Chapter – VI

*Morphological Characteristics of Urban Centres*
CHAPTER -VI

MORPHOLOGICAL CHARACTERISTICS OF URBAN CENTRES

It seems necessary, that geographers should pay more attention to the physical ground plan on which the city rests. As a matter of fact towns with their appreciable size have an internal geography that is full of interest and significance. The physical forms and arrangements of spaces and buildings which consist of urban landscape provide an ample opportunity to geographers to investigate and analyse their nature, their relative disposition and their social interdependence. The urban land use is a term which denotes urban space; land area of cities, water areas in the cities and three dimensional spaces above the surface of the city, or “The land we are concerned with, can be described as land now used for purposes that are characteristically urban”.\(^1\) In essence the term “Urban Land Use” broadly refers to spatial distribution of city functions, its residential communities or living areas, its individual commercial and retail business districts or major work areas, and its institutional and leisure time functions.\(^2\) The past urban studies have clearly revealed that the broad geographical pattern of these functional areas, their characteristics, how they developed and they change have been the burning topics of research from variety of related fields, such as architecture, land economics, geography, human ecology, sociology and others. Scientifically oriented systematic

attempts at theoretical explanation of land use arrangement is made by scholars such as Burgess\(^3\), Hoyt\(^4\), Mckenzie\(^5\), Harris and Ullman\(^6\) and Firry.\(^7\)

Some of Indian Geographers have studied the morphological structure of towns including Ujagir Singh\(^8\), V.N.P.Sinha\(^9\), Taneja\(^10\), but there are significant variations in their emphasis. For example, Ujagir Singh explained that the urban morphology of towns are characterized by the existence of two distinctive forms of habitat differing from one another in layout, open spaces and type of houses. The old city and bazar represent a typical Indian urban environment with narrow lanes, old types of clustered houses, crowded shops and little or no open space.

V.N.P. Sinha has considered the study of morphology of urban settlement as primarily concerned with the ground plan. The ground plan consists of an external outline and internal arrangement of streets, forms and materials of buildings and the functional structure of town. Taneja’s work demonstrates the morphological setup of the various functions that differ from place to place and time to time. It varies because it is the outcome of human

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creative instincts projected through the total setting of resources and cultures within the limits of time and space. However, the explanation of urban land-use arrangement based on scientific orientation is studied by R.L. Singh\textsuperscript{11} and K.S. Ramegowda.\textsuperscript{12}

The rationale behind the economic explanations of the urban land use pattern is based on the assumption that economics acts beyond the immediate environs of any particular urban centre which involves consideration of the structure and functioning of the urban economy as it fits into the larger economy of the region and the nation. Both regional and localized forces interact to shape the land use patterns. The social action in a particular city influences the location and arrangement of land use although they are less understood frequently confused with the economic determinants. Although both kinds of influences interact with each other and it is difficult to differentiate the effects, social scientists in order to provide a coherent framework for interpreting the urban land use structure, are increasingly directing their attention to the role that social values and ideals play in determining the land use patterns of cities. In essence, the behaviour patterns of Individuals, institutions and forms which occur in the spatial patterns largely determine the physical structure of a city. The urban land use patterns as the aggregate product of many individual and group actions in occupying and improving the land, we may view those actions as a form of human behaviour activated by certain human needs and wants. (See Fig. No.6.1).

\textsuperscript{12} Ramegowda, K.S. (1972) "Urban and Regional Planning", Prasaranga, Mysore University, Mysore.
THE SEQUENCES OF ACTION AND THE INFLUENCE OF VALUES IN BRINGING ABOUT A CHANGE IN THE URBAN LAND-USE PATTERN

Fig. No. 6.1
In this chapter an attempt has been made to analyse the general morphological characteristics of all the towns of coastal Karnataka, external form of towns, land-use analysis by town-wise and class-wise, and finally an analysis of the detailed morphological characteristics of four selected urban centres viz., Manglore and Udupi as class I, Karwar as a class II, and Bhatkal to represent the Class-III.

GENERAL MORPHOLOGICAL CHARACTERISTICS

The plans of towns of Coastal Karnataka appear to have been influenced by multiple factors which may broadly be differentiated as natural and cultural. Among the natural factors rivers, sea shore and other features like ridge, flat plateau, extensive plain, mineral resources, land resources and ocean resources are influenced. Apart from the physical conditions, the existence of cultural features (like fort and temple) have also influenced the development of urban structures. The historical background of some of the urban centres of coastal Karnataka have played important role in their make-up. Such centres grew as socio-politico-economic centres of kingdoms or principalities of local chiefs, for example Karwar town. For strategic reasons they had commanding situation. Houses were huddled together in a compact manner and in some cases the towns were fortified with walls resulting in greater compactness. Their original function was to control neighbouring territory but due to the obvious advantages other functions like handicrafts, trade and commerce were attracted by these centres.
The selection of the site, the planning of a network of roads and the designing of houses bear the mark of their historical origin. The patterning of the Pre-British and British period urban centres is entirely different. Urban centres of the pre-British period had a tendency of concentration of all activities in a small area. People flocked within a limited area and created congestion and over-crowding. There was hardly any space left for open lawns. While towns or portions of towns established by the British consisted of wide road, sufficient open space.

The horizontal expansion of the urban centres takes place due to development of means of communication i.e. railway, roads, radiating from the service areas within the urban boundary. With the construction of mettled roads connecting the surrounding service areas effects on the growth of urban centres. The industrial growth and vegetable farming takes place along the roads in the fringe areas. Consequently the original external form is distorted with new additions in certain directions. Civil lines are mainly administrative and residential in function containing government offices, courts, post and telegraph offices, public gardens, parks, clubs and dakbungalows. The extent of civil lines depend on the size and administrative importance of the town. Sometimes industrial establishment, educational institution and administrative offices, serve as nucleus for settlements and help in the horizontal expansion of the urban centres, for example Karwar town.
GENERAL MORPHOLOGICAL APPEARANCE OF ALL TOWNS IN COASTAL KARNATAKA

The general appearance of the urban centres is represented by a consolidated arrangement of roads and streets, buildings and building materials, Plans of houses, open spaces, etc. Many of the urban centres have developed from villages and present unplanned features. Roads of such towns are still zig-zag with narrow bends and houses differently piled with a closed frontage. But some localities which have developed in a more or less planned manner have good houses such as new extensions of Mangalore, Udupi, Karwar, Bhatkal and Honnavar. The main roads are generally mettled, pitched and often broad but as we proceed outward from the business centre to the residential areas, the streets become narrow and unmettled. This road again becomes wider at the end of the town and on the peripheral parts of the town. The streets of the small towns usually consist of unmettled path.

Dwelling of the urban centres of coastal Karnataka are also influenced by town size and their functional type and structure. Large number of towns in the study area have majority of houses built by masonry and bricks. But during recent years concrete houses are being constructed rapidly in the urban areas. In all most all urban centres of Coastal Karnataka lateritic stones are used as building material of house construction. In newer urban centres whose origin is linked with particular industry the buildings are generally R.C.C. and are constructed in planned way.
In many towns of the coastal Karnataka the streets are not so wide as to not permit two-ways traffic. In some towns, like Karwar, Udupi and Kumta the fragmentary remains of past cultures and partial superimposition of modern aspects are also seen. Most of the smaller towns are situated only on one main road with streets on both sides. These towns are predominantly rural in character. Several urban features like parks and play grounds are not present in such small towns.

**Building**: The buildings are the important component of the town/city and they become significant aspects of morphological studies. The dimension of the building, the plan of the building, the nature of the door, the number of storeys, building materials of the roof and slope of the roof are worthy of study. Buildings have to be studied from the point of view of age, architectural style, functions, building materials, standard of the house, scope of ventilation and sun-light, open space etc.

Except the planned sections of few towns like Manglore and Karwar, the urban centres of coastal Karnataka are mostly unplanned. Consequently most of the urban houses consist of traditional designs having lateritic stone wall and roof tiles. Brick houses predominate in extension parts of all urban centres of the region. The difference arises only in their size and structure. About 30.00 percent of the urban houses of coastal Karnataka are constructed by burnt bricks, cement plastering with concrete and 70.00 per cent of houses are constructed with lateritic stones wall and wooden roofs.
EXTERNAL FORM OF TOWNS:

The characteristics of a town plan are the product of many factors of natural setting and social conditions. The internal ground plan is related to physical factors of the site. It is also sometimes related to the historical features of the site such as fort or some central building or important highway. The external ground plan is an expression of the past history of the town as well as the present physical factors. Now if attention is paid towards physical factors of the site, the influence of the site on the ground plan may easily be appreciated.

a. The Shape of Towns: Due to Arabian sea on the west no town is of circular shape in Coastal Karnataka. The remaining parts of towns have grown gradually making the shape of towns efficient to the extent of 50 to 70% when compared to circular shape.

CLASSIFICATION OF URBAN LAND-USE:

Classification is most significant to the study of urban land-use, because it provides an easy key to understand the complex character of the city structure. The classificatory scheme points out that groupings or classes of land use are not arbitrary, they are rational and empirical, and have some basis for their development and have some measure of extended applicability. As a matter of fact, it is realized that no single land use classification can cater to all needs of all cities, but in general there should be some basic structure of the classification which is applicable to many if not most cities.
Since most of the land use classifications have been formulated by urban planners hence they are generally accepted as formulised land-use classifications given in the Figure No. 6.2. However, more recently, an attempt has been made by a professional planners and organizations, who focused on land-use characteristics alone as a basis for classification (See Fig. No. 6.3). This classification is well formulated and is applicable to most of the towns/cities. The land use pattern of any urban area is a reflection not of the immediate and current space requirements of a community but greater of their cumulative needs over a period of years. The urban areas are complex systems which have created myriads of problems and they need adjustment and modification in the physical form of the urban environment. This physical form is called morphology of the towns. As a matter of fact many diverse forces are consistently reacting upon urban society, creating pressures for growth and renewal in the physical form of the urban environment.

By considering the above said land-use classification and land-use characteristics of towns, here an attempt has been made to analyse the land-use classification of four major urban centres of 1991 census as data for land-use study for 2001 is not available. (except Kadra and Hosangadi K.P.C. Project Colony which are not towns as per 2001)* (See Table No. 6.1).

* According to 1991 census land use data is not available, because they are newly emerged K.P.C. Project Colony.
CLASSIFICATION OF USES OF URBAN LAND

TOTAL CITY/TOWN MUNICIPAL AREA

DEVELOPED AREA

PRIVATELY DEVELOPED AREA

RESIDENTIAL

COMMERCIAL

INDUSTRIAL

PUBLICLY DEVELOPED AREA

PUBLIC AND SEMI-PUBLIC

PARK, PLAY GROUND & OPEN SPACES

TRANSPORT AND COMMUNICATION

NON-DEVELOPED AREA

VACANT LAND

WATER SHEET

AGRICULTURAL LAND

Fig. No. 6.2
STRUCTURE OF A LAND-USE CLASSIFICATION SYSTEM BASED ON LAND-USE CHARACTERISTICS

Fig. No. 6.3
<table>
<thead>
<tr>
<th>Size Class of the Town</th>
<th>Nos</th>
<th>Name of the town</th>
<th>Developed Area</th>
<th>Non-Developed Area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Residential</td>
<td>Commercial</td>
</tr>
<tr>
<td>Class-I 1,00,000</td>
<td>1</td>
<td>Manglore</td>
<td>3425.59 (16.27)</td>
<td>340.18 (1.62)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6412.00</td>
<td>340.18</td>
</tr>
<tr>
<td>Class-II 50,000 to 100,000</td>
<td>1</td>
<td>Karwar</td>
<td>354.76 (24.72)</td>
<td>10.54 (0.73)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>8690.82</td>
<td>10.54</td>
</tr>
<tr>
<td>Class-III 20,000 to 50,000</td>
<td>1</td>
<td>Bhatkal</td>
<td>212.95 (67.44)</td>
<td>7.06 (2.24)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>629.26</td>
<td>7.06</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Kundapura</td>
<td>217.27 (18.35)</td>
<td>11.73 (0.99)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>629.26</td>
<td>11.73</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Kumta</td>
<td>289.43 (54.29)</td>
<td>6.50 (1.22)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>629.26</td>
<td>6.50</td>
</tr>
<tr>
<td>Class-IV 10,000 to 20,000</td>
<td>1</td>
<td>Baindur</td>
<td>195.86 (7.00)</td>
<td>6.35 (0.23)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>70.70</td>
<td>6.35</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Gangoli</td>
<td>100.07 (56.16)</td>
<td>2.78 (1.84)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>74.48</td>
<td>2.78</td>
</tr>
<tr>
<td>Size Class of the Town</td>
<td>Nos</td>
<td>Name of the town</td>
<td>Residential</td>
<td>Commercial</td>
</tr>
<tr>
<td>------------------------</td>
<td>-----</td>
<td>------------------</td>
<td>-------------</td>
<td>------------</td>
</tr>
<tr>
<td>Class -V 5,000 to 10,000</td>
<td>1</td>
<td>Mallar</td>
<td>67.61</td>
<td>(14.00)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(89.19)</td>
<td></td>
</tr>
<tr>
<td>Class -VI &lt; 5,000</td>
<td>1</td>
<td>Hosangady</td>
<td>N.A.</td>
<td>N.A.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>N.A.</td>
<td>N.A.</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Kadra K.P.C. Project Colony</td>
<td>N.A.</td>
<td>N.A.</td>
</tr>
</tbody>
</table>

Note: Figures in parentheses ‘( )’ indicate the percentage to total municipal area of the town.
Figures in parentheses ‘[
]’ indicate the percentage to developed area of the town.
N.A. = Not Available.
1. **Residential Use**: Out of the developed area of the town the highest percentage (89.19) of land used for residential purpose is recorded in Mallar town (near by Udupi town), but lowest is recorded in Binaga town (44.94%) (near Karwar). Among the 17 towns as per 1991 census of the study region, seven towns viz., Mallar (89.19%), Mulki (82.51%), Gangoli (74.48%), Bhatkal (73.52%), Tonsewest (72.81%), Udupi (70.91%) and Baindur (70.70%) have utilized very high percentage (more than 70.00%) of land under residential purpose. The two urban centres namely Manglore and Binaga have used less than 50.00 per cent of land under residential purpose.

2. **Commercial Use**: It is basic economic function of every town and is very revealing that the percentage of area under commercial use (trade and commerce) is very less in the towns of the study area as compared to other urban functions. More than 9.00 per cent of land is used for this purpose only in Saligram town (9.77%) which is highest amongst the towns of the Coastal Karnataka while lowest is noticed in Mallar Town (0.49%). Out of their developed area more than 2.00 percent of land is used for commercial use in Manglore, Honavar, Kundapura, Ankola, Bhatkal, Udupi, Baindur and Gangoli towns. The remaining six town have less than 2.00 per cent of land under commercial use.

3. **Industrial Use**: The Binaga, Manglore, Kundapura and Ankola are noted industrial urban centres of Karnataka Coast. Among these, Binaga town has 70.66 hectares of land under Industrial purpose, which is 38.06 percent of
developed area (185.66 hectares) of the town wherein the Ballarpur caustic factory alone shares 75.00 hectares (34.55%) of Industrial land. Other industries like saw mills, bakeries, blacksmith and some other small units like garages, oil mills etc., are concentrated at the western periphery of Binaga town within the municipal limit (786.42 hectares). The second important industrial centre is Manglore where 12.25 per cent (845.55 hectares) of the developed area (6909.01 hectares) is used for industrial activity. This city has several tile factories and cashew processing, coffee curing industries, chemical fertilizer industry and petroleum refinery. In case of Kundapura it is 29.74 hectares (8.36 per cent of developed area) while Ankola it is 26.34 hectares (5.00 per cent of developed area). The remaining 13 towns in coastal Karnataka have less than 5.00 per cent of land under industrial growth.

4. Public and Semi Public Use: In the towns of study region the public and semi-public use of land varies from town to town. In this category all types of offices, all types of religious centres and educational centres are considered. Seven towns have devoted more than 7.00 per cent of their developed land for public and semi-public use, among these Kumta is first ranking with 12.53 per cent (59.44 hectares). Because of its and taluka administrative offices, it is quite necessary to have several buildings for public utility. Then, it's followed by Manglore (9.46%), Bhatkal (9.37%), Ankola (8.00%), Karwar (7.98%), Gangoli (7.93%) and Tonsewest (7.47%) towns. The remaining ten urban centres have utilized their land at lesser extent (less than 6.00%) for the public and semi-public uses.
5. **Parks, Playgrounds and Open Space**: The land used for parks, playgrounds and open space is limited in almost all towns of Coastal Karnataka. The highest percentage of land is used for parks, playground and open space is in Honavar town with 10.89 per cent of the developed area, it’s followed by Ankola (10.12%), Saligram (4.69%) and Kundapura (4.50%). In remaining 12 towns including Manglore city (2.96%) and Karwar (2.43%) it is lesser extent. In most of the towns park, playground and open space have been around government offices.

6. **Transport and Communication**: Out of the 17 (as per 1991) towns of the study region five towns viz., Saligram (24.21%), Honavar (22.38%), Karwar (21.89%), Baindur (21.80%) and Manglore (20.82%) have utilized more land for transport and communication purpose. Whereas in seven towns (Kumta, Udupi, Kundapura, TonseWest, Mulki, Ankola and Binaga) medium extent (14.00 to 19.00%) of land is used for transport and communication purpose while, the lesser percentage (less than 14.00%) of land is used for transport and communication activity in three towns (Bhatkal, Gangoli and Mallar).

**Non-developed Area**: This category includes the vacant land and agriculture land. Compared to the other uses of land, the land under the vacant and agricultural is very high in some towns. More than ¼ of the land is vacant in ten towns (Karwar-61.48%, Manglore-36.72%, Honavar-35.70%, Ankola-25.46%, Binaga-22.38%, Kundapura-16.82%, Townswest-15.19% and Saligram-12.40%). But this vacant land will be of immense use for the future
urban developmental activities. Another feature is that, the agricultural activity is a very common feature at the outer fringe of most of the towns in the Coastal Karnataka. These fields are usually used for growing vegetables and other food grains, using the gutter water, river water as well as borewell water. This type of activity can be seen in Mallar - 82.80%, Baindur - 81.69%, Mulki - 80.55%, Udupi - 68.24%, Tonsewest-63.24%, Binaga - 53.89%, Kundapura - 53.14% and Manglore - 30.46% of agricultural land respectively.

MORPHOLOGICAL ZONES OF TOWNS.

Morphological zones are classified as follows:

1) Inner zone,
2) Middle zone and
3) Outer zone

1. Inner Zone: The Inner zone consists mainly the older area of a town and primarily consists of the core business area also known as C.B.D. This zone geographically occupies the centre and in fully built-up area. It represents two types of clear cut sections, (i) business area along the road and (ii) residential areas in the interior. The ribbon shaped business areas lie along the main road of the towns. Retail shops occupy the ground floor while upper floors (in most cases) are used as banks, offices and residences. The street systems diverge from this zone to the various sectors of the towns. The houses are mostly of better class with one or two storeys. From the congested central parts the buildings extend radially along the main roads towards less congested fringes
where they show linear pattern of distribution. In the denser parts of the zone, open spaces are rare except an occasional garden attached to individual houses. Functional character of the inner zone is very complex and diversified. It rarely specializes in a particular function. In contrast to the newer civil lines and railway colonies which were laid out in planned fashion to serve definite function, the contiguous older part of the town have occurred history with various cultural and commercial foci at different period like Udupi city. The domes and minarets of mosques and pinnacles of temples are prominent in their sky lines. The municipal office and the town hall are also located in the inner zones the towns. Some of the towns that have this type of inner zone are Manglore, Udupi, Karwar and Bhatkal.

2. Middle Zone: The middle or intermediate zone is predominantly residential in character with some overlapping of business functions. Their zone is well linked with city proper by numerous roads which are broader than the lanes of the inner zone. In place of crowded lanes wide and straight roads crossing one another at right are found. This zone specialises in residences, public buildings, small cottage industries and administrative units etc.

3. Outer Zone: The outer zone in rather rural or semi-urban in character and generally possess more open landscape dotted with isolated groups of houses. The chief characteristics of the outer zone are the broader and straight roads showing better planning in their construction. It is mostly composed of lower class 'Kucha' houses and it includes the cantonment which has vast open space
dotted with officer’s bungalows, barracks offices etc., all beyond the approach of general public. A number of recently developed planned colonies are found in this zone. Several unplanned older rural settlements exist with old markets catering to their daily requirements in outer zone. Moreover, most of the big educational and medical or health centres lie in the outer zone of the cities, because they required more space.

**Sub-Urban Zone:** Besides the above mentioned zones, another zone usually develops in the fringe area beyond the municipal limit is sub urban zone. This zone, though under the influence of the urban centre, shows strikingly rural features. In their zone more than 70 per cent of land remains under cultivation but the nature of cultivation changes from food grains to production of vegetables and fruits. Sometimes heavy industrial establishment lie in this area due to the availability of cheap land near roads.

Recently with the establishment of several industries of the periphery and the extension of municipal limits of the town/cities, there has been developed urban fringe along the main thoroughfares even beyond the municipal corporation limits. The rural-urban fringe, an extension of the urban centre both actual and potential, is an area where most of the land-uses are in a state of flux. This area as a whole is being urbanised with incoming of electricity, drinking water, mettled roads and other such urban amenities.

**LAND-USE ANALYSIS BY SIZE CLASS OF URBAN CENTRES:**

1. **Class-I Cities:** Manglore and Udupi urban agglomerations being a class-I cities as well as district headquarters, on an average, have maximum land-use
under residential area (60.24%). However when viewed separately Mangalore city alone has only 49.58 % while Udupi city has 70.91% under residential land use. Incase of landuse under transport and communication Udupi and Mangalore together exhibit 18.99% however, in case of Mangalore city it is 20.82% while in case of Udupi city it is 17.17%. The landuse under public and semi-public utility is 7.35% for Mangalore and Udupi together. However, in case of Mangalore city it is 9.47% while 5.24% for Udupi city. The landuse under industrial activity is 7.20% together of Mangalore and Udupi, while Mangalore city alone shares 12.25% land under industrial use while 2.15% by Udupi city. In case of commercial land use Udupi and Mangalore together share 3.66% while Mangalore city alone shares 4.92% and in case of Udupi it is 2.41%. The landuse under parks, playgrounds and open space both cities together share 2.54% and while Mangalore city alone shares 2.96% and incase of Udupi city it is 2.13% (see table no. 6.2).

2. Class-II Towns: Karwar is the only one class II town in the coastal region of Karnataka with a population of 75020 as per 2001 census. This town has higher range of area under residential landuse i.e. ranging upto 64.18% of the developed area. The landuse under transport and communication is 21.89% in Karwar. While landuse under public and semi-public is 7.98%. The landuse under parks and playgrounds is 2.43% while under commercial use industrial use is hardly 1.91% and 1.61% respectively.

3. Class-III Towns: Three towns in the study area namely, Bhatkal, Kundapura and Kumta being class-III towns have on an average 65.20% land
under residential use. Transport and communication use shares 16.09 per cent of land, and it is followed by public and semi-public land use 9.27%, Industrial land use 3.89%, parks, play ground and open space 3.12% and the commercial use 3.00%.

Table 6.2 Mean Percentage of Area Under different Land-use to the Total Developed Area of the Size-class of towns (1991)

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Size class of towns</th>
<th>No of towns</th>
<th>Residential area</th>
<th>Commercial area</th>
<th>Industrial area</th>
<th>Public and semi-public area</th>
<th>Park, play ground and open spaces</th>
<th>Transport and communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Class-I &gt;1,00,000</td>
<td>2</td>
<td>60.24</td>
<td>3.66</td>
<td>7.20</td>
<td>7.35</td>
<td>2.54</td>
<td>18.99</td>
</tr>
<tr>
<td>2.</td>
<td>Class-II 50,000 to 1,00,000</td>
<td>1</td>
<td>64.18</td>
<td>1.91</td>
<td>1.61</td>
<td>7.98</td>
<td>2.43</td>
<td>21.89</td>
</tr>
<tr>
<td>3.</td>
<td>Class-III 20,000 to 50,000</td>
<td>3</td>
<td>65.20</td>
<td>3.00</td>
<td>3.89</td>
<td>9.27</td>
<td>3.12</td>
<td>16.09</td>
</tr>
<tr>
<td>4.</td>
<td>Class IV 10,000 to 20,000</td>
<td>6</td>
<td>66.51</td>
<td>3.71</td>
<td>1.79</td>
<td>4.76</td>
<td>4.59</td>
<td>18.64</td>
</tr>
<tr>
<td>5.</td>
<td>Class V 5000 to 10,000</td>
<td>3</td>
<td>68.98</td>
<td>1.01</td>
<td>13.27</td>
<td>2.91</td>
<td>1.27</td>
<td>12.48</td>
</tr>
<tr>
<td>Total Mean</td>
<td></td>
<td>17</td>
<td>65.02</td>
<td>2.66</td>
<td>5.55</td>
<td>6.45</td>
<td>2.79</td>
<td>88.09</td>
</tr>
</tbody>
</table>

* N.A.= data is non available.
4. **Class-IV Towns**: In this class, six towns (Baindur, Gangoli, Mulki, Saligram, Ankola and Honavar) have a very high proportion of land under residential use, where the mean percentage of land under residential use is 66.51. It is followed by 18.64 per cent under transport and communications, 4.76 per cent for public and semi-public, 4.59 per cent land for parks, play grounds and open spaces, 3.71 per cent for commercial use. However, in these towns very low percentage (1.79) of land is utilized for industrial purpose.

5. **Class-V Towns**: In this class, three towns (Mallar, Tonsewest and Binaga) have a very high proportion of land under residential use, where the mean percentage of land under residential use is 68.98. It is followed by 13.27 per cent under industrial activity, 12.48 per cent for transport and communication, 2.91 per cent for public and semi-public area, 1.27 per cent under park, play ground and open spaces and low percentage (1.1) of land is utilized for commercial activity.

6. **Class-VI Towns**: There were only two towns noticed in the study area i.e., Hosangady and Kadra K.P.C Project Colony, a notified area. These two towns were considered as a towns during 1991 census only and they are newly emerged project colonies. However, the land use data of these two towns is not available.

   In general, an analysis of the overall pattern of functional land use of towns in the study area shows that the residential use of the land is dominant in all class of towns.
Secondly transport and communication has higher share in all class of towns except class-V, but class-V towns have dominance by industrial area. The public and semi-public use of land is high in class-III, class-II and I towns. Remaining all land-use functions are low in all size of towns in coastal Karnataka.

MORPHOLOGICAL ANALYSIS OF SELECTED TOWNS

Physically and economically it is not possible to study in detail the land use pattern of all towns of the study region. Therefore, only four urban centers are chosen for studying the morphological characteristics of towns to represent two cities under class-I, one town for class-II and one town under class-III. The economic, social and technological forces have brought considerable changes in the size and function of towns, such a change is inevitable and all these are more essential for the prosperity of town life. If change is resisted and adjustment is not made from time to time then it will lead to stagnation of growth, obsolescence and decay of towns.

The inhabitants of urban centres will always shape and reshape their physical environment to suit their changing needs and this is not a new phenomenon. Towns and cities have to be continuously renewed and reorganized. The functional obsolescence has to be counteracted continuously and city should be made useful.

MANGALORE CITY

The major interest in the urban study of Mangalore city is it being the District Headquarters of Dakshina Kannada and being first ranking city in the Coastal Karnataka with a population of 5.38 lakh. The local planning area of
Mangalore city covers 45.43Sq. kms. area. The city has developed to its present stage after the construction of all weather port by the Government of India during 1974. The Mangalore port area is humming with activity of considerable economic significance and holds the promise of generating an atmosphere which would change the physical structure of the city as well as the region. The changing values of time have added a few more functions to this centre.

Mangalore (12° 27' to 13° 58' Northern latitude and 74° 35' to 75° 40' Eastern longitude) is today a fast growing city of modest size (538560 population in 2001).

The city of Mangalore is not only a primate city in coastal Karnataka but also a district headquarter as well as a centre of port activity, commercial hub, service centre, industrial centre and educational centre. In view of the rapid expansion, the city is experiencing change in environmental conditions and disintegrated physical development requires a thorough understanding of dynamics and spatial relationship that exists between urban and rural, and calls for correcting existing deficiencies and imbalances. Therefore there is an urgent need to make locational and spatial considerations as an integral part of economic decisions and thus give a much needed third dimension to development plans so as to increase the habitation.

Rapid increase in population due to industrial and other economic activities and consequent influx of population into the city of Mangalore has resulted in number of pocket developments without any relation to neighbouring areas, thus posing several planning and administrative problems.
The Mangalore city is known for marine fishing and the export of fish, as well as fish products. Fishing thus constitutes a major economic and characteristic feature of the Mangalore city.

The historical records prove that the Mangalore existed even before 2076 B.C. The city derives its name from and antique temple of 'MANGALADEVI' Goddess of luck. Mangalore, formerly known also as Mangalapura takes its name from Mangaladevi, a 10th century saint of the Nath-cult.

**Mangalore** is by far the most important historical city of the South Canara district. It finds mention in a 7th century inscription under the name Mangalapura and was a flourishing for centuries. The city enjoys the reputation of having had as many as four forts at different periods of its history: (i) the Mangalore Fort built by Basavappa Nayaka of Bednore (1740-1754 AD.) and dismantled by Tipu Sultan in 1741; AD. (ii) The St. Sebastan Fort built by the Portuguese in 1588 A.D. (iii) the Light-House Hill Fort and the (iv) the Banghel Fort near Urva, said to have been, built by a Banga chief and dismantled by Venkatappa Nayaka of Keladi. However, it is the ruins of the Mangalore Fort only that are even now extant. This fairly extensive fort consisting of an upper and lower fort was defended by six bastions and numerous towers. A tile factory now stands on the site of the St. Sebastian Fort and some of the ruins of the fort may be noticed on the sea shore near this factory. The places of interest in the Mangalore city include Sultans Battery, the Light-House hill, Mangaladevi temple, Manjunatha temple at Kadri hills, a
couple of imposing churches and mosques. The Sultan's battery is a complex structure, resembling a Fortress with its many apertures for mounting canons all around, built by Tipu Sultan to serve the purpose of a watch tower and to prevent entry of enemy warships into the Gurpur river. The Light-House hill, which is centrally located and has been developed into a park has a deserted light-house on its summit. As regards the Mangaladevi temple, it is said that the Ballalas of Attavara got the temple built to enshrine an idol of Shakti goddess which was installed by the famous Goraknath. This temple is said to be rebuilt by Kundavarma II, an Alupa ruler in 968 A.D. Structure is attributed to the Nayakas of Bednore. The Kadridevi is famous for its Manjunatha temple and a matha as well. An inscription on the pedestal of the bronze in this temple, dated in 968 A.D. states that the idol was installed in the Vihara of Kadarika by the Alupa Kudarvarma. This idol has three heads, six arms and is 150 cm. in height. The Buddha icon is 90 cm. high so also the icon of Manjushri is about 90 cm in height. In addition, the shrine has the images of various gurus of the Saka cult as Matsyendranath, Gorakhnath, Chouranginath etc., and the idols of Ganapati, Subrahmanys, Parvati, Shashta and Annapa Panjurli. The architecture of this place resembles of Nepal, the country where the Natha cult, which is to be an offshoot of Mahayana Buddhism, originated. The Church of the Most Holy Rosary at Bolar here, is one of the churches founded in the district in 1526 A.D. The present large and beautiful structure however was built in 1910 and boasts of a magnificent dome crowning the sanctuary. The theological seminary built in 1879 and noted for towers, the Shanti Cathedral
Balmatta built in 1862, the St. Anoydus College Church constructed in 1885, the Kanti church Jeppu and the Vishranti Church, Bockapatna are the Christian institutions. The Jumma Masjid Zeenath Shakti situated in the Bunder area is believed to have been built several centuries ago by the early Arabians, who landed on the west coast under the leadership of Saint Malik Dessar. The structure assumed its present form during the period of Tipu Sultan. The Idgah mosque on the light house is also ascribed to Tipu Sultan. Shamir mosque with a dargah attached to it is the other notable place of worship for the Muslims. The Suratkal beach and the New Mangalore port are the nearby places of tourist interests. The community wise break up (OBE) population in Mangalore city is Muslim (14%), Christian (8%), Scheduled Caste (9%), Scheduled Tribe (6%), Edigas (18%), Bunts (12%), Brahmins (8%) and Vokkaligas (7%) of the scheduled castes, Adi Karnatakas (3%) are most numerous, Naiks and Yeravas are the common scheduled tribes.

Mangalore otherwise locally known as 'Kodial Bundar' is the headquarters of the district and is situated on the backwaters formed by the convergent mouths of the Netravati and Gurpur rivers; consequently, it has waters on the south and west sides. It is 363 kms, west of Bangalore and 596 kms west of Madras as the crow flies (896 kms by rail from Madras) and 673 kms south of Bombay. The city has roughly the shape of a triangle with apex towards the south. The Netravati and Gurpur rivers, which form the southern and the western boundaries of the city for a total distance of about 8 kms., are navigable for some distance from their mouths.
The 1971 census has included the Derebail, Kankanady, Someshwar and Ullal towns in the Mangalore Urban Agglomeration. It is delightful place and is sufficiently undulating and has groves arecanut and coconut palms and other trees. The rivers on west and south, the expensive agricultural belt on the south-east and the low hills with valleys between the north and north-east, are the main features of the surrounding area. The views over the town from adjacent high points are comparable with those generally associated with hill stations. Though the general slope of the town is westward, there are hills and undulations in all directions and the heavy monsoon rainfall is easily drained off in a very short time.

Name of the city -Mangalore figures as Mandegora, Maganur and Mangarouth in the works of Arrian, Ptolemy and in Kosmos Indiko-pleustes, respectively. Nitrias, perhaps meaning Netravati but used as a place-name by Pliny (first century A.D.) is also supposed to refer to Mangalore. It is popularly believed that the name of Mangalore is derived from the Mangaladevi temple. This temple, in its turn, is said to have received its name from a queen named Mangaladevi who, according to a tradition, lived in the 10th century and became a follower of the Natha Pantha. But may be factually the other way round, and probably the name of the place was given to ‘the goddess of this temple. The Maraturu copper-plate inscription of about the 7th century mentions this place as Mangalapura and since ‘Mangala’ means also a

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13 Dr. Gururaja Bhat, P. A. Monograph of Shri. Durgaparameshwari Temple, Mandarthi.
fort Dr. Gururaja Bhat has inferred that this place, which was important from political and military points of view, might have acquired this name.\(^{15}\)

In 1342, Mangalore was visited by Ibn Batuta, who has stated that there were merchants of Parsia and Yemen in the area at the time. In 1448, Abdur-Razzak, an ambassador from Persia, landed at Mangalore on his way to Vijayanagara. He saw at distance of 12 miles from Mangalore a large temple. In 1498, Vasco da Gama landed on one of the islands off the coast of Udupi. In 1505, the Portuguese were given permission by the then Vijayanagara king to build a fort near the mouth of the river. In 1514, the Portuguese traveller Duarte Barbosa visited the west coast, and found Mangalore a large town peopled by ‘Moors and Gentiles.’ In 1526, Mangalore was taken over by the Portuguese who levied a tribute on it. In 1547, they desolated the city which was rebuilt in 1555. Later it was again burnt by them.

There were several treaties between the Portuguese and the Bidanur(Ikkeri) Nayakas and under one of these, the Portuguese were allowed to build a factory in Mangalore in 1670. In 1695, the town was burnt by the Arabs in retaliation for the restrictions imposed by the Portuguese on the Arab trade. Early in the eighteenth century, The Portuguese were expelled by the Nayakas of Bidanur, but were again allowed to construct factory here in 1714. In 1763, Haidar Ali took Mangalore where he built dock-yards and an arsenal. The town was captured by the English in 1768 but was abandoned shortly thereafter. They captured it again in 1791 and Tipu Sultan took it back in 1794.

\(^{15}\) Ibid.
and the fort was demolished by the order of Tipu. Finally, after the fall of Srirangapatna in 1799, Mangalore came into the hands of the British. In 1801, Francis Buchanan visited the town. During the Coorg Insurrection in 1837, the rebels entered the town, opened the jail and burnt down the British Government offices. However, this was soon suppressed.

The Forts - There are said to have existed a different periods, four forts within the limits of the present Mangalore City. They were: (i) the Mangalore Fort, built by Basavappa Nayaka of Bidanur (Ikkeri) (1740-54) and dismantled by Tipu Sultan in about 1784; (ii) the St. Sebastian Fort, built by the Portuguese in 1568; (iii) the Light—House, Hill Fort, the existence of which is only a matter of conjecture based on some old documents, and (iv) the Banghel or Bangar Fort near Urva, said to have been built by a Banga chief and dismantled by Venkatappa Nayaka of Ikkeri was already in ruins by about 1623 when Della Valle visited the place. Of these, the remains of only the first two can be seen to-day. The Mangalore Fort was fairly extensive, consisting of an upper and a lower fort, the latter being larger. The walls were defended by six bastions and a number of towers. A section of the moat, on the western part of the hill, still exists. On the site of the St. Sebastian Fort stands now a tile factory; however, some ruins may be seen on the seashore near the factory.

The Sultan's Battery - This is a watch-tower said to have been built by Tipu Sultan to help prevent the entrance of warships into the Gurpur river. It has a complex construction and though it was meant to be a simple watchtower, it gives the impression to the onlookers of a miniature fortress with its many apertures for mounting canons all round.
The Light House Hill – In the centre of the town is a hill called the ‘Bavata Gudda’ meaning the flag hill. On the top of the hill is a deserted light-house facing the sea. Around the old light house, there is a park maintained by the Municipality.

A new-light house was built in 1900. It carries an acetylene light, 33 feet above high tide, giving flashes every three seconds visible for about 17 kms. Out at sea in clear weather. The masonry tower is 48 feet high from the base and is painted white. The flag-staff consisting of lower and top masts is 91 feet from the ground-level and stands near the port office.

Mangaladevi Temple – The origin of the temple of Mangaladevi is not definitely known. The Ballalas of Attavara are said to have constructed a temple and enshrined it with an image of Shakti which was inaugurated by Gorakhanath, a disciple of Matsyendranath, some time in the early years of the tenth century A.D. This temple is said have been re-built by Kuadavarma-II, an Alupa ruler, in 968. The present temple is believed to have been constructed by one of the Nayakas of Bidanur (Ikkeri).

Besides the Mangaladevi temple, the other important temples in the city are those of Ganapati, Venkataramana, Kalikamba, Vinayaka, Gokarananatha, Mukhyaprapna, Lakshmi Narayana, Mahammayi, Dattaterya, Uma-Maheshwara, Gopalakrishna, Triliukshwara, Sharabeshwara, and Panchalingeshwara. There is a Chandranatha Basadi and there are Krishna Matha, Kanthrayani Matha and Gokarnanath Matha (Monasteries).
Kadri: The Kadri hill is famous for the Manjunatha temple and matha of the Jogis. A Swami resides in the matha. The Jogis follow the Natha Sampradaya, which had become prominent under Matsyendranath and Gorakhanath, both of whom are said to have visited this place. There are nine tanks which get natural spring water and several stone caves here which are known as the caves of the Pandavas. The spot, with its beautiful surroundings and plentiful water supply, attracted the notice of the Natha Yogi, by its solitude and isolation. The temple is said to have been built by Matsyendranath and his followers.

A Sanskrit inscription in grantha characters on the pedestal of the bronze image of Lokeshvara in the Manjunatha temple here dated in the year 968 AD., states that the icon was installed in the beautiful Vihara of Kadarika by the Alupa King Kundavarman. This is a fine and highly impressive statue. It has three heads and six arms and is about 150 cms. in height. Another bronze image, that of the Buddha, who is shown in the dhyana posture, is 90 cms. in height. On the panipeetha of this Buddha image there are three- small relief figures of Garuda. A third bronze image, which appears to be of Manjushri or Manjunatha, is about 90 cms. in height. There is a relief figure of the Buddha on the crown of this icon. Both these bronze statues also seem to be of about the tenth century. In addition to having images of the various Natha gurus, (Matsyendranath, Gorakhanath, Chouranginath and Shrunginath), the temple has also idols of Ganapathi, Subrahmany, Parvati and Shastar and also, of Annappa Panjurli of the Bhoota cult. There are also some fine ornamental
lamp-stands. The architecture of this place resembles the Nepalese architecture. It may be said here in passing that the Natha cult, believed to be an off-shoot of the Mahayana Buddhism, originated from the Nepal region. Della Valle, the distinguished Italian traveller, who visited the places round about 1623, has left a vivid description of the temple and the Jogis. He says, that the hill and its caves were the only objects that deserved notice of the travellers.

Churches—There are some massive and imposing Christian monuments. However, the existing ones are only about or less than a century old. The St. Joseph's Theological Seminary of Mangalore was built in January 1879 by Rev. Fr. Augustus Diamanti “who was its architect, engineer and supervisor”. The huge, grey, weather-beaten towers of the Seminary church are pronounced to be the most artistic in South Kanara. They flank on either side like an eagle with outstretched wings soaring aloft. The Seminary provided ample room for the students who lived here and were trained here for the priesthood. A substantial addition was made in 1914 with a new wing on the western side and a parallel wing was added in 1927. In 1934, yet another wing was erected in between the two. The central wing was extended and its structure is unique in form and has a reputation in South India. (Incidentally, it may be mentioned here that students drawn from as many as 19 dioceses of India are being trained here.)

The Church of the Most Holy Rosary at Bolar is one of the three oldest Churches founded in South Kanara in 1526. The present large and beautiful structure of this Church, “which is worthy of the dignity of a cathedral”, was
built in 1910. Br. Divo of the Bombay Mission was its architect. Rev. Fr. Buzzoni, the then parish priest, put up a belfry and installed four sonorous bells brought from Italy. This is the only church in the diocese which can boast of a magnificent dome crowning the spacious sanctuary. The cross on the dome lit every night serves as a beacon to the sea-farers.

The St. Aloysius College Church was constructed in 1885 by Rev. Fr. Joseph Willy. It is designed on the architectural style and pattern of the Orator of St. Philip Neri in Rome. It has a marvelous gallery of paintings done by Br. Anthony Moschemi 1902 to 1904. He had come from Italy in 1889. A number of scriptural episodes are powerfully drawn here and there is a panorama of the Biblical history from the creation of man to the resurrection of Christ. Besides the extensive murals on the walls, there are large canvas-paintings on the ceilings, loft, etc. He had attained and amazing degree excellence both in the fresco technique and in the medium of oil colours. There are several master-pieces of this accomplished artist here such as the birth of Christ, baptism of Christ by John the Baptist, Christ with children, wedding feast at Cana, last supper which are highly fascinating and leave a lasting impression on the visitor’s mind. This brilliant artist with a vision did more religious paintings in Bombay and Cochin also.

The Shanti Cathedral, Balmatta, which is a huge structure, was built in 1862 on the model of the Mission house in Basel (Switzerland) and it was renovated in 1962; besides this, the Kanti Church, Jeppu, and Vishranti Church, Bockapatna, are the other important Protestant churches here which have impressive structures.
Mosques - The Jumma Masjid Zeenath Baksh situated in the Bunder area is a notable mosque. It is said to have been originally built several centuries back by early Arabian visitors who had landed on the west coast under the leadership of a saint named Malik Deenar. The mosque must have undergone several structural alterations in course of subsequent centuries. It is stated that this place of worship was given present form at the instance of Tipu Sultan towards end of the eighteenth century. The wooden pillars, pulpit, etc., in this mosque have exquisite and delicate ornamental carvings which are worth-seeing.

The Idgah Mosque on the Light-House Hill near the St. Aloysius College is a quadrangular structure where the Muslims of Mangalore offer the Idgah prayers after a mass procession which begins from the Jumma Masjid, Bunder. The Idgah Mosque is said to have been got constructed by Tipu Sultan towards the close of the eighteenth century. The Shamir Mosque in Dongarakery, which appears to be two centuries old, has a dargha attached to it. Where the mortal remains of saint Shah Amir lay buried.

In many of the old parts of the city, the general layout of roads and streets does not follow any regular or conscious planning, but is only network of separately laid out irregular roads which had Slowly evolved from slipshod building operations. In certain localities of the town, however, the planning of the streets is done on rectangular lines, particularly in the central wards of the city. The Sea Front, the Car Street, The Bazaar street, the Ganapati Temple Street, etc; are examples of orderly built streets. A master plan for development of Mangalore is being prepared.
The main centres of public recreation are the Central Maidan, the Urva Maidan and the reclaimed river frontage near the port. The first mentioned place is largely resorted to, as it lies in the heart of the city. It is surrounded on all sides by broad avenue roads. The Urva Maidan is within easy reach of the people living in the Kodialbail area. The chief beauty spot in the town is the Court Hill, to which place people resort for open air. The hill provides an exquisite view of the city and the backwater. Other recreation centres in the town are the Police Parade Grounds, Mangalore Club Grounds, Ladies Recreation Club in the Court Hill, etc., and the many playgrounds attached to schools and colleges.

Mangalore is connected by with Bombay, Bangalore, and Panaji. The broad-guage system of the Southern Railway also has its terminus here, starting from Madras and passing through Kerala. The new Hassan—Mangalore Railway line, passess through Mangalore to Panambur. Water communication also is available between Mangalore and Panambur. Mangalore (28 kms.) and between Mangalore and Gurupur (12 kms).

Mangalore, which has been a large commercial and trading centre, is now becoming also a vast industrial city. It has made excellent progress in respect of education also. Women's education has been exceptionally rapid in this city, and also in the district, the reasons probably being the matriarchal type of society that has been largely prevalent for a long time, the early impact of Western thought and life on this part of the west coast and the influence of some women social reformers of the city (and of the district) were among the
first to break the traditional barriers, to receive higher education, to go to foreign countries and to contest election. From the founding of the St. Ann’s School in 1870 and the Canara Girls’ School 1894 to the establishment of the Institute of Social Work, female education has made rapid progress. The Besant National Girls’ High School, Kodialbail, has been hall-mark, not only for being the nucleus of national education but also for its pioneering zeal in furthering woman’s education.

Various associations like the Headmasters’ Association, the South Kanara Teachers’ Guild, the Football Federation, the Canara Cricket Association, the District Inter-School Athletic Association, etc., have also their headquarters here. Most of the educational institutions are run by private agencies by voluntary efforts and this may be said to be indicative of the vision and enterprising spirit of the people. There are a good number of social service institutions in the city.

The district came under the rule of the Bangaras, who rose to prominence as the feudatories of the Hoysalas. Vira Narasimha I of the Hoysalas (1152-73) conferred on the Bangara prince, 15 maganes or group of villages, including Mangalore. This prince came to be later known as Vira Narasimha Banga Raja, after the benefactor. Later on with the decline of the Hoysala supremacy the local chiefs became practically independent until the Vijayangar empire made its power felt in this region. By this time Mangalore had established trade contacts as far as China in the east and the Persian Gulf in the west. Ibn Batuta, the African traveler visiting Mangalore in 1342 found it prosperous.
During the Vijayanagar period, a viceroy was placed at Mangalore. There was also a fleet under an admiral called Navigada Prabhu. It was during the reign of Narasimha II (1491-1505) that the Portuguese made their first settlements on the west-coast. A couple of decades later, the Portuguese viceroy Lopaz-de-Sampayo with a view to destroying the Arab and Moplah trade in the coast attacked and defeated the Bangara ruler and took possession of Mangalore. From then on, the Fransiscan Friars began preaching in Mangalore and its neighbourhood. The Portuguese adventurism was, however, resisted by local chiefts, especially the queens of Ullala. In 1555 the city of Mangalore was nearly lost to the queen of Ullala when the Portuguese admiral set sail with a fleet 21 ships. The Zamorin of Calicut intervened and negotiated a treaty between the queen and the admiral. But in 1558 the Portuguese again attacked the queen and reduced Mangalore to ashes. In 1566 the queen ceased to pay tributes to the Portuguese and thus invited a final attack in 1568. The defeated queen fled to the mountains. By the middle of the 17th century the Portuguese power declined in the Kanara coast.

The city of Mangalore followed a programme of urban renewal continuously from 1950 onwards. The present conditions of the city are the result of sustained efforts to change and renew the city from time to time and make it “Better city” by pursuing a continuous policy of urban planning, development and redevelopment. Urban renewal being a ‘new slogan’ now, has been followed and practiced vigorously in Mangalore city by the planners, engineers and administrators since 1950.
UNIVERSITY AND COLLEGES IN MANGALORE CITY:

❖ Mangalore University, University campus, Mangalagangothri, Konaje, Mangalore.
❖ University College Mangalore,
❖ A B Shetty Memorial College of Dental Science, Mangalore.
❖ Besant Evening College, Mangalore.
❖ Besant Women's College, Mangalore.
❖ Badriya College, Mangalore.
❖ Canara College, Mangalore.
❖ City College of Physiotherapy, Kadri, Mangalore.
❖ Kurunji Venkatramana Gowda Dental College, Kurunji Venkataramana Law College, Sullia Laxmi Memorial College of Physiotheraphy, Balamatta, Mangalore.
❖ Institute of Nursing Sciences, Mangalore.
❖ Institute of Professional Sciences and Management, Mangalore.
❖ Government College of Education, Mangalore.
❖ Fr Muller’s Homoeopathic Medical College, Mangalore.
❖ Fr Muller’s Institute of Medical Education and Research, Mangalore.
❖ Fr Muller’s College of Nursing, Mangalore.
❖ Dharmasthala Manjunatheshwara College of BBM, Mangalore.
❖ Nitte Gulabi Shetty Memorial College a Pharmacy, Mangalore.
❖ Nitte Mahalinga Adyantha Memorial Institute of Technology, Nitte, Mangalare.
❖ Moegling Institute of German Language, Mangalore.
❖ Moti Mahal College of Hotel Management, Mangalore.
❖ School of Social Work. Roshini Nilaya, Mangalore.
❖ Sri Bhuvanendra College, Sri Dharmasthala Manjunatheshwara Law College, Mangalore.
❖ Srinivasa College of Hotel Management, Mangalore.
❖ Srinivas College of Physiotherapy, Mangalore.
❖ Sri Gokarnanatheshwara College, Mangalore.
❖ St Agnes College, Mangalore.
❖ St. Aloysius College, Mangalore.
❖ St. Aloysius Evening College, Mangalore.
❖ Saptagiri College of Hotel Management, Mangalore.
❖ St. Ann's College of Education, Mangalore.
❖ Srinivas College of Physsiotherapy, GHS Road, Mangalore.
❖ Sarosh Institute of Hotel Management, Pantagon Complex, Kankanady, Mangalore.
❖ Sri Narayana Guru College, Kudroli, Mangalore.
❖ Sri Venkatramana Swamy Womens College, Mangalore.
❖ Sri Devi College pf Hotel Management, Punja Building, Lalbagh, Mangalore.
❖ College of Dental Surgery, Mangalore.
❖ Kasturba Medical College, Mangalore.
❖ Fisheries College, Mangalore.
❖ Yenepoya Dental College, Mangalore.
Table 6.3 Growth of Population of Mangalore City

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>Decadal percentage of population growth</th>
</tr>
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<tbody>
<tr>
<td>1961</td>
<td>170,253</td>
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<tr>
<td>1971</td>
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<td>1981</td>
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<tr>
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<td>27.88</td>
</tr>
<tr>
<td>2031*</td>
<td>11,43,219</td>
<td>23.67</td>
</tr>
</tbody>
</table>

* Projected population.

In 1961-71 the percentage growth of population was 26.35 per cent, while in subsequent decades (1971-81) it was 42.28 per cent. But in 1981-91 decade the growth rate was less (39.29%). In subsequent year (1991-2001) it reduced to 26.32 per cent. (See Table No. 6.3).

According to estimated population (by incremental increase method) the future population size of Manglore city will be 7,22,877 persons by 2011, showing a growth rate of 34.22 per cent. By 2031 A.D. the population of Manglore city will reach to 11,43,219. If we compare this population to the present population size it is more than two times.
OCCUPATIONAL STRUCTURE OF MANGLORE CITY:

As per 1991 census in Mangalore city totally 1,72,257 persons are engaged in various activities which is 40.39 per cent of the total population (4,26,341). Out of the total work force 38.61 per cent are in other than household industrial activity and 19.23 per cent of workers are in trade and commerce. It is followed by other services (19.00%) transport, storage and communication (8.80%), construction (6.57%), livestock, forestry, fishing etc activities (3.16%) and cultivators (2.24%). The remaining three activities (agricultural labourers, household industries and mining and quarrying) contribute very lesser percentage (1.59) of workers. As per 1991 census, out of total population 40.39% are workers and remaining 60% are non workers in Mangalore city. The growth and economic base of Manglore city is directly depended on other than household industries, trade and commerce and other services. These are the functional specialization of a city according to the Webb’s classification. In future if the population growth of the city continues at present rate of growth, it may aggravate the conditions in the city (See Table No.6.4).
### Table No.6. 4. Occupational Structure of Manglore City (1991)

<table>
<thead>
<tr>
<th>Classification number</th>
<th>Population</th>
<th>Percentage to total Work Force</th>
<th>Percentage to total Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Cultivators</td>
<td>3860</td>
<td>2.24</td>
</tr>
<tr>
<td>II</td>
<td>Agricultural Labourers</td>
<td>2741</td>
<td>1.51</td>
</tr>
<tr>
<td>III</td>
<td>Livestock, forestry, fishing, hunting, plantation, orchards and allied activities</td>
<td>5451</td>
<td>3.16</td>
</tr>
<tr>
<td>IV</td>
<td>Mining and quarrying</td>
<td>664</td>
<td>0.38</td>
</tr>
<tr>
<td>V</td>
<td>a) Household industries (Manufacturing, servicing and repairs)</td>
<td>697</td>
<td>0.40</td>
</tr>
<tr>
<td></td>
<td>b) Other than household industries (Manufacturing, servicing and repairs)</td>
<td>66515</td>
<td>38.61</td>
</tr>
<tr>
<td>VI</td>
<td>Construction</td>
<td>11322</td>
<td>6.57</td>
</tr>
<tr>
<td>VII</td>
<td>Trade and Commerce</td>
<td>33119</td>
<td>19.23</td>
</tr>
<tr>
<td>VIII</td>
<td>Transport, storage and communication</td>
<td>15166</td>
<td>8.80</td>
</tr>
<tr>
<td>IX</td>
<td>Other services</td>
<td>32722</td>
<td>19.00</td>
</tr>
<tr>
<td></td>
<td>Total work force</td>
<td>1,72,257</td>
<td>100.00</td>
</tr>
<tr>
<td></td>
<td>Marginal workers</td>
<td>3,564</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-workers</td>
<td>2,50,520</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Population of Manglore city</td>
<td>4,26,341</td>
<td></td>
</tr>
</tbody>
</table>
EXISTING LAND USE OF MANGLORE CITY:

The area under the jurisdiction of Manglore city municipality is 21050.00 hectares. Out of these 6909.10 hectares of land is developed (32.82%). The remaining 67.18 per cent of area is occupied by agriculture, water sheet and vacant land. The following table gives the break up of land use in the entire city (See Table No.6.5 and Fig. No. 6.4).

1. **Residential Use**: In the Manglore city, it is noticed that the residential use covers 3425.73 hectares constituting 49.74% of the developed area. The total developed area works out to 6909.10 hectares or 69.09 Sq.kms. Mixed land uses are found not only in the city district area, but also in other parts of this city like Ullas area, Surathkal area and eastern parts of the local planning Area. The village settlements and other areas are scattered in the local planning Area. There is no definite beginning and end of these settlements. Practically it is observed from the available revenue maps there is no land fully vacant for development. This phenomenon requires careful analysis and a desirable concept of planning. Nearly 60% of the residential area is with scattered houses and are connected by small lanes and foot paths. The community has big tendency to construct their houses reserving sufficient land for plantation purposes.
### Table 6.5 Existing land-use of Manglore City (1991)

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Land-use Classification</th>
<th>Area (in hectares)</th>
<th>Percentage to the total Developed area</th>
<th>Percentage to the total municipal area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Residential</td>
<td>3425.59</td>
<td>49.58</td>
<td>16.27</td>
</tr>
<tr>
<td>2.</td>
<td>Commercial</td>
<td>340.18</td>
<td>4.92</td>
<td>1.61</td>
</tr>
<tr>
<td>3.</td>
<td>Industrial</td>
<td>846.55</td>
<td>12.25</td>
<td>4.03</td>
</tr>
<tr>
<td>5.</td>
<td>Parks, play grounds and open spaces</td>
<td>204.26</td>
<td>2.96</td>
<td>0.97</td>
</tr>
<tr>
<td>6.</td>
<td>Transport and communication</td>
<td>1438.60</td>
<td>20.82</td>
<td>6.83</td>
</tr>
<tr>
<td></td>
<td>Total developed area</td>
<td>6909.10</td>
<td>100.00</td>
<td>32.82</td>
</tr>
<tr>
<td>7.</td>
<td>Vacant and water covered area</td>
<td>7728.90</td>
<td></td>
<td>36.72</td>
</tr>
<tr>
<td>8.</td>
<td>Agricultural use</td>
<td>6412.00</td>
<td></td>
<td>30.46</td>
</tr>
<tr>
<td></td>
<td>Total Mangalore city Municipal area</td>
<td>21050.00</td>
<td></td>
<td>100.00</td>
</tr>
</tbody>
</table>

2. **Commercial Use**: Hampankatta and old Bunder areas account for major share of commercial activity. This area serves as C.B.D. for Mangalore. Since all the arterial roads are radiating from here, it is too much congested and movement of people and vehicles is becoming difficult and risky. Unless decentralization of some of Central Business District activities is taken up, the problem may go beyond control.
Commercial use covers 340.18 hectares constituting 4.89% of the Developed Area. Commercial uses are concentrated in the City Planning District Area, Kankanady Area, M.G. Road, Balmatta Road, K.S. Rao Road, Falnir Road, at the junction of the Surathkal Municipal Market, at the junction of Ullal Main Road and the connecting road from N.H. 17. Shopping areas are also seen all along the main traffic roads and at important interior sections. In the other areas commercial activities are of less concentration and are of disorganised nature in respect of locations.

3. Industrial Use: Industrial use covers 846.55 hectares constituting 12.25% of the developed area. The major working centres are M.C.F., N.M.P.T., KIOCL, Bikampady on the northern part of the Local Planning Area. Some old industries like Tile Factories, Cashew Processing, Coffee Curing etc., are prevailing in the city area. Most of the Tile Factories are located along the bank of Gurpur and Nethravathi Rivers which has created pollution problems.

4. Public and Semi Public: Being a district headquarters, Manglore city has to perform a considerable number of administrative services. The land used by archaeological monuments, religious places, public offices, educational institutions, public utility places etc., are considered as public and semi public uses. Public and semi-public uses cover 653.92 hectares constituting 9.47% of the developed area. Public and semi-public uses are concentrated around Nehru Maidan and Hampankatta. Mangalore University is located beyond the local planning Area. It is seen there as a big trend of
developments along the road starting from N.H. 17 near Kotekar connecting Konaje area, the Nursing Homes, Health Clinics and other parts of the city. Public utilities are mostly the area covered under garbage disposal, sewage treatment plant and water purifying installation.

5. Parks, Play Grounds and Open Spaces use: Parks and open spaces cover 204.26 hectares constituting 2.96% of the developed area. The major open spaces are Deer Park, Padil Park, Tagore Park and Mangala Stadium. Smaller parks are existing in the other parts of the city. There is a necessity for forming a regional park for the benefit of the people living in different parts of the city and beyond. One such area to be developed as major recreational area is identified at Padu Shedde covering an extent of 65.70 hectares. Since the entire area is covered with shrubs and plants there is no necessity of incidental open spaces as it amounts to heavy cost maintenance.

6. Transport and Communication: Areas under traffic and transportation occupy 1438.60 hectares constituting 20.82% of the developed area in Mangalore city. This includes the area occupied by the railway station, bus station, etc. It is strongly felt that there is need for the construction of semi-circular suburb mass transportation system and development of proposed by-pass road to relieve congestion of traffic in the central parts of the city. In future Manglore city will be a distinction of being development on a grand scale into a planned city and a centre of tourists attraction.
UREN LAND-USE MODELS


Fig. No. 6.9

'WORK-HOME' CONCEPT OF URBAN LAND USE

Fig. No. 6.9
Non-developed Area: The area under this category covered about 67.18 per cent to the total municipal area. Particularly the area under vacant land and water sheet covers 7728.90 hectares and agricultural land is covered with 6412.00 hectares of Municipal area.

There are vast areas under this use within the city and conurbation area. In a way these areas which are connected with sparsely developed areas act as lung space and in some cases they form as barriers segregating the developed areas on either side of such large agricultural uses.

The arrangement of urban land-use can be understood by studying Figure No.6.9, which resembles somewhat like multiple nuclei theory.

UDUPI:

Udupi is the city and it is a second ranking urban centre in coastal Karnataka. Udupi is also the taluk headquarter for Udupi taluk and comes under Coondapur Revenue Sub-division of the South Kanara District. Udupi is situated at latitude of 13° 21' North and longitude of 74° 45' East and 58 K.M. North of Mangalore city. It is at an altitude of 21 metres above mean sea level. The west coast national highway is passing through Udupi. It is surrounded by Coondapur taluk in the north, Karkala taluk to the east, Mangalore taluk to the South and Arabian sea to the west. The entire Udupi city planning area is characterized by undulating topography with forest here and there.
Udupi is amongst the most prominent place of pilgrimage in the country and is famous for its temple enshrining Lord Krishna. The town takes its name from Udupa, the moon associated with the establishment of the ancient Chandramouleshvara temple here. The celebrated saints such as Chaitanya, Purandaradasa and Kanakadasa are known to have visited this place to have the darshan of Lord Krishna.

The importance of Udupi city dates back from the times of Madhwa, the propounder of the Dwaita philosophy (13th century). According to tradition, using his miraculous powers, Madhwa saved a ship that was about to be wrecked on the rough sea and obtained therefrom the idol of Lord Krishna which he soon installed in a temple built for the purpose. The central shrine stands on a stone-paved platform, by the side of a tank called Madhwa-sarovara. The Acharya established 8 mathas and all these have their headquarters in the temple square of Udupi city. The Laksha deepotsava celebrated here during the month of Kartika is a major attraction. So also, Paryaya which comes off during the third week of January, every alternate year is an important event in this temple too. The ancient Ananteshvara temple here is a large structure and in front of its main entrance there is a beautiful monolithic pillar. Udyavara which is an important historical centre of the district is quite nearby. This was the capital of the Alupas, from about the eighth century and contains several relics of the past, including stone pillars bearing inscriptions in Kannada. The Shambukallu Bhairava temple which stands on a large boulder and contains ten pillars deserves a special mention. The temples dedicated to
Ganapati, Skanda, and Bommeshvara are the other interesting monuments. As already mentioned, the port town of Malpe is more or less contiguous with Udupi. So also, the township of Manipal, which is of late emerging as one of the prominent Industrial, commercial and educational centres of the coastal region is located in the outskirts of Udupi city.

**Udupi** 58 kms. north of Mangalore is the head-quarters of the same name. Udupi is considered to be one of the most sacred spots in the county and the temple of Lord Krishna is visited by pilgrims from all over India. The name Udupi is said to have been derived from Udupa meaning the moon and connected with the establishment of the Chadramoluishvara temple. It was also known as Rajatapeetha and Shivalli. The celebrated saints like Chaitanya, Purandaradasa, and Kanakadasa had visited this temple in the past. At the Krishna temple, there is what is known as “Kanakana Kindi”, the legendary hole through which the deity is said to have given darshan to Kanakadasa (16th century) by turning from east to west towards him who was standing outside. The importance of this place dates from the time of Madhvacharya who founded the temple and set up in it an image of Lord Krishna said to have been obtained from a vessel about to be wrecked on the coast but rescued by the great Acharya.

Of the eight mathas founded by the Acharya, four are in Udupi taluk. All the mathas have their headquarters in the temple square at Udupi and their heads reside there at least for some portion of the year. The temple of Lord Krishna is situated in the centre of the town. The few inscriptions in the temple
relate to the time of Vijayanagara. The names of the eight mathas established by the Acharya are Kaniyuru, Pejawara, Adamaru, Palimaru, Krishnapura, Puttige, Sode and Siruru and the different idols presented by Madhvacarya to these mathas are Narasimha, Vitthala, Chaturbhuja Kaliyamardana Krishna, Rama, Krishna, and Bhuvahara respectively.

The central shrine in the temple stands on a stone-paved courtyard, surrounded by lofty modern buildings. There is a picturesque stone, built tank called Madhwa-Sarovara, with a pretty little stone mantapa in the centre, round which the utsava image of Krishna is taken on a float during festivals. The outer buildings include a large kitchen, spacious dining halls, a store room and a goshala (cowshed) and also a cemetery for the Swamis of the mathas who die here. The Brahmin pilgrims are fed in the temple and also the students studying in the Sanskrita college in the town. Within the temple premises are also a Nagalaya or Subramanya temple and an auditorium called Vasantha Mahal.

An elaborate system of Poojas is followed every day, beginning early in the morning and closing late at night. Several festivals are observed here with great pomp all the year round. Devotees can be seen pouring in at this place throughout the year. But the most spectacular occasion in the Udupi temple is what is called ‘Paryaya’, falling about the third week of January of every even year of the Christian era, when one of the eight Swamis hands over the charge of administration to another in rotation. To the west of the Krishna temple is the ancient Antheshwara temple, with a tall monolithic pillar in front. To the east is the Chandramoulishwara temple.
Udupi is now a centre of many educational institution such as the Mahatma Gandhi Memorial College, Shri Purnaprajna College, Shir Purnaprajna Sandhya College, Udupi Law College, Ayurveda College, Seven high schools, a teacher training college for women, etc. It has also a Divisional Office of the Life Insurance Corporation of India. It is the headquarters of the Corporation Bank Ltd.

Udupi town exerts a dominant effect over the area in Udupi taluk and over a number of small settlements. Though the area of Udupi Municipal city is only 9.71 sq. Km the urban spread which has been accelerating since 1961 has invariably encroached upon the agricultural fields outside the city.

The peri urban area over it exerts urban influence extends to about 80 sq. km. The Malpe, Shivalli, Udyavara, Kalyanapur, Kemmannu are the important places around Udupi. These places have experienced an unprecendented boost in their economic activities and these places have been closely integrated with Udupi for a long time. The establishment of the colleges, Banks and the city transport are mainly responsible for this integration. The fishing harbour and the proposed Konkan railway line will further add to the growth of Greater Udupi. It is most appropriate and in the fitness of things that all the adjoining areas in the outskirt of the existing Udupi Municipal area are to be included within the Udupi Municipality. The Municipal Council has also passed a resolution in this regard requesting the Government to extend the Municipal limits upto Parkaln in the East, Malpe in the West, Kalyanapur in the North and Udyavara in the South. The proposal of forming Greater Udupi needs to be considered early.
POPULATION GROWTH OF UDUPI URBAN CENTRE:

The decadal growth of population of Udupi town shown in Table No.6.6, reveals that during 1961-71 the growth of population was 20.90% and in next decade (1971-81) growth rate was slow (12.30%) because of some natural epidemics. In the subsequent decade (1981-1991) the population growth was enormously increased at the rate of 252.18 per cent because of Udupi town became a separate district headquarter as a new district consequently. Some other towns were also agglomerated. During 1991-2001 the growth of population was (7.98%) slow compared to previous year.

Table 6.6 Growth of Population of Udupi Urban Centre

<table>
<thead>
<tr>
<th>Years</th>
<th>Population</th>
<th>Decadal Percentage Growth of Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1961</td>
<td>24,610</td>
<td>-</td>
</tr>
<tr>
<td>1971</td>
<td>29,753</td>
<td>20.90</td>
</tr>
<tr>
<td>1981</td>
<td>33,413</td>
<td>12.30</td>
</tr>
<tr>
<td>1991</td>
<td>1,17,674</td>
<td>252.18</td>
</tr>
<tr>
<td>2001</td>
<td>1,27,060</td>
<td>7.98</td>
</tr>
<tr>
<td>2011*</td>
<td>1,91,913</td>
<td>51.04</td>
</tr>
<tr>
<td>2021*</td>
<td>2,96,006</td>
<td>54.24</td>
</tr>
<tr>
<td>2031*</td>
<td>4,39,339</td>
<td>48.42</td>
</tr>
</tbody>
</table>

* Projected population.
Considering the Udupi town’s potential economic growth and development, the population projection calculated as per incremental increase method reveals that by 2011 A.D. the population of Udupi town will reach to 1,91,913 persons. Whereas by 2031 A.D. it will grow up to 4,39,339 persons, which will be almost more than three times of the present population size (1,27,060 according to 2001 census).

Table 6.7. Occupational Structure of Udupi City (1991)

<table>
<thead>
<tr>
<th>Classification Number</th>
<th>Name of the Occupation</th>
<th>Population</th>
<th>Percentage to the total working population</th>
<th>Percentage to the total town population</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Cultivators</td>
<td>3097</td>
<td>7.23</td>
<td>2.63</td>
</tr>
<tr>
<td>II</td>
<td>Agricultural labourer</td>
<td>2628</td>
<td>6.13</td>
<td>2.23</td>
</tr>
<tr>
<td>III</td>
<td>Livestock, forestry, hunting, plantation, orchards and allied activities</td>
<td>2562</td>
<td>5.98</td>
<td>2.18</td>
</tr>
<tr>
<td>IV</td>
<td>Mining and quarrying</td>
<td>58</td>
<td>0.13</td>
<td>0.05</td>
</tr>
<tr>
<td>V (a)</td>
<td>Household Industries (Manufacturing, servicing and repairs)</td>
<td>564</td>
<td>1.32</td>
<td>0.48</td>
</tr>
<tr>
<td>V (b)</td>
<td>Other than household industries (Manufacturing, servicing and repairs)</td>
<td>10038</td>
<td>23.43</td>
<td>8.53</td>
</tr>
<tr>
<td>VI</td>
<td>Construction</td>
<td>2534</td>
<td>5.91</td>
<td>2.15</td>
</tr>
<tr>
<td>VII</td>
<td>Trade and Commerce</td>
<td>9551</td>
<td>22.29</td>
<td>8.12</td>
</tr>
<tr>
<td>VIII</td>
<td>Transport, storage and Communication</td>
<td>2235</td>
<td>5.22</td>
<td>1.90</td>
</tr>
<tr>
<td>IX</td>
<td>Other services</td>
<td>9572</td>
<td>22.34</td>
<td>8.13</td>
</tr>
<tr>
<td>Total working population</td>
<td>42,839</td>
<td>100.00</td>
<td>36.40</td>
<td></td>
</tr>
<tr>
<td>Marginal working population</td>
<td>555</td>
<td></td>
<td>0.47</td>
<td></td>
</tr>
<tr>
<td>Non-working population</td>
<td>74,280</td>
<td></td>
<td>63.12</td>
<td></td>
</tr>
<tr>
<td>Total population of Udupi City</td>
<td>1,17,674</td>
<td></td>
<td>100.00</td>
<td></td>
</tr>
</tbody>
</table>
OCCUPATIONAL STRUCTURE OF UDUPI CITY:

Out of the total population (1,17,674) of Udupi city only 36.40 per cent (42,839) is considered as working population. The percentage wise of people engaged in various works shows: other than household industries- 23.43 per cent, other services 22.34 per cent and Trade and Commerce – 22.29 per cent. Whereas, people engaged as cultivators, agricultural labourers, livestock etc., construction and transport- storage- communication are less than ten per cent. very less percentage (less than 5.00 per cent) of people are engaged in household industries and mining etc. (See table No.6.7).

EXISTING LAND USE PATTERN OF UDUPI CITY:

The existing Udupi city has totally 12735.12 hectares of municipal area. Out of this only 3176.33 hectares of land is developed which is 24.94 per cent of municipal area (See Table No.6.8 and Fig. No. 6.5).

1. Residential Use: The area under the residential use in Udupi city is about 2252.24 hectares which is 70.91 per cent of the developed area, if we compare it to the total municipal area it is very less (17.68%). Residential developments are mainly in Kunjibettu, Bannanji, Gundibail Kandiyali wards of Udupi proper and suburbs of Udupi like Manipal, Kommanu, Malpe, Udyavara and Kalyanpur. Residential staff colony of Kasturban Medical College and Syndicate Bank at Manipal, L.I.C. Colony at Jeevaveemanagar and Shanthinagar and Housing Board Colony in Udupi are the planned housing activities in Udupi and its suburbs. These residential areas are of planned development with wide roads and sufficient
open space and buildings. This is slightly more which is due to scattered developments in the planning area. Further, the scattered developments are due to the presence of suitable wet lands and forest with the conurbation limit. And there are no declared gramathana's in South Kanara District. Each and every bit of land is agricultural land and the tendency of the people is to settle in their own agricultural land. Even within the proper Udupi town, there are existing wet lands which may not be converted for non-agricultural purpose in future also.

Table 6.8. Existing land-use of Udupi City (1991)

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Land use Categories</th>
<th>Area (in hect)</th>
<th>Percentage of developed area</th>
<th>Percentage of Municipal area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Residential</td>
<td>2252.24</td>
<td>70.91</td>
<td>17.68</td>
</tr>
<tr>
<td>2.</td>
<td>Commercial</td>
<td>76.47</td>
<td>2.41</td>
<td>0.60</td>
</tr>
<tr>
<td>3.</td>
<td>Industrial</td>
<td>68.19</td>
<td>2.15</td>
<td>0.53</td>
</tr>
<tr>
<td>4.</td>
<td>Public and Semi-Public</td>
<td>166.52</td>
<td>5.24</td>
<td>1.31</td>
</tr>
<tr>
<td>5.</td>
<td>Parks, Playground and open space</td>
<td>67.54</td>
<td>2.13</td>
<td>0.53</td>
</tr>
<tr>
<td>6.</td>
<td>Transport and Communication</td>
<td>545.37</td>
<td>17.17</td>
<td>4.28</td>
</tr>
<tr>
<td></td>
<td>Total Developed Area</td>
<td>3176.33</td>
<td>100.00</td>
<td>24.94</td>
</tr>
<tr>
<td>7.</td>
<td>Vacant land water sheet</td>
<td>867.97</td>
<td>-</td>
<td>6.81</td>
</tr>
<tr>
<td>8.</td>
<td>Agricultural land</td>
<td>8690.82</td>
<td>-</td>
<td>68.24</td>
</tr>
<tr>
<td></td>
<td>Total Municipal Area</td>
<td>12735.12</td>
<td>-</td>
<td>100.00</td>
</tr>
</tbody>
</table>
Regarding structural condition of the houses it may be stated that the conditions are above average and most of the structure are of good condition. All most 50 per cent of the houses are good and 35 per cent are moderates. Out of the remaining 17 per cent of the houses which are bad, 10 per cent need upliftment and the remaining 7 per cent of the houses are to be demolished. These houses which are fit for demolition are in fisherman colony along the coast. The growth of population coupled with the urbanisation of the region on account of educational institutions has resulted in over crowding and shortages of houses and buildings. Purchasing capacity of house site and investment on house construction is not within easy reach of middle and low income group of people. The high value of land and heavy taxation on houses are the discouraging factors for the house buildings. Moreover the general tendency of constructing the houses is on the main streets and public roads only.

2. Commercial Use: In Udupi city totally 76.47 hectares of land is used for commercial purpose, which is 2.41 per cent of the total developed area of the city. Most of the commercial buildings are located in C.B.D. Retail commercial activity is concentrated mainly in central area of the Udupi. The major development are near city bus stand, bus stand, car street, Badagupet, Tankapet of Udupi. The retail commercial activity is expanding along the main roads of the city. Vishweshwarayya Market in the heart of Udupi is the main market besides existing small markets in different areas of Udupi city. But, all the markets are not up to the standard. They need proper shelter and stalls and parking facility. So many retail shops are also located in various parts of the
Udupi city. Many hotels, restaurants and lodgings are located in the central business district. Vegetable market is situated in the heart of the city. Three big lodgings and one cinema theatre are located near bus stand. The railway station is far from the central party of the city. The increasing commercial activities year by year created space problem in addition to the traffic problems in C.B.D. of Udupi.

3. Industrial Use: The land under Industrial activity is 68.19 hectares. It is 2.15 per cent of the total developed area (3176.33 hectares). Out of this, Manipal and Malpe being parts of Udupi city are the two major industrial centres with 27.42 hectares and 19.56 hectares of land under this category respectively. All the medium industries are concentrated at Manipal and Malpe. The major portion of the industrial land is occupied by light engineering units and Tile factories. There are several small scale industries like automobile repairs, food processing, leather processing, edible oil units, saw mills etc., located in scattered manner in all over the Udupi city. The low percentage of land under industrial use clearly indicate that the existing industries are not enough to support economical condition of the area.

4. Public and Semi-Public Use: Altogether the area occupied by public and semi-public purpose is 166.52 hectares of land which is 5.24 per cent of developed area of the Udupi city. If we compare this space with the total municipal area of the city, it is very little (1.31%). Almost 80-89 per cent of the area under Public and Semi-Public use is covered by educational institutions and religious places. Further most of the area under this use (60 per cent) is in
Manipal and Udupi sectors. The areas falling under this category are spread all over the Udupi city and are generally surrounded by areas used for residential and commercial purpose. Most of the government offices like Assistant Commissioner, Tahasildar, B.D.O., A.E.O., Forest Office, Court Complex, Police Station, Prison, State Bank, Syndicate Bank, Karnataka Bank etc. are located at south of the C.B.D. area.

The town planning office, Zilla Panchayat, Engineering Office and some other offices are located along road Bikampady road (Kundapura road) while many public and private offices are distributed in southern part of the Udupi.

The primary schools are located in all over the town while junior colleges and degree colleges (including engineering and dental) are located outside the residential zones. Private and public dispensaries and maternity homes are located in residential areas of the Udupi. Temples, churches and mosques are located in respective community localities while balks are found in commercial streets. Two police stations are located in southern part while K.E.B. (Karnataka Electric Board) office is situated to the west, within the town municipal limit.

5. Park, Play Grounds and Open Space: In Udupi city 67.54 hectares of land is used for park, playground and open space. Gandhi Park at Ajjarkadu is the only major park available in the planning area. Bhujanga Park is another small park situated in the Udupi. There is a shortage as far as the area under this category is concerned. There are not enough open spaces and playgrounds.
Almost all the playgrounds except Ajjarkadu stadium are the college playgrounds. There are many playgrounds which are attached to the college like M.G.M. College at Udupi, Kasturba Medical College of Technology at Manipal besides Gandhi Maidan at Ajjarkad. Most of the outdoor sports events are organized on these playgrounds. The parks, playgrounds and open spaces are very essential to the urban life-particularly to maintain the environmental balance. In the evening time the people of Udupi go to sit in the grounds of schools and colleges to breathe fresh air.

6. Transport and Communication Use : The area under transportation and communication uses is 545.37 hectares, which is 17.17 per cent of the developed area. This category consists of bus stand, bus depot and road, railway station, post, telegraph and port area, telephone offices and micro-wave stations. Both the service Bus-stand and Moffusil Bus Stands are situated in the core area of the Udupi Town. All the 60-70 per cent of the roads are narrow roads with less than 30' in width. The P.W.D. M.D.R.S. are the only broad main roads in the planning area. The C.B.D. is not planned area as a result of which there is more traffic problem in this area. The Malpe Karkala and National Highway 17 are the two arterial roads at perpendicular to each other which are the most important roads in the planning area. Roads and street in the Udupi are proper and occupy an area of about 69.63 hectares. The street pattern of the town is not followed by conscious planning. However the roads and lanes in the city are fairly good except some roads need widening. The communication facilities in the villages is also satisfactory. The general bus
stand is situated in the heart of the Udupi town and the city bus stand is also situated near by. The fishing port is situated at Malpe. All these existing facilities are in a greater demand of improvement in their quality.

**Non-developed Area**: The vacant land, water sheet and agricultural land are considered under the non-developed area. Out of the total municipal area (12,735.12 hectares) of Udupi town, 867.97 hectares of land is vacant and under water sheet. It is 6.18 per cent of municipal area. The land under agriculture use is about 8690.82 hectares which is 68.24 per cent of the municipal area.

In this category, the land under water body, gardens, dry and wet agriculture lands, forest, vacant land are included. The major rivers such as Swarna and Udyavara river, backwater along the coastal line and many tributaries have increased the land under water body. The vacant land is the only land which is kept idle without any activity. Hence, this is unproductive in nature. Vast pockets of agricultural land measuring about 20799 acres are situated in the rural part of the planning area.

If we compare the land use pattern of Udupi with the standard land use models it resembles the work home concept theory (see Fig. No 6.9).

**KARWAR TOWN**:

*Karwar town* is a taluk headquarters as well as district’s head quarter of the same name located at 14°.42' to 15°.02' northern latitude and 74°.8' to 74°.34' eastern longitude and extends over an area of 8.06 Sq. km. The town
can be approached by land through all-weather roads and also sea during
navigable period of the year. Though the coast is unbroken by deep or wide
mouthed estuaries, it is varied and picturesque, with rocky islands and capes,
stretches of and beaches, low narrow mouths and rough bluffs and head lands.
The deep winding valleys, waving wooded hills and wild background of high
peaks stretch behind the coastline boundaries.

Karwar is the only one class two town in Karnataka coast with a
population 750201 as per 2001 census. Karwar town is surrounded on three
sides by small beaches which are the delight of the sea bathers. In 1638, Sir
William Counten opened a factory here and by 1660 this factory was
manufacturing the finest muslins. In 1715 the town was taken by the Sonda
chief and the old fort was pulled down and a new one was built at Sadashivgad.
Karwar bay is remarkable for its scenic beauty. The chief merit of Karwar
town is its fine harbour which is fit for use during all seasons.

Karwar, the district and taluk headquarters (547 km from Bangalore) is a place
of importance. The place name Karwar is a misnomer. It is named after
Kadwad, actually a far off village and the English factory at Kadwad had its
opening to the sea from the point where Karwar town now stands, to the south
of the Kali river. The British made this place their district headquarters in 1862.
Karwar was an ancient site of sea trade visited by the Arabs, Dutch,
Portuguese, French and later the British. Therefore, many place names in the
area have undergone considerable change. For instance, Baithkol is an Arabic
term, Bait-el-Kol meaning “bay of safety”. Ibn Batuta passed through this tract. Commodities for export to foreign countries were brought from Deccan by routes which passed through this tract for several centuries. Karwar is safest port to the south of Bombay fit for use during all seasons. The port is a hill projecting into the sea called Karwar head, full of flora and five islands, viz. Anjidiv, Kurma Gad, Dev Gad, Mogral and Samshigudda protecting the port from heavy winds. Karwar bay is remarkable for its beautiful scenery, studded with rows of coconut groves all along. Poet Ravindranath Tagore wrote his first drama on a visit to this place. He said the following regarding its beach: “The sea beach of Karwar is certainly a fit place in which to realise that beauty of Nature is not a mirage of imagination but reflects the joy of the infinite, and thus draws us to lose ourselves in it. Where the universe is expressing itself in the magic of its laws, it may not be strange if we miss its infinitude, but where the heart gets into immediate touch with immensity in the beauty of the meanest of things, is there any room left for arguments?” There is a statue of the poet on the beach. Flanked by series of hills abounding in greenery on the east and the sea on the west with its picturesque island and silvery beach, Karwar is the most picturesque of district headquarters in the State. New port has made it a centre of trade and industry.

There are many temples and mathas located in Karwar town. At Kajubag, there are temples of Vithal-Rakhumayi, Maladevi and Ishwara. At Baad, there are temples of Gramadeva, Bandikatta (open shrine), Dattatreya,
Revati, Saptakotishwara, Nirakara and Brahmadeva (open shrine). At the Gramadeva temple, the bandihabba is celebrated during May. Near Jail, there is a Maruti temple. At Kodibag, there are temples of Durgadevi, Muralidhara Matha (of Partagali), etc. Near Kone Bazaar area, there are temples of Maruti and Radhakrishna. The place also has a Ramakrishna Ashrama and the Padmanabhaswamy Matha at Baad. At Kone, there is a very old Church built in 1843 of the Roman Catholics and subsequently renovated in 1864 and again in 1950. One more Catholic Church which is also old was built in 1867. There is also Protestant Church called St. Paul's, Important beaches near Karwar are the Karwar beach, Karwar harbour, Kone, Circular beach of Arga, Baithkol beach and Kodibag at the confluence of the Kali. In Sunkeri (Sunkadakeri or toll gate) area, there are temples dedicated to Venkataramana (Matha), Naganatha (where an anthill is worshipped), Krishna, Mahalasa, Shanteri and Navadurga. The Venkataramana Matha, which belongs to the Partagali Matha is 300 years old and has finest ochre (kavi) paintings on its walls. In the Kattinakon area are temples of Vithoba, Lakshminarasimha, Lakshminarayana, Barge Bira and Naganath. Opposite the Naganath over an Ashwatthakatte at Sunkeri there is a Vishnu statue, about one metre tall, of considerable antiquity. There is a Roman Catholic church on the bank of Kadwad stream, called the immaculate Conception Church built in 1801. It has an unique octagonal plan. There is a mosque and a dargah of an unknown saint at Sunkeri.
Table 6.9 Growth of Population of Karwar Town

<table>
<thead>
<tr>
<th>Years</th>
<th>Population</th>
<th>Decadal Percentage Growth of Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1961</td>
<td>23,906</td>
<td>-</td>
</tr>
<tr>
<td>1971</td>
<td>27,770</td>
<td>16.16</td>
</tr>
<tr>
<td>1981</td>
<td>47,210</td>
<td>70.00</td>
</tr>
<tr>
<td>1991</td>
<td>51,022</td>
<td>8.07</td>
</tr>
<tr>
<td>2001</td>
<td>75,020</td>
<td>47.03</td>
</tr>
<tr>
<td>2011*</td>
<td>1,00,645</td>
<td>34.16</td>
</tr>
<tr>
<td>2021*</td>
<td>1,39,117</td>
<td>38.22</td>
</tr>
<tr>
<td>2031*</td>
<td>1,90,439</td>
<td>36.89</td>
</tr>
</tbody>
</table>

* Projected population.

OCCUPATIONAL STRUCTURE OF KARWAR TOWN

According to 1991 census, out of the total population (51,022) 14,424 persons are workers (28.27 per cent of total population). While only 452 persons (0.89 per cent) are marginal workers, and remaining 36,146 persons (70.84 per cent) are non-workers. Out of the total working population (14,424) of the Karwar town 31.43 per cent of people are engaged in other services, 21.29 per cent in trade and commerce, 10.89 per cent are engaged in livestock, forestry, hunting etc., 9.47 per cent are engaged in other than household industry particularly in servicing activity.

Transport, storage and communication together share 8.23 per cent, household industries share 7.56 per cent, construction 5.55 per cent, cultivators 3.12 per cent, agricultural labourers 2.22 per cent and mining and quarrying 0.24 per cent (See Table No.6.10).
Table 6.10. Occupational Structure of Karwar Town (1991)

<table>
<thead>
<tr>
<th>SI. No.</th>
<th>Occupation Categories</th>
<th>Population</th>
<th>Percentage to the total working population</th>
<th>Percentage to the total town population</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Cultivators</td>
<td>450</td>
<td>3.12</td>
<td>0.88</td>
</tr>
<tr>
<td>II</td>
<td>Agricultural labourer</td>
<td>321</td>
<td>2.22</td>
<td>0.63</td>
</tr>
<tr>
<td>III</td>
<td>Livestock, forestry, hunting, plantation, orchards and allied activities</td>
<td>1571</td>
<td>10.89</td>
<td>3.08</td>
</tr>
<tr>
<td>IV</td>
<td>Mining and quarrying</td>
<td>35</td>
<td>0.24</td>
<td>0.07</td>
</tr>
<tr>
<td>V (a)</td>
<td>Household Industries (Manufacturing, servicing and repairs)</td>
<td>1090</td>
<td>7.56</td>
<td>2.14</td>
</tr>
<tr>
<td>V (b)</td>
<td>Other than household industries (Manufacturing, servicing and repairs)</td>
<td>1366</td>
<td>9.47</td>
<td>2.68</td>
</tr>
<tr>
<td>VI</td>
<td>Construction</td>
<td>800</td>
<td>5.55</td>
<td>1.57</td>
</tr>
<tr>
<td>VII</td>
<td>Trade and Commerce</td>
<td>3071</td>
<td>21.29</td>
<td>6.02</td>
</tr>
<tr>
<td>VIII</td>
<td>Transport, storage and Communication</td>
<td>1187</td>
<td>8.23</td>
<td>2.32</td>
</tr>
<tr>
<td>IX</td>
<td>Other services</td>
<td>4533</td>
<td>31.43</td>
<td>8.88</td>
</tr>
<tr>
<td></td>
<td>Total working population</td>
<td>14,424</td>
<td>100.00</td>
<td>28.27</td>
</tr>
<tr>
<td></td>
<td>Marginal working population</td>
<td>452</td>
<td></td>
<td>0.89</td>
</tr>
<tr>
<td></td>
<td>Non-working population</td>
<td>36,146</td>
<td></td>
<td>70.84</td>
</tr>
<tr>
<td></td>
<td>Total population of Karwar town</td>
<td>51,022</td>
<td></td>
<td>100.00</td>
</tr>
</tbody>
</table>
EXISTING LAND USE PATTERN OF KARWAR TOWN:

Karwar town covers an area of 1435 hectares. Out of this about 200 hectares of land is unfit for development, due to marshy land as well as being hill slopes. The actual developed land at present is 552.71 hectares, while 682.29 hectares of land is for future development. The following table (No.6.11) gives the breakup of land-use of the entire Karwar town. (See Fig. No.6.6).

Table No. 6.11. Existing land use of Karwar Town (1991)

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Land use Categories</th>
<th>Area (in hectares)</th>
<th>Percentage of developed area</th>
<th>Percentage of Municipal area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Residential</td>
<td>354.76</td>
<td>64.19</td>
<td>24.72</td>
</tr>
<tr>
<td>2.</td>
<td>Commercial</td>
<td>10.54</td>
<td>1.91</td>
<td>0.73</td>
</tr>
<tr>
<td>3.</td>
<td>Industrial</td>
<td>8.89</td>
<td>1.61</td>
<td>0.62</td>
</tr>
<tr>
<td>4.</td>
<td>Public and Semi-Public</td>
<td>44.11</td>
<td>7.98</td>
<td>3.07</td>
</tr>
<tr>
<td>5.</td>
<td>Parks, Playground and open space</td>
<td>13.41</td>
<td>2.43</td>
<td>0.93</td>
</tr>
<tr>
<td>6.</td>
<td>Transport and Communication</td>
<td>121.00</td>
<td>21.89</td>
<td>8.43</td>
</tr>
<tr>
<td></td>
<td><strong>Total developed area</strong></td>
<td><strong>552.71</strong></td>
<td><strong>100.00</strong></td>
<td><strong>38.52</strong></td>
</tr>
<tr>
<td>7.</td>
<td>Vacant land and water sheet</td>
<td>882.29</td>
<td></td>
<td>61.48</td>
</tr>
<tr>
<td>8.</td>
<td>Agricultural land</td>
<td>-</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td></td>
<td><strong>Total Municipal Area</strong></td>
<td><strong>1435.00</strong></td>
<td></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>
1. **Residential Use**: The area under residential use in the Karwar town is 354.76 hectares, which is 64.19 per cent of the developed area. It is 24.72 per cent to the total municipal area. The maximum number of houses are concentrated in Kodibag, Kone, parts of Sunkeri, Nandangadda and Kathinken villages (in extreme northern part) and Sonarwada are important areas where residential land use is predominant. Houses are constructed with local available materials like stones, laterites, bricks etc. The roads are very narrow and congested. Open space is very less, even no play grounds. The new residential extensions are developed along the coast (north-western side of the existing old town). In this extension buildings are constructed by bricks and R.C.C. with modern architectural style, while the roads are very wide, open space is more around the houses, and parks and playgrounds are also constructed.

About 25.00 per cent of the total houses have good structural conditions and 54.00 per cent of buildings are moderate, while 15.00 per cent of buildings are fit for demolition. The bad and dilapidated (6.00 per cent) buildings are required to be pulled down and replaced by new structures.

The over all density of population in the entire town (developed area) is 92 persons per hectare. The density of population to the municipal area is 36 persons per hectare. About 10,637 households are residing in 10,102 houses. But the density of population is not equally distributed in the entire town. However, it requires to be examined carefully and adjustment to be made in future plans to siphon out the population from high density area to new residential extensions.
2. Commercial Use: The area occupied by commercial use in the entire
developed area of the Karwar town is nearly 10.54 hectares which is 1.91
per cent of the developed area. The commercial activity is concentrated in
extreme south-western part of the city. This is the main market of Karwar
town as well as for surrounding area.

Absence of wholesale trade and quite small range of goods in retail trade,
speak of the reason why commercial use accounts for lower percentage of
total land. Most of the commercial shops are located in front portion of the
buildings while back-side is used for residential purpose. The central
business district has developed along the bus stand road and around the
town municipal office.

3. Industrial Use: Out of the total developed area (552.71 hectares) only 8.89
hectares of land is used for industrial purpose which is 1.61 per cent of the
developed area. As such, Karwar has no major industrial activity. Few saw
mills, bakeries, blacksmith, service industries like garages are the only type
of industries developed here. However, **Karwar is known for jewellery
and ornaments. But manufacturing units are located within the houses.**
Some engineering and automobile shops are also located along the bus
stand road and other roads around bus stand.
4. **Public and Semi-Public Use**: The area under public and semi public use is 44.11 hectares, which is 7.98 per cent of the developed area. This category consists of all types of government and private administrative offices. This comparatively higher figure is due to the fact that Karwar being a District Head Quarters of Uttara Kannada District, most of the Government offices are located in Karwar town, so also, Government Hospital, Schools and Colleges are all located. Most of these are located in and around C.B.D. of Karwar town. The public utility places like police station and K.E.B. sub stations are located at one kilometer distance to the west of bus stand. The religious places like temples, churches and mosques are in respective community hub. There are many health centres, public as well as private hospitals in the heart of the town, but their locations are necessary in residential layouts also.

5. **Parks, Play Grounds and Open Space Use**: The maintained parks, play ground and open spaces of Karwar town account for 2.43 per cent (13.41 hectares) of developed area. There is only one park developed by town municipality and children’s park on the sea-shore. There is only one play ground for general public along Karwar Kodibag road. The other playgrounds are attached to educational institutions. In new residential extensions the open space is more than the older part of the town.
6. **Transport and Communication Use**: The area occupied by transport and communication activities is 121 hectares which is 21.89 per cent of the developed area. It includes the streets, main roads, bus stand, post offices, telephone exchange offices etc. The roads in old residential and old commercial area are very narrow with partly mettled, whereas the roads in C.B.D and around bus stand are very wide. However, now these road sides are being used by tea-stalls and petty shops. Therefore it is congested. The means of communication are essence of urban life. The head post office is situated on the bus stand road and a few sub-post offices are scattered in different parts of the town. The telegraph and telephone offices are located at opposite of bus stand. About 65.71 hectares of land is accounted for Karwar all weather port, which is at the south western side of Karwar town.

Except for few major roads, other developed roads in the city are narrow and zig-zag.

**Non Developed Area**: There is 882.29 hectares of land under non-developed category, which consists of vacant land and water covered area and agricultural land. But there is no agricultural land in the town. The northern, north-western and eastern parts of the town have lot of vacant land.

The present land utilization pattern of Karwar town resembles to a little extent the theory of urban land-use of multiple nuclei. (see fig. no.6.9).
BINAGA (T. Karwar) Binaga was a revenue village during 1991, (6 kms for Karwar) whereas during 2001 it has merged as part of Karwar town. It has risen into prominence due to the newly founded caustic soda factory. There are temples dedicated to Somanath, Malasa, Durga, Ramanatha, Bhoodevi and atop the hill nearby is the Heddevaru shrine. In the Somanath temple, the annual jatra is celebrated during December and more than 2,000 people assemble. This temple is renovated with brick and tile. The place has a mosque, and also a Roman Catholic church built in honour of St. Anne in 1876. The famous Anjidiv Island under Goa administration is four km from here and can be reached from Binaga coast. There is also another small island called Hulasigudda, three km from Binaga. Chendiye (10 km from Karwar) is a revenue village, a place of considerable antiquity, having temples of Mahadeva, Nirakara, Keshava and Vishwa Narayana (in a field), etc. Both Keshava and Narayana temples are renovated in 1982. The Mahadeva temple, a tiled structure has beautiful paintings of kavi with geometrical designs. At the entrance of the garbhagriha on the right side is a fine statue of Ganapati. Bandihabba and dindihabba fairs are celebrated in honour of Vishwanarayana and Devati during May for three days and nearly 1,000 people assemble. There is also a Catholic Church (old) and a Protestant Church (recent).

The existing landuse analysis of Binaga town reveals that 185.66 hectares of land has been developed out of 253.55 hectares of conurbation area and 785.42 hectares of the total area of the planning.
Table 6.12. Existing land use of Binga Town (1991)

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Land use Categories</th>
<th>Area (in hectares)</th>
<th>Percentage to the developed area</th>
<th>Percentage to the Municipal area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Residential</td>
<td>83.43</td>
<td>44.94</td>
<td>10.62</td>
</tr>
<tr>
<td>2.</td>
<td>Commercial</td>
<td>1.24</td>
<td>0.66</td>
<td>0.16</td>
</tr>
<tr>
<td>3.</td>
<td>Industrial</td>
<td>70.66</td>
<td>38.06</td>
<td>8.99</td>
</tr>
<tr>
<td>4.</td>
<td>Public and Semi Public</td>
<td>0.51</td>
<td>0.27</td>
<td>0.06</td>
</tr>
<tr>
<td>5.</td>
<td>Parks, Playground and open space</td>
<td>2.47</td>
<td>1.33</td>
<td>0.31</td>
</tr>
<tr>
<td>6.</td>
<td>Transport and Communication</td>
<td>27.35</td>
<td>14.73</td>
<td>3.48</td>
</tr>
<tr>
<td></td>
<td><strong>Total developed area</strong></td>
<td><strong>185.66</strong></td>
<td><strong>100.00</strong></td>
<td><strong>23.64</strong></td>
</tr>
<tr>
<td>7.</td>
<td>Vacant and water sheet</td>
<td>176.94</td>
<td></td>
<td>22.53</td>
</tr>
<tr>
<td>8.</td>
<td>Agricultural land</td>
<td>423.82</td>
<td></td>
<td>53.96</td>
</tr>
<tr>
<td></td>
<td><strong>Total Municipal Area of Binga town</strong></td>
<td><strong>785.42</strong></td>
<td></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

**Existing Developments:**

In Binaga town we notice the Ballarpur Caustic Soda Factory (BILT), “Sea-Bird” Naval base along the sea coast, small and medium residential pockets spread all along the western side. All along the sea coast on the western side of Binaga the land is acquired for “Sea-Bird” Naval Base. On the remaining land, small and medium size residential packets have come up. Commercial activities along the N.H. 17 is seen. On the eastern side of the N.H. 17 of Binaga town Ballarpur Caustic Soda Factory (BILT) is located. This
factory has its own housing colony and all the necessary infrastructure. However this Binaga town of 1991 census has been joined with Karwar town as an urban agglomeration as per 2001 census.

BHATKAL TOWN

Bhatkal is the class III town in Karnataka coast with a Population of 42,171 as per 2001 census. Bhatkal town is an important town in the Coastal region of North Canara District, located on the N.H. No. 17 at a distance of 131 km to the south from Karwar. The Konkan Railway passes through the town which connects Mangalore and Bombay. It is located in the mid-coastal region of the state. Sharabi river flows in the Southern side of the town. The surrounding area of the town is flat with black loamy soil. It is headquarters of Bhatkal Taluk.

Bhatkal was formerly a major trading centre especially during the Vijayangar period. In 1542 A.D. the town was burnt by the Portuguese and thereafter the town lost its importance. The Chandranatha Basti built by Jettappa Nayaka is the largest Jain monument and among the temples in the town that of Kethapati Narayana is the finest. This Bhatkal town contain as many as 8 mosques and is an important centre of Navayat Muslims. Near this town, there are a few interesting islands called Jolly Kunda, Nethrani Gudde and the pigeon island.

Bhatkal, the taluk centre (126 km from Karwar) located at the southern most point of the district has a hoary past. Bhatkal was converted into a Petha in the
year 1880 and later in 1960 it was upgraded into a taluk. The place name is said to have been derived from the name of the celebrated Jaina Saint Bhatta Akalanka, who lived during the 9th century. But it looks more proper that the name is derived from the topography of the place as batta (circular) kala (arena) in Kannada, as the original town on the sea coast has a circular layout, surrounded by the hill ranges. A record of 1545 also calls the place as Vrittapura. An inscription dated 1414 spells the place as ‘Bhatta Kala’. The extension to this part is Mudbhatkal on the east which appears to have sprung up after the old town had been destroyed by the Portuguese in 1542. But another inscription of 1408 mentions the place as Bhatkala. The Dutch spelt it ‘Baticula’. In 1502 Vasco Da Gama spelt it as ‘Batikala’. A map published in Paris in 1652 spelt it as ‘Batikula’. In ancient period it was one of the major sea trading centres on the west coast, especially under Vijayanagar. The place had been under the control of the Alupas of Dakshina Kannada before the rise of the Saluvas of Gersoppa and later with the split of the Saluva family it came under the Haduvalli line in about 1408. They were feudatories of Vijayanagar. Many foreign travelers like Ibn Batuta, Barbosa and Paes have visited this place and have described its importance as a trading centre. It was known to the Arab traders and they came and settled down here during the seventh or eighth centuries in large numbers and the present Navayats are their descendants.

Located on the south bank of the river Sharabi the place was the principal port of Vijayanagar empire and it was exporting iron ore, rice, sugar, pepper, etc., and Barbosa speaks of importing of horses. The Portuguese
wanted to have a factory at Bhatkal, but they were not permitted by Vijayanagar. Later in 1542, the Portuguese Viceroy D'souza destroyed the town to punish the queen of the place, Channa devi, and a new town arose after this destruction including the extension Mudbhatkal. In 1606, the place came under the Keladi Nayakas and continued to be a flourishing trading centre. Peter Mundy with Robinson went to Ikkeri through this port in 1637. The English founded a factory at Bhatkal in 1637. Captain Wedell founded the factory on behalf of the Company floated by Courten from Cornwall. Mundy describes the place at length. The factory had to be abandoned in 1670 as a dog of the factory bit a temple bull (basava) and killed it, and the enraged local people killed the 18 inmates of the factory. A 11 metre square open ground over-looking the Sharabi river houses the tombs of three Englishmen buried in 1637-38, and these too might have been buried there. The Portuguese opened a factory in 1678 and they continued for some decades. Later Haider and Tipu inherited the place from Keladi and it came under the British in 1799. Anequetil du Perron visited the place in 1758 and speaks of the fort built on a rock. Buchanan (1801) speaks of the place as having 500 houses and also mentions the existence of 76 “temples belonging to the followers of Vyasa”

The place has over a dozen fine temples, mostly of Vijayanagar times and located at Mudbhatkal. Of these Khetpai Narayana temple is the outstanding one with finest sculptures that one can come across in the district and most of them are on secular subjects. The temple proper is a compact structure about 10X6 metres with a gabled roof of granite slabs. This whole
structure is surrounded by stone lattice windows. The garbhagriha with a pradakshthapatha has a fine sculpture of Gopikavastrahara. The deity inside is Narayana. The navaranga has four fine pillars of typical Vijayanagar style with kumbhas at the top and the ceiling at the centre has the eight dikpalas engraved in eight directions. In the four corners are fine groups of kolata performers engraved. On the outer walls of the adisthana are nearly 20 scenes of Ramaayana engraved beautifully in high relief according to sequence. The temple is surrounded by a prakara and on the lower part of the verandahs are found the rich series of sculptures not more than 1/3 metre in height depicting a number of lively secular objects like a ratha being dragged, an elephant being tamed, two men engaged in duelling, man engaged in a fight with an elephant, two elephants fighting, a lady churning curds, men wrestling, palanquin carriers, a scene of child birth, a lady shampooing her hair, one snake charmer, acrobats, couple with child and so on. Outside the temple is a monolithic dwajasthambha in front, on which are engraved on one side facing the deity a rich couple, perhaps Khetpai and his wife. Khetpai, a jeweler from Goa, who came and settled down in the town built the temple in about 1545-46 and queen Chennadevi made a grant to the temple. Below the panel are engraved in a smaller size five other couples, perhaps the five sons and daughters-in-law of Khetpai (or Khetappayya) and their names are mentioned in many records beginning with the one of 1554 and these sons have made many grants to the temple. (Inscriptions, mentioning all these details have been taken to Dharwad and housed in the Kannada Research Institute).
Very near to this is the Joshi Shankaranarayana temple, built in 1554 and the prefix in its name indicates the name of the builder. The square temple has a garbhagriha and a verandah surrounding it and in its front is a separate detached nandimantapa which is a fine pillared structure. Both these temples have gable roofs covered with granite slabs. Next to this is another temple called Santappa Nayaka Tirumala, in which God Venkataramana is worshipped and the builder of the temple Shantappa Nayaka is described by the locals as the brother-in-law of Khetpai, who built the Narayana temple. Constructed in 1555, this temple is as big as Narayana temple and has profuse sculptured motifs like the Narayana, but not as superior as of the latter. The Adike Narayana is another temple in Mudbhatkal assigned to 1550 and described as built by an arecanut (adike) merchant. Virupaksha Narayana temple built by one Jeevana Nayaka in 1565 is a small monument. Narasa Kini Narasimha temple, built by Narasa Kini, a merchant, and assigned to 1538 also has fine sculptures. Its navaranga has pillars with lathe turned top and has beautiful images of Brahma and the dikpalakas on the ceiling, in the midst of the fields, there is another small temple of this period called Lakkarasa Kamthi (Kamath) Lakshminarayana in the same area, assigned to 1550 AD. Raghunatha temple of 1590 A.D. built by one Bala Kini is another monument here. There is in inscription on a pillar peaking of this. Of the other old temples of the place is the Choleshwara, perhaps the oldest temple in the town, originally built of laterite and renovated subsequently. It may have been of the days of Chola intrusion in Karnataka of 10th -11th century period, and local people say that it is
more than 600 years old. It has been expanded in Vijayanagar times by providing granite walls, windows and slanting roofs. The temple has a beautiful balipitha and also a monolithic pillar with a small Nandimantapa atop. There is also a Ganapati shrine in the precincts. Recent renovation to the temple has added a curvilinear shikhara to the garbhagriha, which houses a linga. The temple has two Tamil inscriptions which speak of one Modaliyar from Tiruppagunram and another of one Moraya pandundaram. But the script is not of the Chola times but of a very later date.

The gramadevata of the town is Maruti and this newly renovated temple is in the heart of the town. The car festival of this temple takes place during Ramanavami (March-April) for three days. There are eight other Maruti shrines in the town in its eight directions with this gramadevata temple as the nucleus. Other temples of the place are the Shanteri Kamakshi, the Parashurama Damodara, the Venkataramana, the Kalikamba, the Gopala Krishna and the Dattatreya which are all of recent times or recently renovated. The Mari Gudi of the place is renowned for its jatra taking place in about August for two days when nearly 50,000 people assemble. The Kashi Matha of Bhatkal, belonging to Gauda Saraswats has the samadhi of the first guru of the Matha, Yadavendra Tirtha (16th century). There is also the Jeevottama or Odeyara Matha of the Gokarna Partagali Matha of the Gauda Saraswats, and this is described as built by Narayanateertha, the first Swamy of the Matha. Of the Jaina bastis of the place, one at the centre of the town, the Parshwanatha, is notable. It has a tall monolithic mansthambha at the entrance, and the small shrine atop has fine
images in white marble. The basti has a navaranga with typical granite Vijayanagar pillars of square and octagonal shape, and square parts at the bottom have fine geo-metrical basket-like inter-woven designs. There are two fine granite dwarapalakas at the entrance of the navaranga and two more at the garbhagriha. The basti was erected in 1545 in the days of Chennadevi of Haduvalli perhaps by the merchants of the place led by one Timmi Shreshti. Two hero-stones in the basti of 1542, speak of the death of one hero, Enkappa Nayaka in that year when the pharangis (Portuguese) attacked the town, and the grants made to his family. Two nishidhi stones behind the basti speak of the death of Malliraya, a prince in 1410 and another of a princess (not dated). Another important basti of the place is Banda Basti or Chandranatha Basti, called in the inscription of 1556 as Vardhamana Basti, and stated to have been built by one Narayana Nayaka, a commander of Chennabhairadevi. This huge basti is to be noted for its plan, and it does not contain any decorative motifs or sculpture. There are three garbhagrihas in this complex structure, all in a row and in front there is a manasthambha.

Bhatkal has sizeable Muslim population and they are called Navayats, mostly engage in trade, and the town has a variety of residential buildings, with superb wooden workmanship and new RCC building to be found in some of the big cities, built by these enterprising people. There are eight mosques in the town and of these Chinnadapalli, the Jamia mosque, described to have been built some 800 years ago, and having had a golden dome is the most notable. Renovated about 40 years ago, this complex building has its beautiful wood
work on the ceiling of antiquity still preserved in some parts. It has an Arabic and Persian inscription on a loose slab, recording the construction (perhaps renovation) of the mosque in 1447-48 AD and, the record is composed by Dagh. In Sultan street is the Sultan mosque ascribed to Tipu Sultan. On the bank of the river is the Gausiya mosque. Another mosque near the river is the Mushma mosque. The Khalifa mosque, the Alva mosque, the Khazi mosque and the Shadali masjid are the other notable Muslim monuments of the place, and many of them are modern ones. The place has six dargahs and of these the Dongar Palli of Magdum Phaki Ismail, an Arab saint is the notable. It has an Arabic inscription in the 15th century characters, written crudely. The urus takes place here in the month of Jamadil Akher. The Taqiya Dargah is of one Labbesaheb described as from Kayalpatnam in Tamilnadu. At the bundar area, there is the dargah in memory of the Peer of Sadashivgad and a urus is held in the month Saffar. The Shah Nigah Dargah is in honour of a saint who lived 200 years ago. The Syed Sakkaf Sahole Dargah is near the Jamia mosque. The dargah of Kutti Moosa is near the Light House in bundar (port) area, and this saint is believed to have lived very long. The Mazlis-e-Islam-o-Tanzim of the place is having a library called Siddiq Library which has a fine collection of manuscripts, both Arabic and Persian, mostly on religious subjects. Bhatkal is a centre of Arabic learning where students, both boys and girls, are trained for the examinations conducted by Nadwatul Ulma of Lucknow. There are three institutions sponsored by the Jamia Islamia preparing students for these examinations.
The port area of Bhatkal, falling in the Mavinkurve village has the dock and a light house on a hillock. There is a small Amaralinga temple at the bottom at the hillock where actually a Jaina nishidi stone is being worshipped. There is a 19th century inscription on a pillar in front, and is one modern Durgaparameshwari shrine nearby where an anthill is being worshipped. The light house can be visited between 4pm and 5pm every day, and from this hillock, a picturesque view of the surrounding area, and of the villages like Mundolli, Belki, Huyilumadi, etc., can be had. There is a shrine of Kutumeshwara here where an anthill and many wooden painted pillars are worshipped.

GROWTH OF POPULATION OF BHATKAL TOWN

The Bhatkal was considered as a town in 1961 census when it had 15,070 population. As per 2001 census, it has 42,171 population. The future population growth of Bhatkal town is estimated to be 76,404 by the year 2031 (see Table No. 6.13).

Table 6.13. Growth of Population of Bhatkal Town

<table>
<thead>
<tr>
<th>Years</th>
<th>Population</th>
<th>Decadal percentage growth of population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1961</td>
<td>15,070</td>
<td>-</td>
</tr>
<tr>
<td>1971</td>
<td>18,732</td>
<td>24.30</td>
</tr>
<tr>
<td>1981</td>
<td>25,665</td>
<td>37.01</td>
</tr>
<tr>
<td>1991</td>
<td>31,478</td>
<td>22.65</td>
</tr>
<tr>
<td>2001</td>
<td>42,171</td>
<td>33.96</td>
</tr>
<tr>
<td>2011*</td>
<td>51,264</td>
<td>21.56</td>
</tr>
<tr>
<td>2021*</td>
<td>62,675</td>
<td>22.26</td>
</tr>
<tr>
<td>2031*</td>
<td>76,404</td>
<td>21.90</td>
</tr>
</tbody>
</table>

* Projected population.
Table 6.14 Occupational Structure of Bhatkal Town (1991)

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Occupation Categories</th>
<th>Population</th>
<th>Percentage to the total working population</th>
<th>Percentage to the total population</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Cultivators</td>
<td>201</td>
<td>2.90</td>
<td>0.64</td>
</tr>
<tr>
<td>II</td>
<td>Agricultural labourer</td>
<td>103</td>
<td>1.49</td>
<td>0.33</td>
</tr>
<tr>
<td>III</td>
<td>Livestock, forestry, hunting, plantation, orchards and allied activities</td>
<td>100</td>
<td>1.44</td>
<td>0.32</td>
</tr>
<tr>
<td>IV</td>
<td>Mining and quarrying</td>
<td>14</td>
<td>0.20</td>
<td>0.04</td>
</tr>
<tr>
<td>V</td>
<td>Household Industries</td>
<td>147</td>
<td>2.12</td>
<td>0.47</td>
</tr>
<tr>
<td>(a)</td>
<td>(Manufacturing, servicing and repairs)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>Other than household industries</td>
<td>559</td>
<td>8.08</td>
<td>1.78</td>
</tr>
<tr>
<td>(b)</td>
<td>(Manufacturing, servicing and repairs)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VI</td>
<td>Construction</td>
<td>194</td>
<td>2.80</td>
<td>0.62</td>
</tr>
<tr>
<td>VII</td>
<td>Trade and Commerce</td>
<td>3293</td>
<td>47.59</td>
<td>10.46</td>
</tr>
<tr>
<td>VIII</td>
<td>Transport, storage and Communication</td>
<td>347</td>
<td>5.01</td>
<td>1.10</td>
</tr>
<tr>
<td>IX</td>
<td>Other services</td>
<td>1961</td>
<td>28.34</td>
<td>6.23</td>
</tr>
<tr>
<td></td>
<td>Total working population</td>
<td>6919</td>
<td>100.00</td>
<td>21.98</td>
</tr>
<tr>
<td></td>
<td>Marginal working population</td>
<td>132</td>
<td></td>
<td>0.42</td>
</tr>
<tr>
<td></td>
<td>Non-working population</td>
<td>24,427</td>
<td>77.60</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total population of Bhatkal town</td>
<td>31,478</td>
<td></td>
<td>100.00</td>
</tr>
</tbody>
</table>
OCCUPATIONAL STRUCTURE OF BHATKAL TOWN

According to 1991 census, the total work force of Bhatkal town was 6919 which is 21.98 per cent of the total population. The remaining 24,427 peoples are non-workers and 132 persons are marginal workers. Out of the total working population, very high percentage (47.59%) of workers are trade and commerce, 28.34 percent in other services, 8.08 per cent in other than household industrial activities, and 5.01 percentage as transport-storage-communication. Less than 5.00 per cent of workers are engaged in each of the construction, cultivators, household industrial activities, agricultural labourers and livestock, forestry etc. (See table No. 6.14). The above analysis indicates that the economy of Bhatkal town depends on trade and commerce and other services.

EXISTING LAND USE OF BHATKAL TOWN

Bhatkal town has totally 315.76 hectares of municipal area, out of which 289.66 hectares is developed (91.73 per cent).

Table 6.15. Existing land use of Bhatkal Town (1991)

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Land use Categories</th>
<th>Area (in hectares)</th>
<th>Percentage to the developed area</th>
<th>Percentage to the Municipal area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Residential</td>
<td>212.95</td>
<td>73.52</td>
<td>67.44</td>
</tr>
<tr>
<td>2.</td>
<td>Commercial</td>
<td>7.06</td>
<td>2.44</td>
<td>2.24</td>
</tr>
<tr>
<td>3.</td>
<td>Industrial</td>
<td>0.45</td>
<td>0.15</td>
<td>0.14</td>
</tr>
<tr>
<td>5.</td>
<td>Parks, Playground and open space</td>
<td>3.53</td>
<td>1.22</td>
<td>1.12</td>
</tr>
<tr>
<td>6.</td>
<td>Transport and Communication</td>
<td>38.53</td>
<td>13.30</td>
<td>12.20</td>
</tr>
<tr>
<td>7.</td>
<td>Total developed area</td>
<td>289.66</td>
<td>100.00</td>
<td>91.73</td>
</tr>
<tr>
<td>8.</td>
<td>Vacant and water sheet</td>
<td>26.10</td>
<td></td>
<td>8.27</td>
</tr>
<tr>
<td>9.</td>
<td>Agricultural land</td>
<td>-</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>10.</td>
<td>Total Municipal Area of Bhatkal town</td>
<td>315.76</td>
<td></td>
<td>100.00</td>
</tr>
</tbody>
</table>
MANGALORE CITY URBAN MORPHOLOGY (1991)

INDEX

- RESIDENTIAL
- COMMERCIAL
- INDUSTRIAL
- PUBLIC AND SEMI-PUBLIC
- PARKS, PLAY GROUNDS AND OPEN SPACES
- TRANSPORT AND COMMUNICATION
- NON-DEVELOPED AREA

Fig No. 6.4
KARWAR TOWN
URBAN MORPHOLOGY (1991)

INDEX
- RESIDENTIAL
- COMMERCIAL
- INDUSTRIAL
- PUBLIC AND SEMI-PUBLIC
- PARKS, PLAY GROUNDS AND OPEN SPACES
- TRANSPORT AND COMMUNICATION
- NON-DEVELOPED AREA

Fig No. 6.6
BHATKAL TOWN
URBAN MORPHOLOGY (1991)

INDEX
RESIDENTIAL
COMMERCIAL
INDUSTRIAL
PUBLIC AND SEMI-PUBLIC
PARKS, PLAY GROUNDS AND OPEN SPACES
TRANSPORT AND COMMUNICATION
NON-DEVELOPED AREA

Fig No. 6.7
1. **Residential Use**: It is observed from the table (No. 6.15) and figure (No.6.7) that the total area under a residential use which accounts for 212.95 hectares (73.52%) of the total built up area. Heavy concentration is along Sultan Street, main roads, Nehru road, Basthi road, Ratha bheedi road and heart of the Bhatkal town. Development trend of residential areas is found in the south-western part and along National Highways. Intensity of development varies from wards to wards in the municipal area. There is also heavy concentration of population in the old town area i.e., Susugadi village and the new development are in Tali and Venkatpur villages. In the old town the residential houses are old and substandard. Recently new residential extensions are being developed at the north and south of Bhatkal town. Totally 4,067 households are residing in 3,554 houses. But the overall density of population in the entire town is 100 persons per hectare. Even if we exclude the area used for vacant and water sheet, the density is about 100 persons per hectare. However, the density of population in the oldest part of the town is more than the new residential extension. In older parts of the town the irregular, substandard and highly congested houses are observed and they are constructed in traditional style with local available building materials like laterite, stone and wooden roofs and tiles. There are also houses of thatched sheds and zinc iron sheet. But in the new extension area buildings are constructed by stone, bricks and R.C.C. roofing with modern architectural style.
2. Commercial Use: It is revealing that the area under commercial purpose is 7.06 hectares, which is 2.44 per cent of the developed area of the town. The major commercial activity Bhatkal is concentrated in old town and new commercial developments are coming up along the National Highway. The commercial encroachments in the market area is significant. Developmental trends of commercial activity at the heart of the town particularly along main road and National Highways are found. While some of the retail shops are located in the interior of residential area. Hence, the older part of the town has been very liberal in permitting shops all along the main roads in a ribbon fashion. In fact the main road is highly congested and creates traffic bottlenecks and unhealthy environment. The population of the new residential extension generally has a higher standard of earning. But, they do not have the required shopping facilities. Hence, a central business district has grown naturally in the old town area.

3. Industrial Use: The area under industrial use in the town is 0.45 hectares, which is 0.15 per cent of the total developed area. The industrial activity is practically nil in the town except some small scale units like flours and saw mills.

4. Public and Semi-public Use: The area under public and semi public use is about 27.14 hectares constituting 9.37 per cent of the developed area. Major public building such as Assistant Commissioners Office, Taluk Office, Court Building, Hospital, Schools and Mosques are concentrated in the heart of the town and nearer to Bus Stand. Some Government offices are
located in the rented buildings. Water supply of the town is driven from Kadavinkatti dam built across the Venkatpur river. The electricity is supplied from Sharavathi Hydro Project. The underground drainage system in the town is still progressing.

5. Parks, Play Grounds and Open Spaces: Maintained parks, play grounds and open spaces account for 1.22 per cent of developed area (3.53 hectares). The Bhatkal town lacks in well maintained parks. There is only one play ground attached Engineering College. Open space is very less in the older residential part of the town, whereas in new extension it is available. In the extension area, roads are wider and open space is also seen around the houses, but it is visa-versa in older part of the town.

6. Transport and Communication: The area under this use covers 38.53 hectares which accounts for 13.30 per cent of the total developed area. The Bus Stand is located in the heart of the town and there is a lot of congestion due to insufficient space. National Highway is passing through the middle of the town, causing many traffic problems. Bhatkal is also connected by Konkan Railway Broad gauge line. Passenger and goods trains pass through the town daily. The existing bus terminal facilities are in adequate with respect to movement and parking of vehicles as well as passenger amenities. Many of the road need to be widened. Nearly 50% of the road length doesn’t have surface treatment. As Bhatkal is located in coastal area the rainfall is heavy and the mud roads become slushy and unsuitable during rainy season. The communication centres like post, telegraph offices are situated in the C.B.D. of Bhatkal town.
Non-developed Area: this category consists of vacant land, water sheet and agricultural land of the town. These account for about 8.27% hectares of municipal land. Vacant land is much in the extension area and outer fringes of the town particularly north-western and south-western part of the town. One stream is flowing through the town as such the slum covered vast area on the northern part of the town. The agricultural land is seen at periphery area of Bhatkal town which will be of immense use for the future development of the town.

The present land utilization pattern of Bhatkal town resembles very little like multiple nuclei Theory. (See Fig. No.6.9).

COONDAPUR is the class III town in Karnataka coast with a population of 28595 as per 2001 census. The headquarters town of the taluk and of the Sub-division of the same name, is about 96 kms. to the north of Mangalore. The name of the town can be traced to the Kundeshvara temple built by Kundavarma in the vicinity of the Panchagangavalli river. Coondapur is also described as the “town of the sun”. It has another old temple, that of Mahalingeshwara. It was the principal port of the Rajas of Baindoor who came to prominence after the decline of the Vijayanagara power. The Portuguese settled here the 16th century and built a fort. A well-built redoubt constructed by Haidar Ali commands the entrance to the river. After the fall of Tipu Sultan in 1799, the town was taken over by the British. There was once a tank of fresh water near the town in which was bred a special type of fish said to have been exclusively reserved for Tipu Sultan.
The taluk of Coondapur is well blessed with more rivers than any other taluk of South Kanara. It has also a 28-mile long sea coast on the western side extending up to its northern boundary. The proposed bridge at Gangolli is going to be the longest in the district. The Coondapur taluk has played a significant role in evolving the Yakshagana dance-drama of the northern school known as bodagu-tittu. Coondapur is the only taluk of the district where bisons are found in its forests. They are very powerful animals and move in herds of ten or so. Leopards sometimes prove destructive to livestock and wild boars to agriculture mainly in the forest areas.

Muddana (Poet Nandalike Lakshminarayanappa) wrote his memorable works while serving in a school here as a drill master. The place has a notable Catholic place of worship which is called the Church of Our Lady of Most Holy Rosary. It was originally built on an inam land donated the ruler of Ikkeri (Bidanur). It has since been rebuilt twice. The place is noted for manufacture of tiles. It has a higher secondary school, a college, a hospital and a travelers' bungalow. The sisters of the Apostolic Carmel maintain an orphanage and a girls schools here. The climate of the area is very healthy.

KUMTA is the class III town in Karnataka coast with a population of 34,498 as per 2001 census. It is also a taluka headquarter. Town has a temple dedicated to Kumbheshvara and takes its name from this deity. Once upon a time this place was famous for its export of fine cotton and flourished as a trading centre. The town is famous for sandal wood carving the handicraft practiced by the Gudigars.
Kumta was a sub-divisional headquarters (80 km from Karwar) during British time and it is a place of considerable antiquity. Kumta was in Ankola taluk and later in around 1862 it became a taluk head-quarters. It is believed that the place name is derived from the local deity Kumbhateshwara. An inscription of 1360, has referred to the place as Kumbateya Nadu. In a Portuguese record of 1530, it is mentioned that the ‘Kombetath’ river is paying a tribute of 200 bales of rice to the Portuguese. In 1758, the French scholar Anquetil de Perron mentions the place as Komenta Tipu is believed to have burnt the place twice to punish its merchants. In 1801, Buchanan calls it Cumty, a place formerly of some note. Though Kumta was a minor port, this place was one time a busy dockyard for the export of cotton from northern Karnataka called Cumty cotton in England. There are temples dedicated to Kumbhateshwara, Shantikaparameshwari (also called Kamakshi), Gopalakrishna, Cauvery Kamakshi, Venkataramana, Mahalasa Narayani (gramadevata), Jattiga, etc. The Kumbhateshwara temple located in Bastikeri, though ancient, is renovated from time to time. Now, its major part is built in RCC. It has fine statues of Ganapati and Mahishamardini. The Shantikaparameshwari temple is also old and at the back of this temple there is a big ant-hill as the object of worship. The bandihabba is held in this temple during February-April. The Mahalasa Narayani temple is built in typical Goan style and has excellent kavi (ochre) paintings of a very high order depicting traditional themes from Mahabharata and Ramayana and motifs like Surya and Chandra Mandala. The navaranga ceiling has delicate wood-carvings of fine
floral and geometrical patterns by the local Gudigars. The car festival of this
temple is held during Shravana for seven days when the car will be specially
decorated with banana tree trunks which will be partially filled with varieties of
flowers. The car festival of the Venkataramana will be held on rathasaptami
day every year.

Near the Kumbhateshwara temple is an ancient Jaina basti, but recently
renovated. The Parshwanatha statue in seated posture in the garbhagriha of
over one metre in height is Chalukyan with an inscription engraved on its
pedestal which states that the image was installed by one Mukundadeva. Atop
the shrine in the shikhara there is another shrine in which a statue of Adinatha
in white marble is installed. It is described as found at Duggur near Karki. On
the left side of the main basti, there are five nishidhi stones, installed in a shed
with inscriptions on them. The first slab (from left) dating back to the days of
Kadamba Vira Kavadeva and records the death of one Saatipeeda, the son of
Vardhamanasetti and the disciple of Chandrakirti Bhattaraka. The second slab
dated 1344 AD states that one Nagachandradeva belonging to Desiyagana died
by aradhanavidhi. The third slab of the days of Kadamba Kavadeva is damaged
and records the death of one Setti by Samadhi. The fourth slab records the
death of Santavve wife of Sankara Chamupa and the fifth slab records the death
by samadhi, of Kanchaladevi, the queen of Tribhuvanabira of the (Chandavara)
Kadamba family in 1205—06. There is another damaged inscription on a slab
standing in a field dated 1360 AD and it seems to record that one chief Vira
BasavaIyya who belonged to the race of Jayakeshi and styled himself the lord
of Banavasipura and makes a land grant in the village of Chattarige (Chitrigi) in Kumbateya Nadu. Interestingly within the compound of the Shantikaparameshwari temple there is a slab with a Chinese inscription describing it as a tomb stone of Xhang Wen-weng who came from Guang-dong (a place in South China) and established a new settlement. The place has St John’s church built in 1857 and renovated in 1884, 1905 and 1945. At Nellikeri on the Kumta-Ankola road in an enclosure there are tombs of two Englishmen engineers, named John Albert Cope of London (died on 11-4-1880) and Henry Jassori of Warwick (16-5-1877) the former of the P W D and the latter of the Wests Company, cotton ginners. There is also a Protestant church called St Thomas church. There is a mosque (old) which is renovated. Baad (3.2 km from Kumta), a place located in between the Aghanashini river and the Arabian Sea is a fine picnic spot. It has a small hillock, standing on which one can witness the beautiful scenery of Kumta town with the sea at the background. There is a recently renovated Chamundeshwari temple worth visiting. There is an old inspection bungalow at Kumta built on a small hillock, presenting beautiful view of sea. Kaltigudda (17 km from Kumta) is a beautiful hill station which is about 760 metres high and has good potentialities for development as a fine tourist resort. formerly, British officers from Honavar used it as summer resort. There is a ruined travellers’ bungalow.

BAIND00R (T. Coondapur) is the only class IV town in Karnataka coast with a population of 16,488 as per 1991 census. It is situated at a distance of about 30 kms. to the north of Coondapur. In an inscription of the 5th century, it is
called 'Baidur' and 'Bindupura'. It was a part of Barakuru province and the Haduvalli principality. It was once a chief town of the Alupa rulers. After the decay of the Alupas by about the 14th century, the town came under the control of a Jaina princess named Bairadevi of Haduvalli in North Canara whose family was finally subdued by the chief of Baindoor. Judged by the inscriptions in the temples Baindoor appears to have been a place of considerable importance in the time of the Vijayanagara kings and probably at a much earlier date also. Barbosa (1514) mentions that this place was exporting rice.

It is said that this place was named as Seneshwara by a chief. The Seneshwara temple of Baindoor, built in the Chalukyan style and belonging to the eleventh century AD., is worth-visiting. The images of the deities resemble those of Belur and Halebid. There is a black stone Nandi in the mantapam which has no platform or jagati and belongs to the pre-Hoysala period. A small shrine near the outer wall of the gaibhayagiha has images of Bhairava, Mahadev, Chamundi and Ugra-Narasimha. As we enter the navaranga from the eastern side, we see four polished pillars which support the ceiling. The sculpture of the Ashtsdikpalakas and Nataraja very fine. There are small cells which have Aditya, Shankaranarayana, Saptamatrikas, Ganapathi, Mahishasura Mardini, Shanmukha, Keshava, Lakshminarayana and Shivashakti which are about four feet in height. The torana near the mahadwara (main entrance) contains the figures of Shiva Paravati. Brahma-Saraswati, Vishnu-Lakshmi, which are very clear and fine in workmanship. There are perforated screens on both the sides of the mahadwara.
In the sukhanasi, there is an imperfect image of Saraswati, which is about four feet in height. The garbilagriha has the Saneshawara linga and an image of Sadashiva made of five metals. The shikhara of the garbhagriha is like that of a pyramid. In a lithic record of 1360 AD., it is said that Chikka Mallia Dannnayaka, who was the younger brother of Mahapradhana Malaya Dannayaka, donated land to the Seneshwara temple. There are two inscriptions in the temple dated 1507 and 1523 AD. There is a Mastikatte which commemorates a mahasati, at this place, to which devotees present wooden statues when their prayers are granted.

The port of Baindoor is open only to tile coastal trade. The bar at the mouth of the river is known as Kiralva. Sirur, a small coastal village, near Baindoor, is included in the port limits of the latter. The trade of Baindoor is mainly in firewood and forest produce and to a limited extent in fish. The place has a high school, a junior college and a dispensary.

GANGOLLI (T. Coondapur), is the class IV town in Karnataka coast with a population of 12,332 as per 1991 census, about three kms. to the Gangolli north of Coondapur, is a town at the mouth of the river of the same name. Tipu Sultan had a dock here. The port of Coondapur lies actually in this town and the custom house is also at Gangolli. Easy water communication is available from this port to the interior parts of the taluk. There is a light house at Kodi on the Coondapur side. The place hat a high school and a dispensary.
MULKI is the class IV town in Karnataka coast with a population of 16,398 as per 2001 census, was formerly the seat of Savantas of Simantur. The town has the ruins of a palace of the Savantas, the fort built in 1608 A.D. by Venkatappa Nayaka of Keladi and four basadis. The objects of interest here are Durga Parameshvari temple at Sappanad, the Venkataramana temple and the twin temples of Somanatha and Narayana. Local tradition has it that the Durga Parameshvari temple was built by Bappu Hyath, a Mapilla Muslim by faith. Buffalo race called Arasu Kumbala held here every year is an important event in this neighbourhood.

Mulki (T. Mangalore) about 29 kms to the north of Mangalore city, is by the side of the National Highway connecting Bombay with Cape Comorin. It is situated on the southern bank of the Mulki river. Their earlier headquarters was at Simantur about five kms. east of Mulki. Janardanaswamy of Simantur was at family deity of the Savantas. The ruins of their palace and of the fort built by Venkatappa Nayaka of Bidanur in 1608 can still be seen. In front of the remains of the palace in the field called Bakkimaru are the tombs of twenty Savanta chiefs. There are four dilapidated jaina basadis. There are two manastambhas which are in good condition. The manastamhha, which is in front of the Anantanatha basadi at Kotekerri is more elegant and it has inscriptions of about the 15th century AD. on two sides of its prism. The Durgaparameshwari temple at Bappanadu, the Venkataramana temple and the twin temples of Somanatha and Narayana are the other shrines here. About the Durgaparameshwari temple, the following interesting story is narrated; the
temple was covered by the waters of the Mulki river for several years and had collapsed, but the five lingas and the pedestal had remained. One day, while Bappu-Byari, a Mapillai Muslim merchant, was rowing his boat, it struck against the lingas and soon after, the water went down and the lingas were seen. Bappu Byari built a temple for housing them. The place was called Bappanadu after him since then.

Mulki received a large number of Hindus from Goa as a result of the persecutions there and the Savanta chiefs gave them lands for their rehabilitation and also constructed a temple for their worship. The place has a high school, college and a hospital.

SALIGRAMA (T. Udupi) is the class IV town in Karnataka coast with a population of 14,959 as per 2001 census, located about 24 kms. north of Udupi, is on the Udupi-Coondapur Road. It has been a religious and cultural centre for a long time. The temple of Yoga Narasimha here, which faces the west, is believed to have been constructed at first more than a thousand years ago.

ANKOLA is the class III town in Karnataka coast with a population of 26,135 as per 2001 census, was an important centre of trade and commerce in ancient times including the Vijayanagar period. It has the ruins of a fort and of some beautiful monuments of the Hindus, Jains, Christians and Muslims. The famous caves of Honnebail are at a distance of about 8 km from Ankola town. Babruwada, has a statue of Buddha of the Kadamba period. The Ankola town has the tomb shrine of Syed Abdulla Bagdadi. Kurve, a river island near the Ankola town is a pleasant picnic spot.
Ankola, a taluk headquarters and a municipal town (34 km to the South from Karwar) of rich antiquity, is the home of Halakki Vokkals. The place name is derived from a forest shrub ankole (Alangium lamarckii) grown on the coastal hillside and worshipped by the Halakki Vokkals as a totem. An inscription at Belambar of Vijayanagar period (1390) mentions Ankolenadu. Ankola was a taluk centre in 1800 but in 1859, Ankola was made a sub-taluk under Kumta taluk, and in 1880, Ankola was again made the taluk headquarters by adding 21 villages to the sub-taluk. It was a famous trading centre under the Kadambas, Chalukyas and Vijayanagar. Later, it came under Bijapur and under Shivaji. It was under Sonda before Haider invaded and Tipu is said to have destroyed it.

There is a ruined fort ascribed to the Bijapur commander Sharif-ul-Mulk. The KPCC had organised mass Salt Satyagraha here in April 1930 and the place was a centre of No-Tax campaign in freedom movement. There is a Maruti temple inside the fort which has a damaged inscription on a herostone recording the death of a hero and refers to Chandavar Kadamba Basavideva and Kavadeva then ruling from Honavar. The place has temples dedicated to Mahamaya, Aryadurga, Kundodari, Holevattara (Jaina temple), Shantadurga, Kalamma, Dattatreya, Ambarakodla Narayana, Sundara Narayana (built in 1909, main idol brought from Marugadde), Mahadeva (Honnekeri), Vithoba (neat Shanta Durga), Kalabhairava (brought from Aversa) and Kadambeshwara. The Mahamaya and the Kundodari temples were built in the 16th century. The Mahamaya temple (at least 500 years old) has a garbhagriha, an ardhamantapa and a mukhamantapa. The shikhara over the garbhagriha is
domical with a cone at the top. Inside the garbhagriha, an anthill is enshrined as Devi. The outer prakara is spacious and behind the garbhagriha are recently built choultries. It is the kuladevata of many communities of Goan origin including some Christians. The Kundodari temple is a typical coastal style temple which resembles temples of Goa and recently renovated. This too is the family shrine of many Gauda Saraswats. The Aryadurga temple is considerably old and the main deity is said to have been brought from Anjidiv Island. Aryadurga is worshipped as Shakti for prosperity whereas Shantadurga is the gramadevata. The bandi habba is celebrated in honour of Kalamma during March when more than 10,000 people assemble. The Kadambeshwara temple located at Kumbarkeri near Babruwada, is also considerably an old temple. The place has samadhis of following Swamijs of the Parthagali Matha viz., Digvijeya Ramachandra Teertha, the seventh guru and Bhuviyaya Ramachandra Teertha, the 15 guru. Ankola has two mosques, the Jamia Masjid and the one at Kakarmath area. Syed Fatulla Bagdadi is said to have stayed at Ankola. There is a Catholic church locally called the Holy Rosary built in 1700 and renovated in 1983. The Protestant church here is locally called St. Paul's church. The total solar eclipse on 16th February 1980 was between Ankola and Gokarn, and a hillock near the Gokhale Centenary College is named after Miyamoto, the famous Japanese astronomer who came to observe it from the hillock. At Bobruwada (3 km from Ankola) there is a Buddha statue of Kadamba times. There is a stone inscription of Vijayanagara times in a private house dated 1401 recording a gift of land to a choultry at Gokarn by Virupayi,
daughter of one Madanna. The tomb of Syed Fatulla Bagdadi is located near Bobruwada and occasionally urus is celebrated when about 1000 people assemble. There are other two dargahs ascribed to Syed Khasim Quadri and Syed Kamruddin. At Achave near Ankola there is a Gopalakrishna temple and at Marugadde there is an Ishwara temple. At Laksmeshwara, (10km from Ankola) there are three dargahs ascribed to Syed Hasan Shah Quadri, Shah Fata and Shah Mokka and urus is held at the latter dargahs, when nearly 1000 people participate. Basakalgudda on the Ankola coast is another enchanting picnic spot, where is a small natural cave in which there is an outlet of the shape of a cow’s face and water oozes from it. The spot present a panoramic view of the hill in the background.

**HONAVAR** is the class IV town in Karnataka coast with a population of 17,833 as per 2001 census, place of great antiquity, which finds a mention in the travelogues of early geographers. During the mediaeval times also it was an important trading centre and several foreign travellers who passed through the town have described its glory in great detail. The Portuguese opened a factory as well as built a church here during the early 16th century. On conquering these parts, in 1764, Haidar Ali, developed this place as a commercial centre with a naval dockyard. For a brief period Honavar was the headquarters of the district. A spring near the town is regarded a sacred spot and, is known as Rama Tirtha. The town has the temples of Durga, Lakshminarayana, Vithoba and Rameshvara besides the church of San Saldone built about a century ago. The bridge across the Sharavati linking Honavar and Kasarkode is considered
to be the longest in the State. About 8 km to the south there is the famous shrine of Ganapati of Idgunji.

**Honavar** a taluk centre (93 kms to the south from Karwar) is a place on the bank of the Sharavati and a port town, one of great antiquity. It was formerly the headquarters of the district, between 1800 and 1817, and was the headquarters of the Sub-Collector between 1817 to 1862. Honavar was the name of the taluk from 1799 with Haldipur as its headquarters for long. The name might have originated from the plant Honnavari also called tangadi in Kannada (Cassia auriculata, Linn). Several inscriptions have mentioned the place as ‘Honnavura’ and ‘Honninavuru’. The Chandavar Kadambas ruled from here earlier. It was the headquarters of a governor in Vijayanagar times. An Arab geographer Abul Fida (1273- 1331) has recorded the place as Honavar. Later in 1342 the African traveller Ibn Batuta described it as Hinaur. He further says that the town had a nawab, Jamal-ud-din Mohammed Ibn Hasan and that it had a flourishing Muslim population. It came under Gersoppa kingdom as a chief port exporting pepper. In 1498 Timnayya, an agent of Vijayanagar went from Honavar with eight boats to surprise Vasco da Gama, who was resting at Anjidiv island. In 1514 the Portuguese traveller Barbosa calls the place as the good town of Honor. By 1547 the Portuguese started their trade regularly and in 1569 founded their factory at Onor and they continued to trade with the Gersoppa kingdom from here. In 1623 an Italian traveller Pietro Della Valle describes Honavar as a small place on the seashore formed by the arms of two rivers. Haider Ali called the Sharavati the lake of Honawera. He
had his naval yard here. In 1800 Sir Thomas Munro found the place deserted and in 1801 Buchanan explains that Honavar had been demolished by Tipu in 1784, though under Haider it was a place of great commerce. There is a laterite fort at the heart of the town, described also by Pietro Della Valle. Linschoten, the Dutch visitor, speaks of the fort in 1595.

The place has temples of Gopalakrishna, Sharadamba, Venkataramana, Maruti, Sri Rama Mandir, Rameshwara, Durga, Maruti, etc. The Gopalakrishna temple has a recently built stone mukhamantapa which has many granite stone pillars with engravings of Jaina Tirthankaras. These pillars are said to have been brought from Gersoppa. This temple was renovated in 1947. The car festival of the temple is held on akshaya tritiya which attracts about 10,000 people. The Venkataramana temple was built in 1663 by one Ramachandra Mahale, as informed by a copper plate grant now at the Partagali Matha. The annual car festival is held on Sri Ramanavami day when about 8,000 people assemble. There is the samadhi of Yadavendra Titha III, the ninth guru of Kashi Matha within the compound of the temple. The samadhis of the swamis of the Partagali Matha, who were the eighth and eleventh gurus, Raghu Chandra Teertha and Swamy Lakshmikanta Teertha respectively are also located at Honavar. There is a Jogimath here, ascribed to the Nathapanthis. The place has a Catholic Church built in honour of San Salvador and was subsequently renovated in 1801 and 1852. This church is ascribed originally to the Portuguese, who had their factory at Honavar. In the month of November every year the parish feast is celebrated here which attracts nearly 3,000
people. There is the St Thomas Church of the Protestants and also a Jacobite Church recently built. Atop a small hill stands 30 mts tall square column installed in the memory of Col. Clement Hill on 20th January 1845. This monument was set up by the Fourteenth Madras Native Infantry at the instance of the East India Company, in honour of Col Hill who died at Gersoppa while commanding the Mysore Division. (A statue of Col Hill is found at the Trinity Church of Bangalore). There is a park round this. There are three mosques, and the one located in the Jogimath area appears to be the oldest, but renovated of late. There are four dargahs two ascribed to Hazarat Syed Sadat Hassan Shah and Hasham Peer, who migrated to this place from Bijapur. Annual Urus is held in Jamadil Avval and nearly 3000 people assemble. There is another dargah near the harbour ascribed to Peer Gyban Shah and his urus is celebrated in Rabbil Avval when about 1,000 people assemble. There is one more dargah ascribed to Raffik Shah at Kelginapalya (near Sharavati River) and here also urus is held every year when about 1,000 people assemble.

Honavar harbour is primarily a fisheries harbour and a fine spot of tourist importance. The colourful view of the sunset from this spot or from the fort or from Col Hills memorial is really enchanting. Ramarirtha (3 km from Honavar) located on the Honavar-Chandavar road is a pushkarani (tank). The tank which has fifty steps below the ground level is very spacious and the water from a height falls into it from two different points, called Ramatirtha and Lakshmanatirtha. Local tradition claims that Sri Rama, Seeta and Lakshman had a holy dip in this pushkarani. On the left bank of the tank is the
Rameshwara temple, a tiled structure. There is also a shrine of Dattatreya in its premises and the image of which is installed by Sridharaswamy of Varadalli. Pietro Della Valle (1623) has described it as a stream of warm water falling into a beautiful cistern. Hamilton informs us (1720) that thousands of people visit this place every year. Now the local people believe that a dip in his tank can cure certain kinds of skin diseases. There is a Ramakrishna Ashrama under construction near the tank.

TONSE-WEST (T. Udupi), is the class V town in Karnataka coast with a population of 8,160 as per 1991 census, eight kms. from Udupi on Kallianpur-Kemmannu route and situated on the seashore, is a thickly populated town and has a fine climate. This place is well known for coconut cultivation, coir industry and shell lime kilns. The place has two high schools, a junior college, a local-fund dispensary.

BAJPE (T-Mangalore) is the class V town in Karnataka coast with a population of 8,032 as per 2001 census, situated at an elevated place of about 25 kms. from Mangalore city, has the aerodrome. There is a waterfall called “Bajpe waterfall” in the vicinity. The place has a high school and a primary health centre.

HOSANGADI (T. Coondapur) is the class VI town in Karnataka coast with a population of 2,117 as per 1991 census, 42 kms to the east of the Coondapur town is at the foot of the ghats. This place was the seat of a chief who owed allegiance to the Bidanur rulers. General Mathews had attacked the Mysore
army at this place. It has given its name to the mountain pass near it. There are ruins of an old fort and it is said that there was once an inner fort surrounded by a moat. The tank to the east of the fort has a rough stone revetment on all sides and is used for irrigation. There are many basements of houses and circular wells to the east of the tank. Among the old temples here are those of Virupaksha containing several inscriptions on stone slabs. Santeshwara, two of Venkataramana and one of Vitthala. There is a headless stone bull on the road just outside the village. Originally perhaps it belonged to a Lingayata matha or temple which is no longer in existence.

**KADRA** (T. Karwar) is the class VI town in Karnataka coast with a population of 2,563 as per 1991 census, is located at the foot of the Anshi Ghat (32 km from Karwar). There is a Mahamaya temple, a Catholic church and a mosque all recent ones. Near Kadra at Kodsalli, the II stage of the Kali Dam is under construction by the Karnataka Power corporation. During Deepavali, a jatra is held in honour of Mahamaya for 12 days when 2,000 to 3,000 people assemble. The Kali river can be forded till Kadra from Karwar, and this place was a notable transit point in olden days for merchandise coming from sea, especially under the Adilshahis. There was a fort here of the Adilshahis which was destroyed by Sonda Sadashivanayaka in 1705 and its material was used to build the fort at Kurmagad (Island). It was the headquarters of a paragana under Haider.

**MUDBIDRI**, is the class III town in Karnataka coast with a population of 25,710 as per 2001 census, known as Jaina Kashi of the south is noted place of
pilgrimage that attracts Jains from all parts of the country. Tradition is that in about 714 A.D. a Jaina ascetic found a black idol of Parshvanatha in a forest here and built a basadi to enshrine it. In this basadi, known as Guru basadi and also as Siddharta basadi, some of the ancient scriptures are preserved. The attraction here is the Thbhuvana Tilaka Chudamani, which is also known as the ‘Basadi of a Thousand Pillars’ and the Chandranatha Basadi. This was built in 1429-30 A.D. by the Devotees as directed by Devaraya, the governor of Mangalore-rajya. In 1462, Bhairadevi added an elegant mantapa. The life size idol of Chandranatha is made of Panchaloha. This shrine is famous for its beautifully carved pillars. Nagaladevi, the queen of Bhairava Raja is said to have got the huge manasthambha erected in front of the basadi. The town and its vicinity contains 16 more basadis and several jaina tombs. The Chautas, a line of local chiefs, had their capital here and their palace here has four beautifully carved pillars, a handsomely carved wooden ceiling and a wooden screen with fine carving, besides into excellent panels, depicting Navanari Kunjara (elephant ingeniously made out of the bodies of nine women in different postures) and a Panchanari-Turuga (depicting five women forming the body of a horse). Kannada poet, Ratnakara Varni is said to have composed his classic ‘Bharatesha’ at this place.

Moodabidri (T. Karkal), about 35 kms. north-east of Mangalore, literally means “eastern bamboo area” and it is likely that luxurious bamboo forests flourished near this place formerly. It is situated at a beautiful spot in the midst of hills. It is famous has the “Jaina Kashi” of the South. It is sanctified by the
stay of great saints and poets. Jains from all parts of India come here to worship in the famous 18 Jaina basadis that are dedicated the memory of the Teerthankaras.

According to a tradition, a Jaina ascetic came over to Moodabidri in the 8th century and there he saw a tiger playing with a cow and thought the place to be of significance. He found a black granite image of Parshwanatha (one of the 24 Teerthankaras) in the forest here and built a basadi at the spot and installed it there in 714 A.D. Hence this basadi is known as the Guru Basadi and as some scriptures are preserved here, it is also called the Siddhanta Basadi. It is also known as Hale (Old) Basadi. There are 35 images of various heights here.

The biggest basadi at Moodabidri is the Tribhuvana Tilaka Chudamani Basadi also known as the “Basadi of a Thousand Pillars”, Chandranatha Basadi and Hosa (new) Basadi. It was built in 1429-1430. The Jaina devotees of Moodabidri constructed this basadi as directed by Devaraya Wodeyar who was the governor of Mangalore-rajya. Later in 1462, Bhairadevi added the elegant mantapa called after her. The image of Chandranatha, which is 6½ feet in height, is made of an alloy of five metals. The monument is famous for its beautiful carved pillars with miniature artistic pillars carved on them.

Baikanatikari basadi, (13) Kere basadi, (14) Padu basadi, (15) Shri Mathada basadi, (16) Jaina Pathashaleya basadi, etc.

Nagala Devi the queen of Bhairava Raja, erected the Manasthambha, a huge monolith of a height of 50 feet, in front of the basadi. There are elaborate carvings on the sides of the plinth of the basadi which, inter alia, has the figures of a giraffe and a dragon; this is perhaps indicative that the Jaina merchants of those days had extensive trade contacts.

The pillars in the room, which adjoins the sanctum, have carved figures of chauri-bearer, a man beating a drum, man riding on a gaily -caparisoned elephant, a human garuda with wings, etc.

After the main entrance, there are Gopuradwara Mantapa, Bhairadevi Mantapa, Chittradevi Mantapa, Namaskara Mantapa, Teerthankara Mantapa, Lakshmi Mantapa (also called Gandhakuti Mantapa) and Garbhagriha Mantapa. There are also images of Vedic and goddesses on the stone pillars of the Bhairadevi Mantapa and Chittradevi Mantapa.

There are also many tombs of Jaina priests, only two of them standing apart from the rest being those of two wealthy Jaina merchants, These are lofty erections consisting of several storeys built of carefully cut laterite stones. They were originally ornamented with tall granite finials, most of which have now fallen down and have been set up in the compounds of temples or in private houses as curios.
The Chautas, a line of local chiefs, had their capital at this place. There descendants live in the old palace here. The Čauta palace here looks like an insignificant building compared with the magnificent temples. But though it is plain and unassuming outside, the sculptures inside are of a superior order. The walls were originally covered with paintings, which do not exist at present. The objects of interest in this palace are the four beautifully carved wooden pillars, a handsomely carved wooden ceiling, a wooden screen with fine carvings. There are two excellent panels of carvings on the pillars, namely the Navanari-Kunjara and Panchanari-Turaga. The first one is a composite carved elephant ingeniously made of the bodies of nine women in various postures, surmounted by a hunter with a bow and arrow; the second one is also a similar piece of wood carving depicting five women forming the body of the horse with a rider on the animal.

The great Kannada, poet, Rathnakaravari, is said to have composed his immortal classic “Bharatesha Vaibhava” at this place.

However this Moodabidari town of 1991 census has been joined with Mangalore town as an urban agglomeration as per 2001 census.

The urbanization in Coastal Karntaka is benefitted by various industries, communications, ports and its activities, trade and commerce. Therefore, it is necessary to know about them at length.
INDUSTRIES:

The coastal strip is dotted with numerous units engaged in the manufacture of the tiles and bricks. Bauxite deposits are found at a few places like the Paduvare area near Baindooru, Mudgalpore, Dodda, Sampaje, Kalamandakar. The total quantum of these deposits occur in the form of beds, in the fringe area of the back-waters and also along the river banks. Lime shells are used in the manufacture of quick lime, white distemper and also cement. An estimated reserve of 12 thousand tonnes of silica sand is available along the sea coast, particularly at places like near Malur, Kaup, Tonse, Uliaragoli and a few other coastal villages of the Dakshina Kannada and Udupi district. This sand is useful for moulding purposes and also in the manufacture of sodium silicate. Large quantities of laterite and granite are being quarried and dressed every year, for use as building material.

At present the most important large scale industry of the southern coastal Karnataka is the Mangalore Chemicals and Fertilizers an enterprise which involved an investment of Rs. 68 crore. The factory went into production in 1976. The Mangalore city is famous for the manufacture of tiles, which have over the decades come to be known as the 'Mangalore Tiles'. The first tile factory to be started in this area was set up in 1865 by the Bassel Mission. In addition there were 26 tile factories at other locations. These factories have been supplying the tiles to different parts of the country and also to countries such as Sri Lanka, Burma, East Africa, Australia etc. Natural clay eminently suited for the production of tiles is abundantly available in the coastal strip.
COMMUNICATION:

The new Mangalore harbour is an all weather major port, which provides for three berths alongside to cater to (i) general cargo, (ii) iron and manganese ore, (iii) raw materials (imports for fertilizers factory etc.), and (iv) export of finished goods and an oil jetty for handling naptha and petroleum products. This has been developed in two stages and the second stage included facilities such as those for the export of Iron ore concentrates from Kudremukh region and an exclusive iron ore berth for bringing in bulk ore carriers of 60000 DWT with a draft of 2.5 m, deepening of the lagoon and approach to the port. The completion of this second stage of development in August 1980 marked the New Mangalore port as the deepest inner harbour in the country. From 1980, the Shipping Corporation of India has started a regular container service to western countries. During 1980-81, the port handled a traffic of 962000 tonnes. Apart from this New Mangalore port is an open roadstead port and steamers anchor about three to four km off the shore, in depths of five to six fathoms. The backwaters are used by laden sailing vessels of upto 150 tonnes. This is a seasonal port and as consequence of the commissioning of the New Mangalore port, there is hardly any steamer traffic at the old port now. However about 1200 sailing vessels involving a cargo of about 2 lakh tonnes continue to use this port.

Malpe port is of great antiquity and is situated at the confluence of Udyavara river. This has a along been an active fishing centre and in 1976, the Government of India sanctioned an amount of Rs. 4.26 crore for establishing a
fishing harbour here with FAO aid. This port handled a cargo of 12870 tonnes during 1978-79. Gangoli that is Coondapoor, Hangarakatta and Baindure are the other ports. The coast has a few navigable rivers as well. The inland waterways consist of estuaries and backwaters also. The river basin of Gangoli consists of four rivers and one backwater flowing into a broad estuary. In this basin, the lengths of the navigable waterways in the north are as follows: Halady-24 km upstream, Kubja-18 km, Chakra-15 km, Kollur-16 km and the Kodi backwater in the South 4 km at high tide. The Swarna and the Sita rivers are navigable for about 26 km each upstream during high tide. Udyavar is navigable for 15 km whereas Mulki and Pavanje are navigable for about 11 km and 6 km respectively. Gurupur and Netravati are also navigable. The total navigable length of the water ways adds up to about 214 kms. Among the 27 districts of the State, Dakshina Kannad enjoys the distinction of having an all weather major port, about half a dozen minor ports and inland waterways which together cover the highest navigable length. Ports and waterways are of considerable significance in the economy of the coastal Karnataka.

In the matter of road communications and transport facilities, southern coastal region is fairly well advanced especially in the southern coastal strip where all the rivers and streams have been bridged and the west coast highway has now become a reality. In the interior Malnad tract too, the recent decades have witnessed a rapid development and part of this may be attributed to the formation of the Hassan-Mangalore railway line and the Kudremukh iron ore project, besides the implementation of the community development
programmes. The broadgauge railway line, constructed in the last few years has geared up economic development in coastal Karnataka to transact with rest of the India.

TRADE, COMMERCE AND EXPORT IN COASTAL KARNATAKA:

The items imported generally cover raw materials and also essential commodities like food grains, sugarcane, cloth, edible and non edible oils, wood, cotton yarn, cement, iron. The Items exported include beedies, fish and fish products, cashew nuts, tiles, and bricks, handloom cloth, coir products, pepper, cardamom, cut sizes of timber, plywood, tiles, paper, ferromanganese alloys etc. Likewise the commodities manufactured in coastal towns cover beedies, tiles and bricks, cashew, handloom cloth etc. A tabulation of the most important commodity reported under each of these three heads, throws up the following picture. The most important commodity imported happens to be tobacco powder and beedi leaves in the case of 16 towns. Timber, clay and cashew in the case of two towns each, aluminum sheets, cotton yarn, rice, coconut, non-edible oils and granite stones in the case of one town each. The most important item manufactured in the towns happens to be beedies in the case of 10 towns, tiles in the case of 4 towns, cut sizes of timber in 3 towns, canned fish and cashew kernel in two towns each; and aluminum vessels, plastic goods, handloom cloth, coir products and iron (steel) fixtures in one town each. Likewise, the most important commodity exported from towns happens to be beedies in the case of 7 towns, tiles and bricks in 5 towns, cashew kernel, handloom cloth, fish and fish products in the case of 3 towns
Tourism in Coastal Karnataka

Malpe, the port town near Udupi, is situated at the south of Udyavara river amidst fascinating natural settings. There are several rocky islands to the west of the town and, one of these, caned Daria Bahadurgad is famous for its export of processed fish to foreign countries. The fortifications of this island are attributed to Basavappa Nayaka of Bednore. St. Mary’s isles are a group of small islands lying north of the Malpe port. Vaico-da-Garna landed in 1498 at one of these islands which he called El Pardon de Santa Marie. This set of islands hold out possibilities for being developed into a popular holiday resort. The Malpe town is known for its temples of ‘Balarama’ (enshrining an idol with six faces), Ananteshwara, Adabandeshvara and Shankaranarayana (enshrining a double linga). The scenic beauty of the place attracts most of the tourists, visiting to Udupi. The tourism all along the coast has vast potentiality for development of beach tourism at Surtkal, Karwar, Gokarn, Murdeshwar, Malpe, Mangalore and Kundapur etc. Besides these, the entire districts of Uttar Kannada, Udupi, Dakshina Kannada and adjoining districts like Shimoga and Chikkamagalure having been parts of green forest belt of western ghat have
ever lasting dynamic potentiality of tourism. Therefore if tourism is developed on vast scale in such green forest belt then it will have positive impact on the growth of urbanization in Coastal Karnataka also.