

Morphological Growth of Sri Vijaya Puram (Port Blair) Town in Andaman and Nicobar Islands

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Abstract

The contemporary world is an urban world. This is apparent in the expansion of city and urban area and the extension of its influences across much of the habitable surface of the earth. A city is a man-made habitat consisting of various functions. These functions occupy the vast area of the city used for these activities. This structural form is defined as morphology. The morphology of a city undergoes transformation over time due to a variety of reasons.

Keywords: Urban, city, morphology, function, development, congestion.

Introduction

Morphology is the description of functional zone of their nature, their relative disposition and their social interdependence that constitutes a geographical analysis of a city or urban area. Urban morphology refers to the study of the physical form and structure of cities. It is an amalgamation of insights from various disciplines including geography, architecture planning and social sciences. By evaluating the interplay between the built environment and socio-economic forces, urban morphology elucidates pattern and processes shaping the spatial configurations of cities.

The city is a dynamic organism, constantly in process of evolution. This evolution involves both a modification of long established functions and the addition of new functions. Three major transformations have altered the course of human life (Michael, 2009). The first was the revolution that led to the development of agriculture, the second was the pre-industrial revolution that brought cities into being and the third was the industrial revolution of the eighteenth and nineteenth centuries that created the urban industrial forerunners of our present cities.

The city is an expression of man's mind and all attributes of his personality, religious, social, economic and political are reflected in it. Creation of feeling of living at one place, city, is a growth like that of a crystal reproducing the forces inherent in the atom that make it (Bansal, 2010). Urban morphology as a distinct field of study, first germinated in late 19th and early 20th centuries. However, the underpinnings of the discipline trace back to ancient civilization. The planned cities of the Harappan civilization, the gridiron plan of Roman cities or the organically evolved medieval cities, all reflect an implicit understanding of what we now recognise as principal of urban morphology.

In the modern academic landscape two schools of thought emerged predominantly in the study of urban morphology- the Italian school led by Saverio Muraton and the British school steered by M.R.G.Conzen.

While the Italian school focused on the historical fabric of the cities and viewed the city as a living organism, the British school on the other hand, emphasized the geographical aspects of urban development, analyzing the patterns of land use and building forms over time (Sakhi & Manita, 2024). A number of works on the physical form of cities were published at the end of 19th century. Fritz (1894) offers a comparative study of German cities based on their plan while Schluter (1989) developed Fritz's line of research offering both macro and micro scales of analysis. Apart from these, the works of Smailes (1967), Singh (1980), Dutta (1971), Singh (1975), Singh (1962) and Nangia (1976) etc have provided a great base to the subject matter of urban studies and urban geography.

In the 20th century, urban morphology experienced a renaissance as urban issues gained prominence against the backdrop of rapid urbanization and industrialization. The discipline began to incorporate insights from related fields such as sociology, environmental science and economics evolving into an interdisciplinary domain. Today, the field of urban morphology continues to be an essential pillar of urban studies contributing significantly to the sustainable planning and development of our cities.

Study Area

Andaman and Nicobar Islands are the sub aerial expression of the Andaman-Nicobar ridge separating the Andaman Sea from the Bay of Bengal. These two seas are connected to each other through prepares channels- Ten degree channel and Great channel. The Andaman and Nicobar Islands are located between 6°45' N and 13°41' N latitude and 92°12' E and 93°57' E longitude with an area of 8249 km². Sri Vijaya Puram* (earlier known as Port Blair), the capital of Andaman and Nicobar Islands is situated along the south east coast of South Andaman lying at a distance of 1248 km from Kolkata and 1184 km from Chennai. The port enjoys a strategic location. The line of 11°41' N touch the northern boundary of the town and the longitude 92°46' E passes through the eastern fringe of the town with an area of 41.223 km² (fig.1).

Geologically, the town is composed of thick Eocene deposits, sediments on Pre-Tertiary Sandstones, shale's and lime stones. The sandy soil along the cost consists of corals while the lower slopes of valleys have clayey loams. The climate of the region is warm and humid with an average temperature ranges 25°C

* The name "Port Blair" has been renamed as "Sri Vijaya Puram" vide A & N Gazette notification no. 99/2024/F.N.M/10/2023-Estt-A & C-AC-AN-part (1) dated 14th September, 2024.

Location Map: Sri Vijaya Puram (Port Blair)

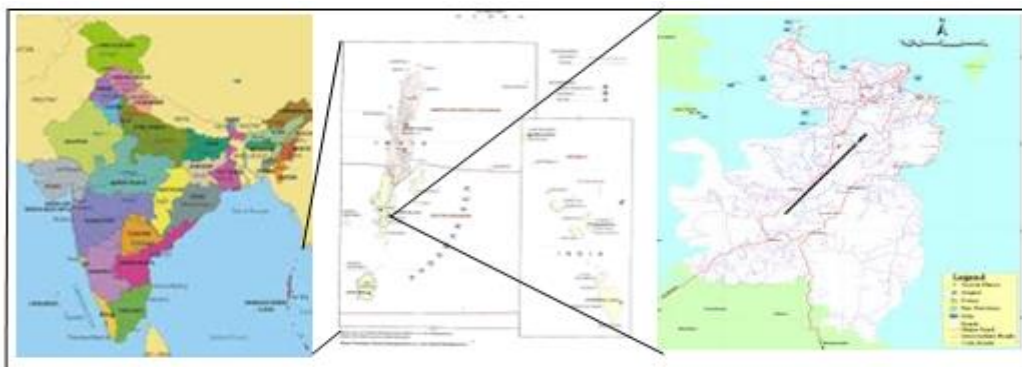


Fig. 1 to 32°C (fig.2). Relative humidity is high throughout the year and the region receives an average annual rainfall around 300 to 350 cms (fig.3).

Sri Vijaya Puram: Temperature (in °c) 2023

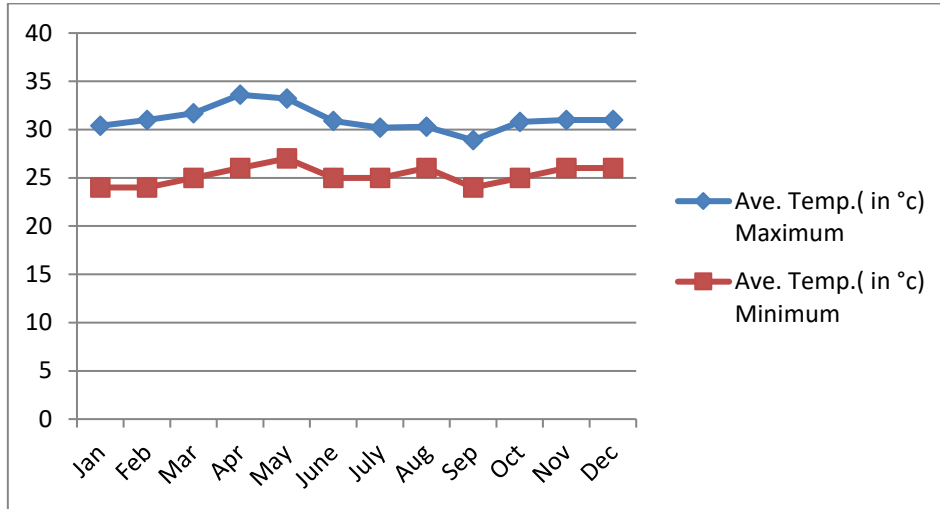


Fig. 2

Data Base and Methodology

The study is based on secondary data. The data pertaining to morphological growth of Sri Vijaya Puram town has been collected from the office of the municipal board and APWD. The data on demographic characteristics has been collected from the census reports while the information pertaining to climatic

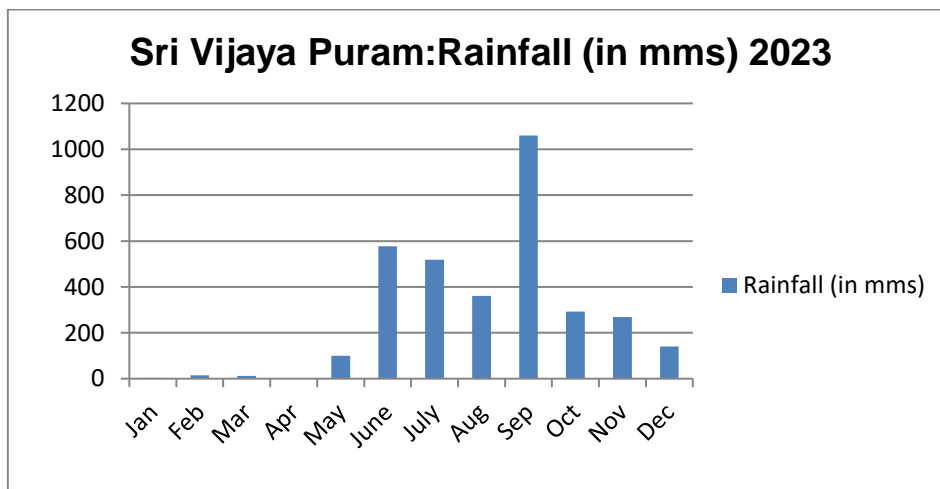


Fig. 3

characteristics have been collected from Indian Meteorological office Sri Vijaya Puram and statistical hand books. The collected data has been analysed by using various statistical techniques and has been represented by using various cartographic techniques.

Results and Discussion

Historical Growth: Located on the trade routes from India to East Asia, the Andaman and Nicobar Islands groups have been known from earliest times. The 7th century Chinese Buddhist monk I-Ching, the Arab travellers of the 9th century and Marco Polo are among those who mentioned the islands. The British first surveyed the Andaman Islands in 1789 in search of a place to establish a penal colony for

offenders from British India (Master Plan for Port Blair, 2011). Such a colony was established in 1790 but was abandoned just a few years later. In the mid 19th century, concern over native attacks on shipwrecked crews and the need for a penal settlement after the Indian mutiny led by the British to return to the Andaman. In 1858, they founded a new penal colony named Port Blair (now Sri Vijaya Puram).

The population of the region was greatly changed by the settlement of convicts from the mainland and beginning in the 1950s of numerous refugees. Japanese forces occupied Andaman and Nicobar Islands from 1942 to 1945. After the British recaptured the islands, the penal colony in the Andaman was abolished. Administration of these islands was passed to India when it gained independence.

A severe earthquake struck the Andaman and Nicobar Islands in 1941 in general and the Ross Island in particular where the administrative headquarters of Port Blair settlement were located. The intensity of the earthquake in Ross Island was so high that it compelled the then Chief Commissioner and other administrative heads of the penal settlement to shift the administrative headquarter from the tiny island to the main island of South Andaman. This shifting brought about a fundamental change in the growth of the town.

Whatever yardstick is used to distinguish between an urban settlement and rural settlement, it has been observed that the urban population world over is growing more rapidly than the rural population. The census organisation of various countries classifies their population into rural and urban population on the basis of the definition of an urban centre, which takes into account the local conditions. In India, all statutory towns, i.e. all places with a municipal corporation, cantonment board or notified area committee etc are treated as urban. In addition to these places which have- i) a minimum population of 5000; ii) 75% of their male working population engaged in non-agricultural activities and iii) a density of population of at least 400 persons per sq km, are also treated as urban.

The definition of an urban area in India remained unchanged. However, in 1981 while calculating the proportion of workers in non-agricultural activities, the workers in occupation of fishing, livestock, hunting, plantation and orchards have been considered as agricultural activities unlike the census of 1961 and 1971 when these activities were considered non-agricultural activities (census of India, 1981). In addition, the directors of census operation are also giving discretionary powers to classify marginal cases as rural or urban taking into consideration the local circumstances.

Sri Vijaya Puram is the only statutory town in Andaman and Nicobar islands which was recognised as such for the first time in 1951. The present site of the town was selected by Lt. Archibald Blair, a marine surveyor of the Royal navy. The site was selected keeping in view the advantage of safe harbour for British ships which could take shelter in bad weather during voyage on one hand and on the other the site was more or less in the middle of the island chain.

The nucleus of Sri Vijaya Puram town was the habitation of Chatham Island. With the swelling of population, the habitation crossed the boundaries of the tiny island of Chatham and spread over to nearby areas of main South Andaman Island which is separated by shallow sea water. In course of time, many a small and big villages came into being in the main island of South Andaman.

In 1951, Sri Vijaya Puram town was formed by comprising 9 villages viz Chatham, Haddo, Buniabad, Phoenix Bay, Junglighat, Aberdeen Village, Aberdeen Bazar, South Point and Shadipur having an area of 7.87 km². In August 1974, the villages of Lambaline, Minne Bay, Nayagaon, Dudhline, part of school line, Corbyn's Cove and Good Will Estate were included in the municipal area. Thus the area of Sri Vijaya Puram increased from 7.87 km² to 14.47 km² in 1974 (fig.4).

In the present form of administration, the municipality occupies a very prestigious position next to the government in urban area and as such their responsibilities are too great and numerous. The Andaman and Nicobar Municipal Board Regulation 1957 was promulgated by the President of India and published in the Gazette of India on 11th March, 1957. Sri Vijaya Puram (Port Blair) town came into being in 1951 but till the promulgation of

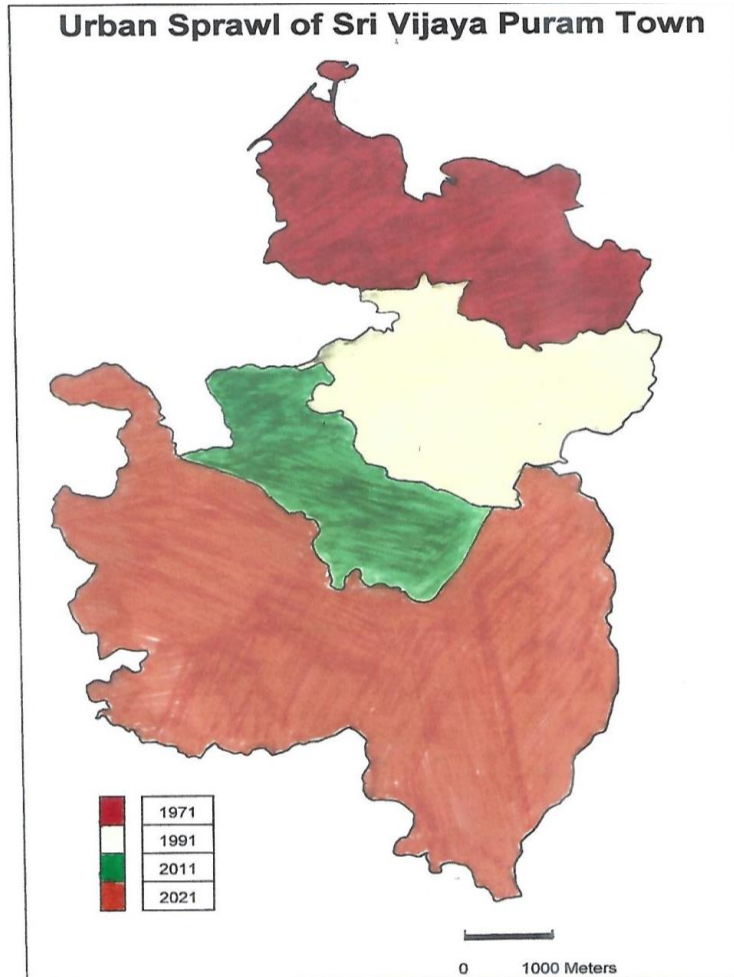


Fig.4

* The boundaries of the urban sprawl have been marked on the basis of the information collected from various literatures

above regulation, there was no municipal body. After the promulgation of municipal board regulation of 1957, a board was constituted which came to existence from 2nd October 1957.

Urbanisation is considered an optimistic display of a nation's growth and development. It involves the transition of population from rural to urban areas due to numerous socio-economic factors and the growing share of urban settlements in a nation's demography. The increased spatial distribution of an urban area coupled with the concentration of economic activities has led to an urban economy era. Until 1995, the extent of Sri Vijaya Puram urban area was 14.14 km² and was divided into 11 wards. Consequently to growth in population and physical development, the town was expanded to 17.74 km² in 2001 with inclusion of areas from Brookshabad, Austinabad and Pahargaon. The increased in town area also resulted in increase of wards from 11 to 18.

Growth of population: Andaman and Nicobar Islands & Sri Vijaya Puram (1901-2031)

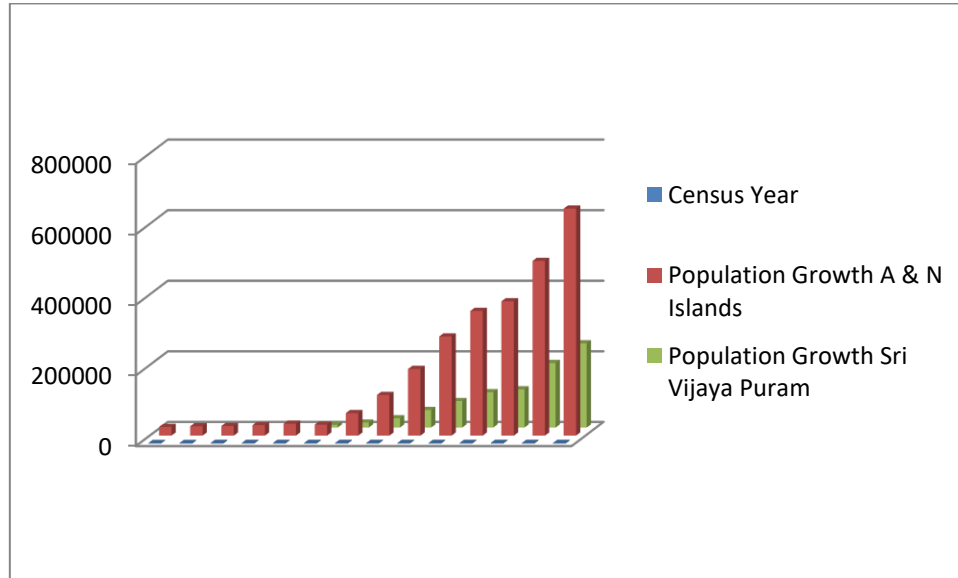


Fig.5

The population at Sri Vijaya Puram is steadily increasing. In 1951, the population of Sri Vijaya Puram was 7789. The population has shown nearly 12 times increase during the period 1951-2001. As per 2001 census, the population of Sri Vijaya Puram town was 99984. During 1961-71 and 1971-81, Sri Vijaya Puram recorded a very high growth rate of 86% and 89% respectively. This sudden increase in the population of the town is because of immigrants pouring into Sri Vijaya Puram town in search of business and employment opportunities. Most of the industrial units were established in and around Sri Vijaya Puram. Therefore, persons working in these establishments have preferred to settle down in Sri Vijaya Puram to avail greater civic facilities. Since 1981, the growth rates have notable come down. The growth rate of 51 % recorded in the year 1981-91 and further came down to 33% during 1991-2001 (table-1). The declining growth rates could be attributed to out migration outside Sri Vijaya Puram to surrounding regions and to main land owing to the public policies that prevailed in the islands and limitation of the island in terms of connectivity to the mainland.

Table-1: Population growth in Andaman and Nicobar Islands & Sri Vijaya Puram (1901-2031)

Year	A&N Islands		Sri Vijaya Puram	
	Total	% decadal variation	Total	% decadal variation
1901	24649	-	-	-
1911	26459	7.34	-	-
1921	27086	2.37	-	-
1931	29463	8.78	-	-
1941	33768	14.61	-	-
1951	30971	(-)8.28	7789	-
1961	63548	105.19	14075	80.70
1971	115133	81.17	26218	86.27
1981	188741	63.93	49634	89.31
1991	280661	48.70	74955	51.02

2001	356152	26.90	99984	33.39
2011	380581	6.86	108058	8.07
*2021(P)	494755	29.99	182744	69.11
*2031(P)	643482	30.0	238563	29.99

*(P) Projected, average growth of 3 %per annum is assumed for 2021 & 2031

Source: Basic Statistics 2022-23, Directorate of statistics, A & N Administration.

Present Growth: Morphological evolution of the built environment in the island and Sri Vijaya Puram in particular indicate an informal organic growth with colonial histogenesis and sporadic developments of building activities continuously. Commercial requirements of the community and people indicate a sporadic distribution organically developed to meet the demands of the people. Unlike the towns in mainland where it is possible to discern a central business district in the oldest part of the town, Sri Vijaya Puram remains an exception. The only possible commercial hub, the Aberdeen Market in the central area of town is characterised by mixed land use including residential areas. Linear, sporadic, discontinuous strips of commercial activities are observed along most of the major roads. It is also observed that there is no distinct segregation of wholesale and retail activities. The existing commercial activities, shops and business premises have reached a stage giving little possibilities for expansion.

Table-2: Sri Vijaya Puram Municipal area

year	Area(km ²)	No. Of wards
1951	7.87	-
1981	14.14	11
1991	16.64	11
2001	17.74	18
2015	41.223	24
2021	41.223	24
2024	41.223	24

Presently, Sri Vijaya Puram municipal area has been increased from 17.74 km² in 2001 to 41.223 km² in 2015 (table-2). The number of wards has also been increased from 18 to 24 in the year 2015 by merging surrounding areas as well as their boundaries have been re-demarcated. This re-demarcation of ward boundaries and numbers has brought a complete change in the scenario of demographic characteristics i.e. concentration of population, density and distribution etc (table-3).

Table-3: Sri Vijaya Puram: Growth of population ward-wise (1981-2031)

ward	1981	1991	2001	2011	*2021(P)	*2031(P)
1	5819	8513	5371	5890	8554	11120
2	2730	4705	8257	7329	8368	10878
3	5534	6525	6415	7104	8539	11101
4	5709	9700	7135	7501	7546	9810
5	6062	6321	4662	5352	8229	10698
6	1944	1587	4472	4598	7233	9403

7	2094	2939	6005	5175	7625	9913
8	5017	6756	4941	5343	7040	9152
9	6165	11455	5548	6274	8737	11358
10	2040	3116	9417	10675	7476	9719
11	6520	13338	5195	5681	7119	9255
12	-	-	4730	4424	6768	8798
13	-	-	4162	4095	6886	8952
14	-	-	4690	3937	8548	11112
15	-	-	3653	3910	7771	10102
16	-	-	4159	4375	8160	10608
17	-	-	6124	9952	7644	9937
18	-	-	5049	6443	7407	9629
19	-	-	-	-	7976	10369
20	-	-	-	-	8046	10460
21	-	-	-	-	6863	8922
22	-	-	-	-	5860	7618
23	-	-	-	-	6900	8970
24	-	-	-	-	7445	9679
Total	49634	74955	99984	108058	182744	238563

*(P) Projected, average growth of 3 %per annum is assumed for 2021 & 2031

The distribution of population at ward level indicates that the population is highest at the northern part of the town in areas

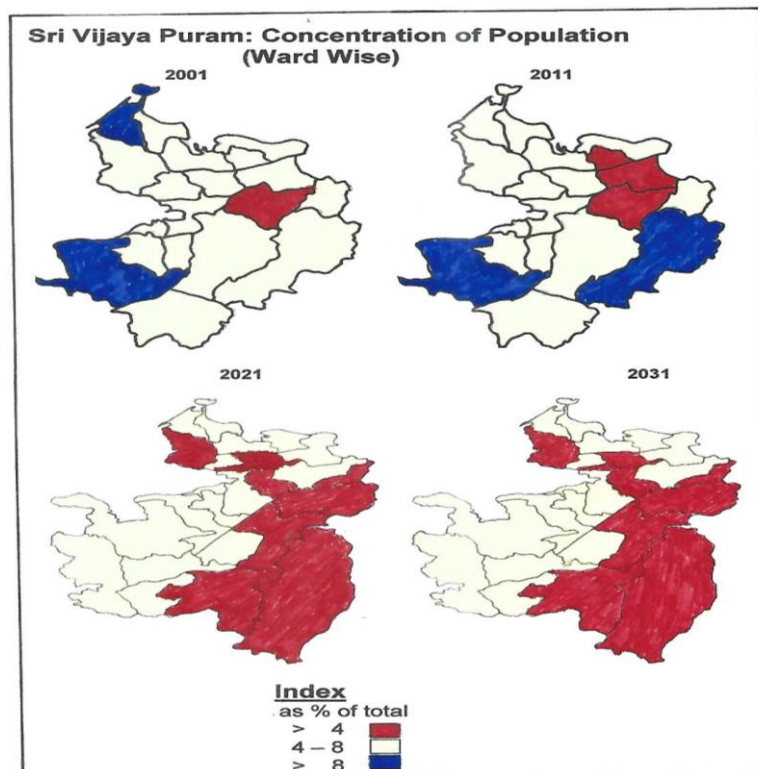


Fig.6

Like Aberdeen and Haddo which constitute the oldest part of the town. After 2001, it is observed that parts of the south adjoining Garacharma, Brichgunj and Dollygunj shows increasing densities. It has been seen that densities are high and growing along the major roads (fig.7).

Sri Vijaya Puram: 2024

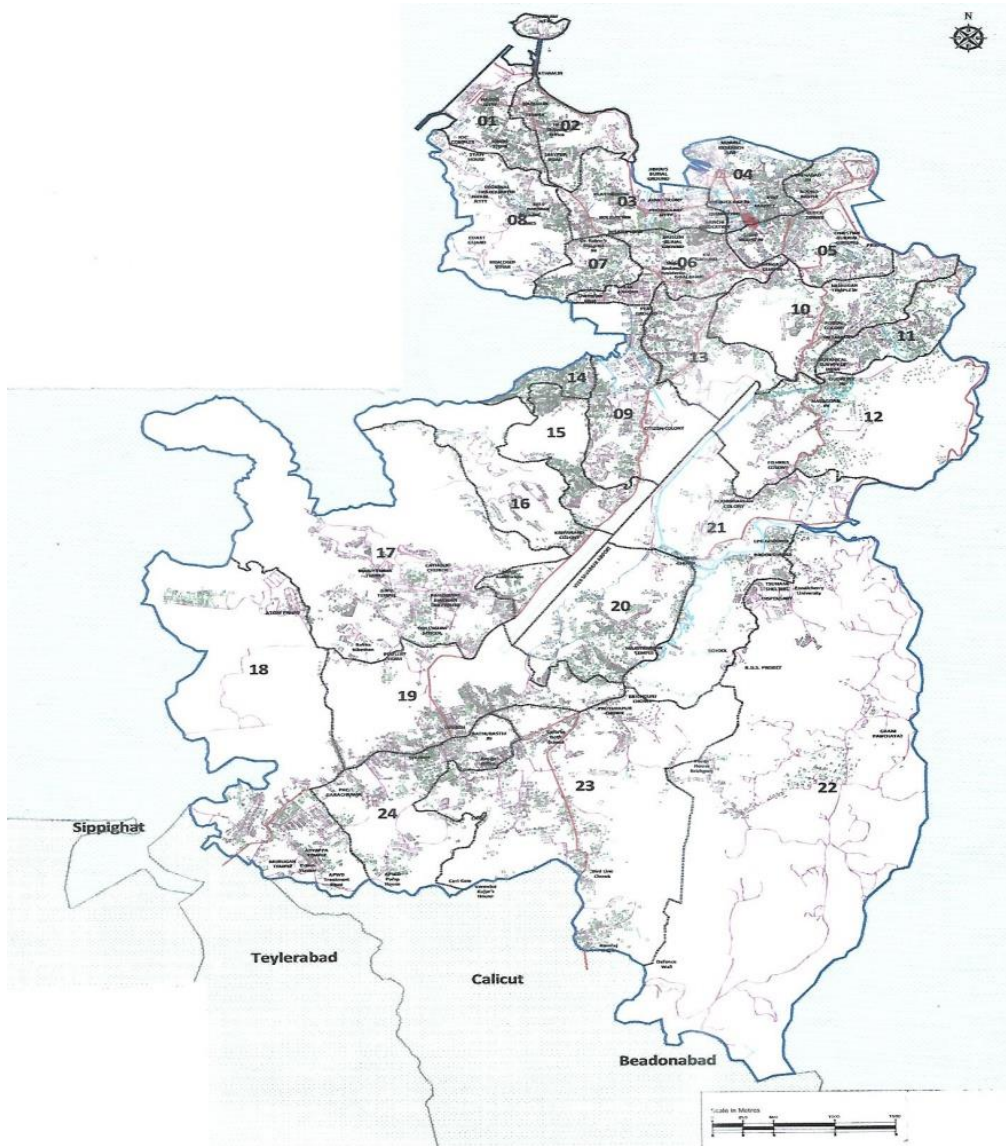


Fig.7

Unlike the towns in mainland India where residential areas in the town occupy 45 to 55 percent of the total town area, in Sri Vijaya Puram, the residential area occupies only 33 percent of the town (master plan for Port Blair, 2011). This phenomenon is due to the fact that 30 percent of the land is occupied by defence, forest, agriculture, water bodies and intricate road network within municipal limits (fig.8).

Conclusion

Usually synonymous with development and progress, urbanisation acts as a melting pot of numerous cultures

Sri Vijaya Puram: Land Use-2010

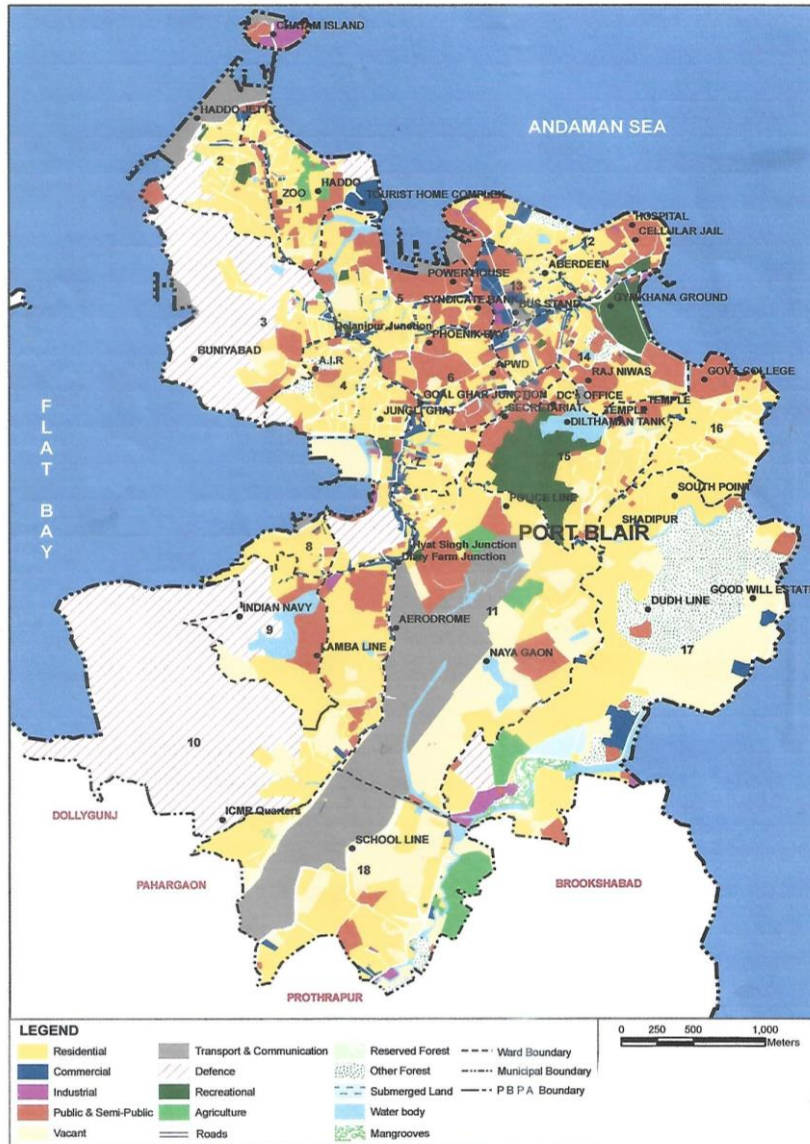


Fig.8

and traditions giving rise to a robust socio-economic network among the population. It is also a connecting force between towns, villages, cities and metropolitans, creating a network for growth and development. However, while urbanisation is significant for a nation’s development, it can quickly turn into chaotic affair if mismanaged. The problems related with traffic movement and congestion, health related problems, waste management and pollution from urban growth, water supply and power crises are some of the significant issues related with Sri Vijaya Puram which needs to be addressed immediately. Concerned organisations can take a phase wise approach to find solutions to each problem caused due to the complexity of the urban morphology making existing cities and new urban development more ecological based and liveable is a central component of the quest for urban sustainability.

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