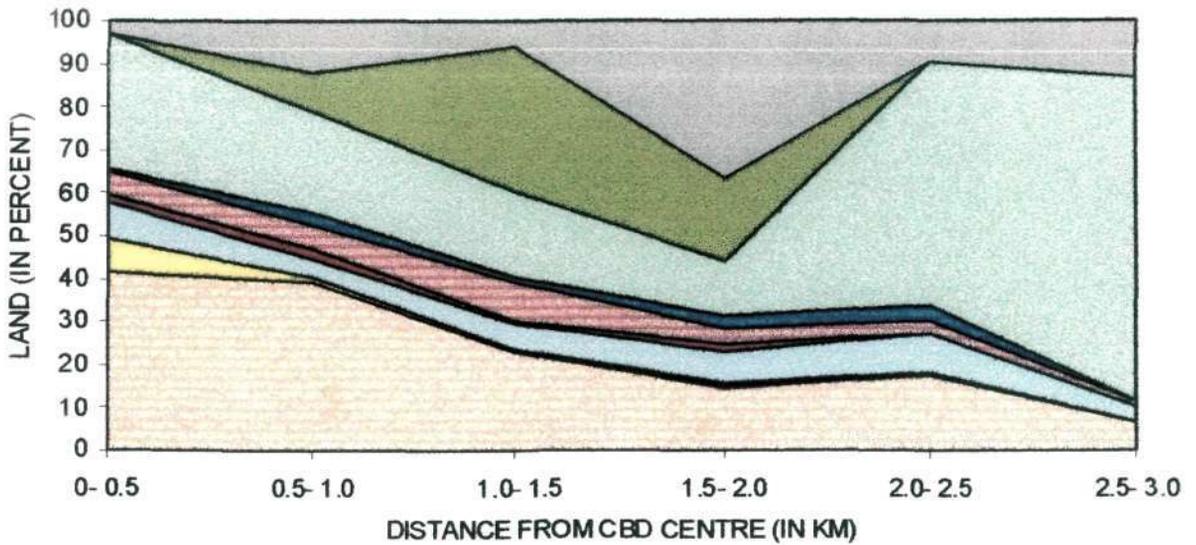


Fig. 3.10: Variation in the proportion of land use with distance from the CBD in Kurseong town.

(vii) The area under open space is very less at the centre and increases in an irregular manner and ends rather abruptly.

(viii) The agricultural land covers 31.82 percent at the centre. It decreases irregularly outwards and after a distance of 2 km, the percentage of agricultural land use increases and at a distance of 3 km the share increases to 3/4th of all the uses.

(ix) Forest is absent at the centre and increases to 9.19 percent and 33.74 percent respectively of the total land uses away from the town centre . The share decreases after this and is not found after 2 km distance.

(x) Vacant lands are very less near the commercial centre but are found in all the zones. The share of the vacant land is very high (about 37 percent) at a distance of 1.5 km from the centre.

3.5.3 Changes in intensity of land uses during 1977-99

Land use under residential use has increased tremendously in all the zones with the maximum at the centre. Land under commercial use has also increased in all the zones. An increase in the share of these uses has taken place due to the utilisation of vacant land and encroachment of agricultural land.

3.6 EFFECT OF LAND USE ON LAND VALUE

Urban geography is largely concerned with the city as a commercial system, as the place where commodities and services are manufactured, bought and sold. Land is a vital commodity in cities, that closest to the main centre of activity being the most valuable. Thus the position within the city of any site affects its monetary value which, in turn, affects its eventual use for offices, industry or housing (Murphy, 1974.). Commonly a Central Business District with banking, insurance and main offices of corporations adjacent to major retail shopping areas is found at the city centre and has high land values. Away from this central area land values tend to decrease. In most of the western cities as well as in Indian cities, land value decreases outward from the hub of the major shopping centre (Singh, 1979). To find out the gradient of land value in Kurseong, help of the Registration department of the SDO's office was taken. Presently, the department of Land and Land Revenue fixes the minimum value of land per square metre in different parts of a town. On the basis of information

received from the Registration department, the map of land values has been prepared (Fig.3.11)

The value of land is very high along the National Highway. The highest value (above Rs. 3,900/- per square metre) is observed in ward VII. The Gudri Bazaar in ward VII also has high land value. At road junctions and along the roads, the value of land is higher than in the areas poorly served by roads. The high and medium land value areas are observed side by side in the central part of the town. A comparative study of land values and land use shows a certain relations. The commercial areas of wards VI and VII have very high land values. The residential areas of wards IV, VIII, IX, X, XI, XII lying near the commercial area have medium land values on account of their locations. The commercial use has a dominant control over land values in Kurseong. However, the generalisation supports the view that gradient of land values decreases away from the centre of the town.

CONCLUSION

Of the total area of the town (504.97 ha) only 29 percent was developed in 1977. About 51 percent of the developed area was devoted to residential use of which it was high in 33 percent of the wards in the town. Commercial land use was more important at the centre of the town. Land use under industries was insignificant. Transport and communication covered the 2nd highest and public and semi-public land uses covered the 3rd highest percentage of the developed area in the town.

In 1999, the developed area in the town increased to 47 percent of which it was above 75 percent in 4 wards. In ward I the developed area is the lowest. About 62 percent of the developed area or about 29 percent of the total land are devoted to residential use. Wards III, V and X have about 75 percent of their urban land under residential use and of these wards III and V have grown as new residential zones. Wards like III, V, IX and X have experienced the growth of sub-standard houses. Commercial land use is still concentrated at the centre of the town where both wholesale and retail business activities are carried out. Transport and communication land use covers 13 percent of the built up area and its share is maximum in ward I. Land under public utilities is the lowest in ward VII and the highest in ward IV. Public

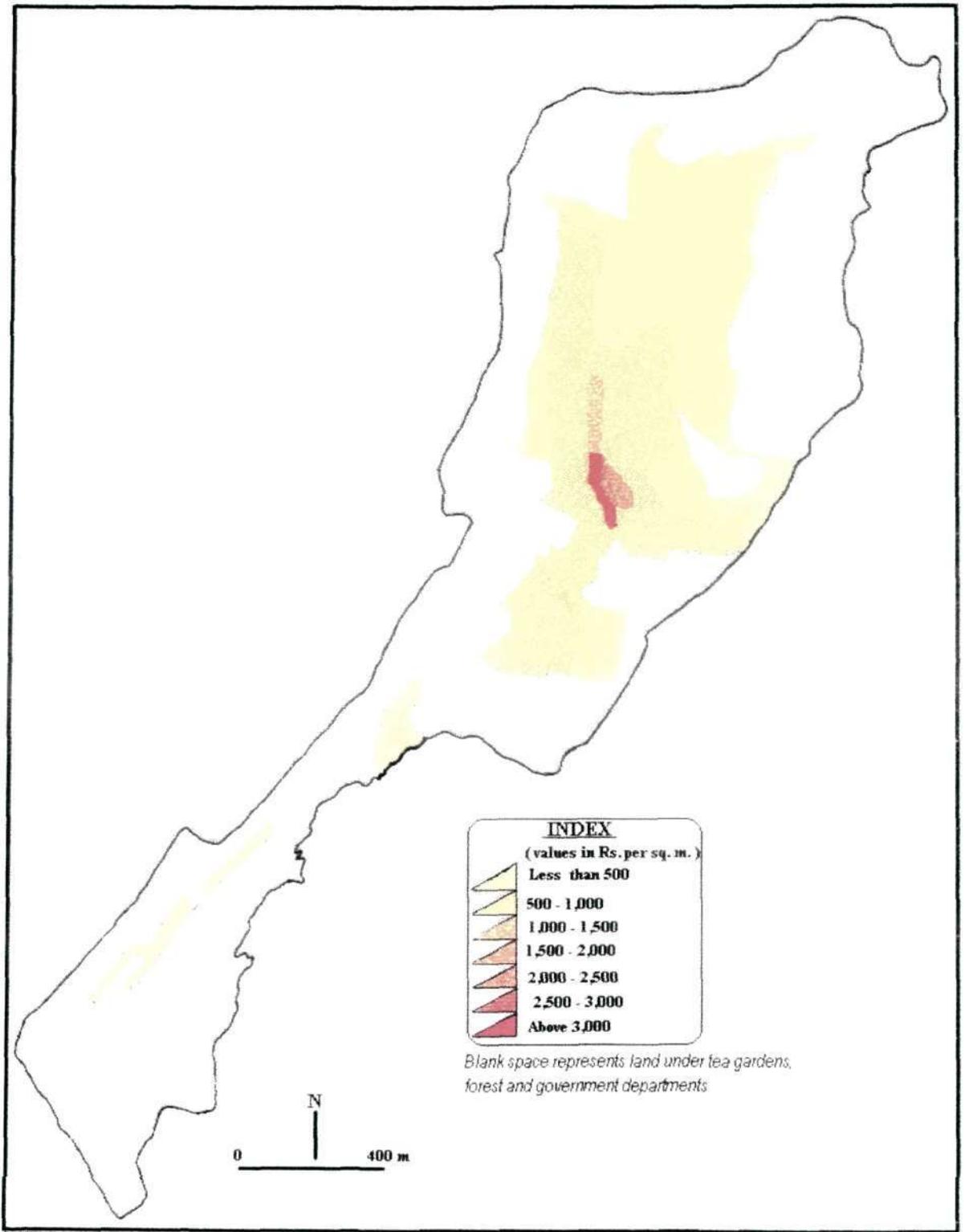


Fig. 3.11: Land value in Kurseong town (1999).

and semi-public land use is very low in 4 wards and very high in 2 wards (I and IV). Playground and parks account for about 4 percent of the built up area of the town.

During 1977-99, built up area in the town has increased by about 60 percent and this increase was above 90 percent in wards V and X. Residential and commercial land uses have experienced the maximum growth. In eight wards, residential land use has increased due to the availability of vacant lands. In two wards (IX and XII) encroachments of agricultural land for residential use was the maximum. Increase in population and the growing importance of Kurseong town as an educational centre have led to increase in commercial land use. The town has not experienced any growth of industries.

The intensity of land use reveals that in 1999, the residential land use doubled at the centre of the town in comparison to 1977, but in the outer zones the percentage decreases. Commercial land use has increased in all the zones. The land use under public utility is not found beyond a distance of 2-km from the centre of the town. The public and semi-public land use decreases in the fringe areas. Vacant land is negligible near the centre of the town.

The land use pattern reflects the use of land by different socio-economic functions in the town. Some of these functions have increased in the town over the years. The functions like educational institutions, trades and commerce and transports and communication reveals the socio-economic status of the town and its people.