

# MASTER PLAN FOR ERATTUPETTA TOWN - 2037

**ERATTUPETTA MUNICIPALITY &  
DEPARTMENT OF TOWN & COUNTRY PLANNING,  
GOVERNMENT OF KERALA**

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*Submitted to Govt o/c*

# **MASTER PLAN FOR ERATTUPETTA TOWN**

**DECEMBER 2018**

**ERATTUPETTA MUNICIPALITY  
DEPARTMENT OF TOWN & COUNTRY PLANNING  
GOVERNMENT OF KERALA**

# Erattupetta Municipality



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## FOREWORD

Erattupetta being a new municipality is in its threshold of development. It is the most densely populated local body in Kottayam district needs a well laid plan for the future developments. The present plan will work as a guide for the future development of Erattupetta town by regulating the spatial planning development of the town. The preparation of the Master plan for Erattupetta was a joint effort of the Municipal Council, Erattupetta and District town planning office, Kottayam under the guidance and supervision from the office of the Chief Town Planner, Department of Town and country planning, Thiruvananthapuram.

The new Development Plan envisage to accommodate the contemporary challenges, in the terms of fast urban growth and gaps in infrastructure facilities on one hand and aspirations of various stakeholders, competitive future in terms of attractiveness for investment in view of the last changing urban landscape within and its surroundings at a regional level.


First and foremost, I would like to extend my profound gratitude to the Council members who had participated with their valuable views and imagination in the preparation of the Master plan. I also express my sincere gratitude to the Chief Town Planner for the worthy contribution in the preparation of this work. The staff of Kottayam District office of Town and Country Planning Department wholeheartedly involved in the successful completion of this project under the leadership of the Smt. Suja Mathai, District Town Planner. Their hard work and commitment for the preparation of Master plan is specially acknowledged.

I also express my sincere gratitude to the Municipal secretary and employees for their momentous support in the preparation of the Master plan.

I hope that this Master plan for Erattupetta can act as catalyst to the development of Erattupetta in a sustainable manner and will ensure the planned future development of the town.

Erattupetta  
22/01/2019



  
V.K.Kabeer  
Chairman  
Erattupetta Municipality



## **PREFACE**

Planning is a prerequisite for effective development. Development becomes comprehensive when the physical, social and economic variables of an area are planned in an integrated manner. Many functions that the town performs as seats of industry, trade and business and as providers of various services, including higher education, specialized health care services, communication etc have impact on the development and welfare of not only the resident population but on people of a wider service area. Hence planned development of our urban areas is a matter of priority.

Erattupetta town on the bank of Meenachil River is located about 42 km north - east of the district headquarters Kottayam. There is a need for a long term plan for the development of Erattupetta Town considering the growth trends, resource potential, location aspects etc.

74<sup>th</sup> Constitution Amendment Act envisages empowerment of the Urban Local Bodies with planning functions, which is enshrined in the twelfth schedule of Article 243(W) of 74<sup>th</sup> amendment. The Kerala Town And Country Planning Act 2016, mandates the Municipal Councils to prepare Master plans for the area under their jurisdiction, through a participatory process. The Master plan shall generally indicate the manner in which development shall be carried out and also the manner in which the use of land shall be regulated. In view of this, Government of Kerala has undertaken the preparation of the Master plans for all towns in the state in a phased manner, under the 'Scheme of Preparation of Master Plans and Detailed Town Planning Schemes'. The preparation of Master plan for Erattupetta town is included under this scheme in the third phase vide GO (Rt) 2955/2015/LSGD dated 29-09-2015.

The Municipal Council, Erattupetta vide resolution No: 01 dated 02-03-2016 has decided to prepare a Master Plan considering the present development scenario and also resolved to prepare the plan incorporating re survey map. The Municipal Council of Erattupetta extended all support and played crucial role in the time bound preparation of the Master plan. Draft Master Plan was approved by the Municipal Council of Erattupetta as per resolution No: 02 dated 07/12/2018 and the same is being forwarded to

Government for getting, approval for publication as per section 36(3) of the Kerala Town and Country Planning Act 2016. For the preparation of Master plan, a systematic process, comprising of extensive data collection and analysis, identification of development issues and setting of goals and objectives, formulation of development concept and carving out policies and strategies followed by detailed sectoral proposals is adopted.

I would like to appreciate the leadership provided by the Erattupetta Municipality for this endeavor under the chairmanship of Sri.V.K.Kabeer. I also appreciate the consistent effort of officials of the office of the Chief Town Planner (Planning) in processing the Draft Master plan under the leadership of Sri J.Jayakumar, Senior Town Planner. The efforts put in by all staff of District Town and Country Planning Office, Kottayam under the leadership of Smt Suja Mathai, Town Planner for completing this plan successfully is well appreciated. I hope that this Master plan will provide the frame work for planned development of Erattupetta.

Thiruvananthapuram



Gigi George

Chief Town Planner (Planning)

GIGI GEORGE  
CHIEF TOWN PLANNER (PLANNING)

## **ACKNOWLEDGMENT**

Erattupetta located in the eastern region of Kottayam district at the foothill of Western Ghats, is a major urban centre in the district. The word Erattupetta is said to have been derived from the name "Eraaru" where the two rivers (*aru*) merge as single one there by flow as Meenachil river. Erattupetta also known as the gateway of Malanadu, is the doorway to the famous tourist centres like Wagamon, Ilaveezhaponchira, Sabarimala.

Erattupetta is one of the urban centres of the Kottayam district, has a rich culture and heritage through thousands of years. In olden days, the people of Erattupetta had established commercial relationship with the traders and trade centres in Tamil Nadu. Educational institutions started functioning in Erattupetta in the beginning of 20th century. The service activities, commercial establishments and location of the town indicate the importance of the town. Now more facilities are required to be provided to have a sustained development of the town and the region. In this context, it is necessary to identify various development requirements and to plan for the future for ensuring a healthy, physical development and a progressive economic growth in the years to come. The Erattupetta Master Plan visualises a planned spatial development for the improvement of aesthetic, convenient and healthy living condition of the citizens.

The preparation of Master Plan for Erattupetta was started as a joint effort of Erattupetta Municipality and District Town and Country Planning office, Kottayam under the guidance and supervision of the state planning cell, Thiruvananthapuram.

The dynamic leadership rendered by Sri. V.K.Kabeer, Chairman of Erattupetta Municipality and the Council members are of great help and encouragement for completing the Master Plan. They actively participated in all the workshops and discussions conducted as part of preparation of this plan and contributed highly by giving their concept of development. I thankfully, acknowledge their contributions.



I acknowledge, with sincere thanks for the advice and technical support given by Sri. Gigi George, Chief Town Planner (Planning) and Smt. K.S Girija Chief Town Planner. The motivations and the moral support given by them have helped in the timely completion of the task.

The timely guidance, technical support, intervention and motivation given by Sri. J. Jayakumar, Senior Town Planner, Smt C.K. Sabitamini, Town planner and Sri P.G. Pradeep Kumar, Assistant Town Planner, Office of the Chief Town Planner who has helped us in vetting the Master Plan works and giving valuable suggestions was instrumental in shaping this report in the present form.

The efforts rendered by Smt. Sumol. G, Deputy Town Planner, Sri. Sudheer P Sukumar, Assistant Town Planner and Smt. Gigi Abraham, Assistant Town Planner of this office were admirable in finalising this Master Plan. I thank the sincere support given by Town planning surveyors of this office Sri. Rajan M Joseph, Smt. Smitha K.G and Sri. Saifudeen P.A, for their works they have imparted in the survey works as well as the drafting works of this Master plan. I also acknowledge the supports given by Sri.Tinu V. Paulose, Junior Superintendent of this office. I also acknowledge with thanks the support given by each and every technical and administrative staff of this office for their valuable service in bringing out the report in the present form.

I hope this Master Plan will give direction to a planned development of Erattupetta town in the coming years, which can also frame a healthy living condition in the town.

Kottayam  
28-01-2019



Suja Mathai  
Town Planner



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# **PART. I**

## **STUDY AND ANALYSIS**



# 1. INTRODUCTION

## 1.1 GENERAL

Erattupetta is one among the newly formed Municipality in Kottayam district of Kerala state vide GO (Rt) 10782/2015/FN dated 10. 12. 2015. It lies 38 km east of Kottayam town, the district Centre. Erattupetta was known as Erappili and Erappuzha in the ancient period. The word Erattupetta is said to have been derived from the name "Eraaru" part in all the variation of the names arose from the geographical location, where the two rivers Thekkanar and Vadakkanar merges as single one there by flows as Meenachil river. Erattupetta is situated on the foothills of High Ranges. It was the commercial capital of the Poonjar principality until 1949.



A muslim dominant panchayat Erattupetta was formed in 1954 as a result of strong demand from the residents of Erattupetta and surrounding areas. It was officially declared as a panchayat only in 1962 and formed as a local body including part area of Poonjar, Thidanadu and Thalappalam panchayats. In 1973 it was upgraded as special grade panchayat and again upgraded as Municipality in 1988. It was then degraded as panchayat in 1992 due to some administrative differences. Erattupetta possessed a high position in trade and commerce until Alappuzha emerged as a port during 18<sup>th</sup> century. 92% of the population is engaged in nonagricultural activities.



### Planning Area

Erattupetta is a Muslim dominant municipality with highest population density in the district and accommodates nearly 53 mosques within the town

area. The impact of growth rate of town is comparatively less than that of other towns of Kottayam district and major portion of the town area comes under residential occupancy. The influence of the municipal area to the neighboring Grama Panchayats is very low mainly due to the increase in population density. Erattupetta Grama Panchayat is upgraded as Municipality and the infrastructure required for catering the need of the residents of municipality is much higher. By examining the land use also it was concluded that there is no necessity of extending administrative boundary of municipality for delineating planning area.

## **1.2 NEED FOR A NEW PLAN**

Erattupetta municipality is one among highly dense town and newly formed municipality in Kerala state. It has a population density of about 3968 persons/Sqkm which is nearing the density of a corporation. Since the population growth rate is high and without planned development town is facing a vivacious development culture. The proximity of this town to pilgrim centers and other tourist spots give more importance to the town. The regional network connects major centers of the Kottayam district. Therefore a planned development is essential for a better future of this town thus reducing haphazard development.

With the decentralized and participatory planning through the constitutional backup of 73 and 74 Amendments, local bodies acquire the momentum of planning process. The importance of spatial planning was more realized and it became established that an actual assessment of potentials and issues is required and only through a definite planning strategy the development of the town can be ensured.

The scheme of 'Preparation of Master Plans and Detailed Town Plans' was announced in the Budget Speech of 2008-2009. The scheme aims to prepare statutory Town Planning Schemes for towns in the State in a time bound manner, under Town Planning Acts so as to ensure planned development. Erattupetta is one of the towns included in this scheme in the third phase vide GO (Rt) 2955/2015/LSGD dated 29.09.2015. The Municipal Council, Erattupetta vide resolution No: 01 dated 02-03-2016 has decided to prepare a new Master plan considering the changed development scenario and also resolved to prepare the plan in re-survey map.

### 1.3 METHODOLOGY

The methodology adopted for preparation of the Master Plan is discussed in this paragraph. The plan preparation process consists of collection of data

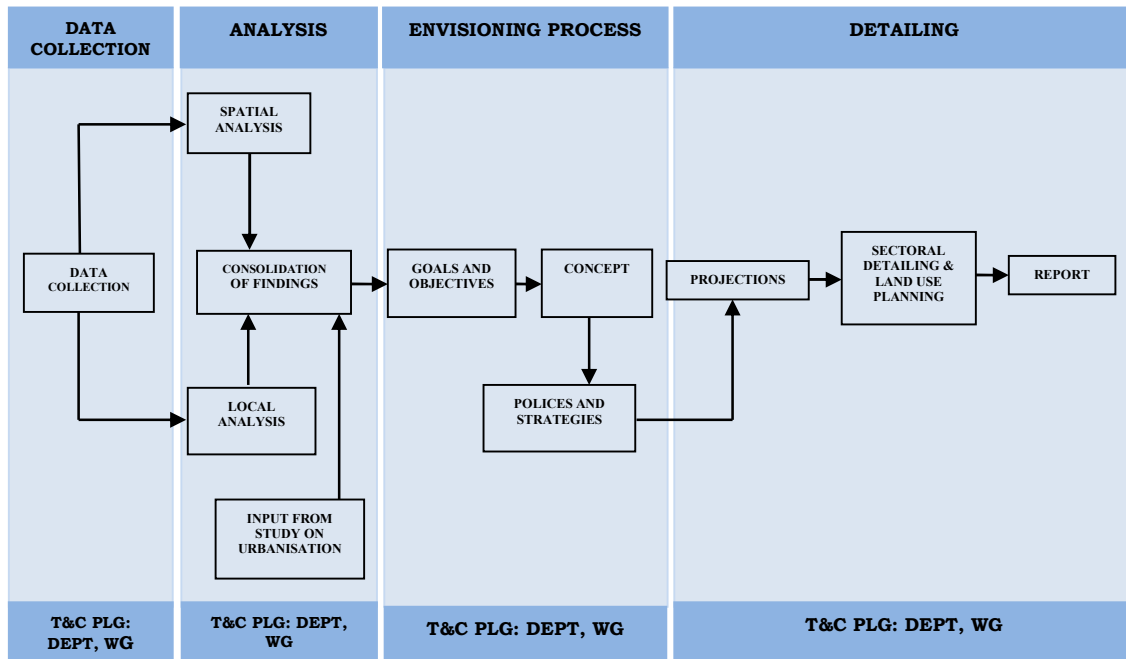


Figure 1.1 Methodology of Plan Preparation

(both primary and secondary), analysis (both spatial analysis and local level analysis), consolidation of findings, envisioning process (including setting up of goals and objectives, arriving development concepts and framing policies and strategies), and detailing (including the projection of requirements, sectoral detailing and land use planning). Different steps involved in the plan preparation process, agencies involved etc are shown in Figure 1.1.

The plan was prepared jointly by the Municipal council, Erattupetta and Department of Town and Country Planning, Kerala State. The Councillors and other Resource persons in various sectors have been actively participated in the collection of data and analysis especially local level analysis. All 28 Municipal Councilors also provided information regarding their wards and their views and vision on future development of Erattupetta. The plan has been presented and discussed in detail in various Council meetings, including Special Committee. Detailed regional setting study was carried out in this connection which is documented as the District Urbanization Report (DUR) of Kottayam.

Identification of the problems and potentials of the municipal area was followed by an assessment of the future requirements. From a cloud of possible development alternatives, an appropriate development strategy was selected. After the development strategies were formulated, the policies, development controls and regulations, project identification etc were derived at and the same was presented before the Municipal council.

#### **1.4 COMMUNITY INVOLVEMENT**

The more acceptable and sustainable planning process should respond to the need of the end user and not just provisions for future. The activity of community participation is based on the principle that the built and natural environments works better if citizens are active and involved in its creation and management instead of being treated as passive consumers. The community participation is a source of wisdom and information about local conditions, needs and attitudes, and therefore improves the effectiveness of decision making. Before the commencement of major works of Master Plan preparation a development seminar was conducted on behalf of Erattupetta municipality at Vyapara Bhavan Erattupetta on 29<sup>th</sup> September 2017. The peoples aspiration is ensured through detailed discussions and presentations at various level of meeting held at municipal council and other venues. Lensfed and other retired resource persons were also taken into consideration while preparing the master plan. People's participation is entrusted through detailed discussions and presentations at various levels of meetings held at Municipal council and other venues.

#### **1.5 SUMMARY OF THE REPORT**

This report on Master Plan for Erattupetta Municipality consists of 31 chapters and these chapters are grouped into four parts. Part I consist of 22 chapters, containing study and analysis of various sectors giving detailed information about the existing status of the municipality. Part II comprises of 5 chapters about integrated development vision. Part III comprises of 3 Chapters about Land use, Transportation and Sectoral proposals. The development regulations are included part IV. The maps of Existing land use and Proposed land use are attached separately.



## **2. HISTORY & PHYSICAL CHARACTERISTICS**

### **2.0 GENERAL**

Erattupetta is situated on the banks of two rivers there by dividing the town into three landmasses Thekkekara, Vadakkekara and Kizhakkekara. Erattupetta lies in an ancient route from Athirampuzha to Tamil Nadu Hill produces from the Cardamom hills were brought down by the Muthuvans for trade. Major generation of economy is from the rubber cultivation, trade activities of spices, hill commodities and the wood furniture industries.

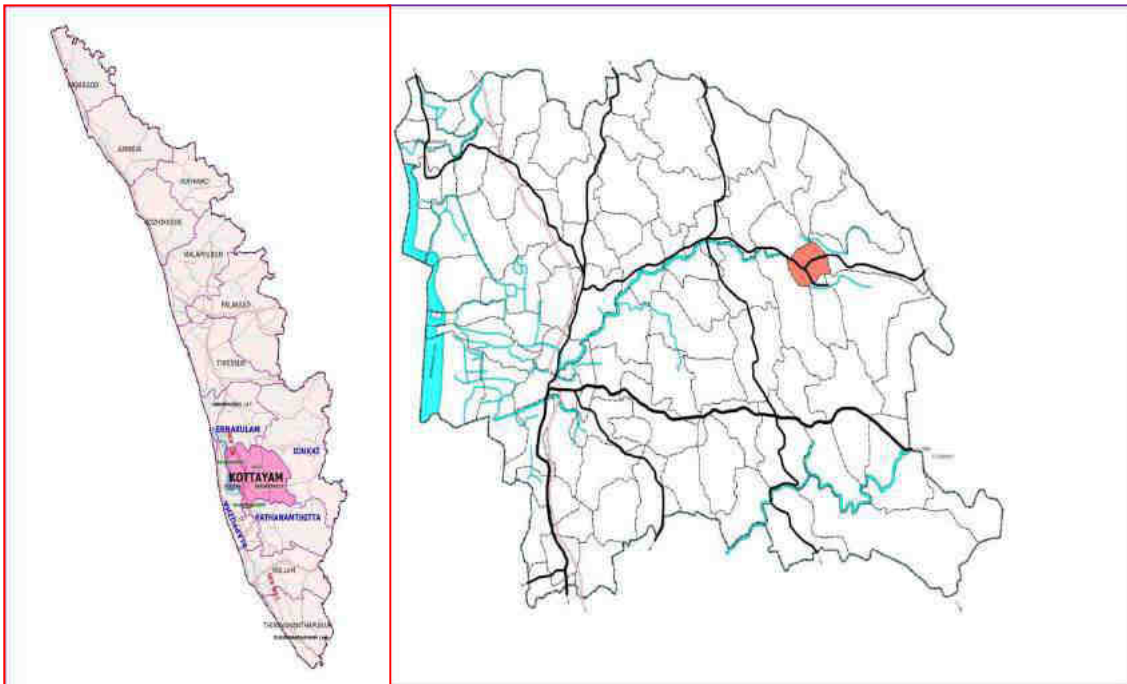
### **2.1 LOCATION AND LINKAGES**

Erattupetta is accessible from North Kerala via Angamali-Muvattupuzha-Thodupuzha-Muttom route. It is well connected to Tamil Nadu via Kottayam-Kumali road (KK Road) to Madurai through the nearest town Kanjirappally which is 16 Kilometers from Erattupetta.

Erattupetta- Peerumedu road (SH14), Ettumanoor- Erattupetta- Poonjar road (SH32) and Kanjirapally- Erattupetta- Muttom road (SH44) are the major roads passing through the town. Town is well connected to the nearby urban centres namely – Thodupuzha (30km), Pala (12km), Kanjirappally (16km), Kottayam (40km), Ernakulum (80km), and Pathanamthitta (60km) through road.

There is no rail ways exists in the town. The nearest major railway station Kottayam lies 38 km from Erattupetta. Nedumbassery International Airport, 75 km from Erattupetta is the nearest Airport followed by Thiruvananthapuram (151km), Madurai (160km), and Coimbatore (169km). Though Meenachil River was used for passenger and goods traffic during the early period of 20th century, water transport has no more roll now a days.

The geographical location of the town is between 9 degree 43 minutes to 9 degree 39 minutes North latitudes and between 76 degree 45 minutes and 76 degree 48 minutes East longitudes. The location of the town is shown in Figure 2.1.



**Fig 2.1 Location of Erattupetta Municipality**

The municipality has an extent of 7.5 sqkm and has 28 wards and Pala municipality is the nearest town and is about 12 km west of Erattupetta town. The municipality is surrounded by Thalappalam Grama Panchayat in the north, Theekoy Grama Panchayat in the east. Poonjar and Poonjar Thekkekara Grama Panchayat share boundary with Erattupetta in the eastern and southern part while the Thidanadu Grama Panchayat shares boundary with Erattupetta in the western and southern part of the town.

## 2.2 HISTORY

Erattupetta was known as Erappili and Erappuzha before. The "Eraaru" part in all the variation of the names arose from the geographical location, where the two rivers merge as single one. The Former royal family of Madurai came here in 11th century from Tamil Nadu. This place, which was under the control of the Thekkumkur king, transferred his power to the royal family of Madurai. For the stability of government they greeted sincere and able Muslim Nobles. Their next generations are known by the name as "KHAN". Today, the Khan family is a prominent Muslim family in Erattupetta. 'Lebbas are another Muslim family in Erattupetta and are claimed to be descendants of Shaikh Saeed Bava (a descendant of Ukasha bin Mihsan, a companion of Prophet Muhammed).

During AD 625 Poonjar Koyikkal Thampuran donated 6 Acre 40 cent land to Muslims and Puthupally, Puthenpally and PMC Hospital were established in that land. Puthupally was established between AD 625 and AD 650. During AD1299 Syed Baba was reached from Androth Island and muslim community was established here. 5 Acre 90 cent land of Ganapathiyar Kovil was donated to Muslims by the Parackalachan and Ninar pally was established there.

Aruvithura St.George's Church an old famous pilgrim centre is situated in the suburbs of Erattupetta. The Church believed to be the oldest Church in eastern Kerala, and is the mother church of the ancient Syrian Christian community of both the Meenachil and the Kanjirapally Taluks. It is believed to be built by an early wave of migrant Christians from Nilackal (Chayal), who settled in the region for trade, commerce and agriculture. Nilackal, located in the Sabarimala hills miles Southeast of Erattupetta, is known to be one of the 7 centers in Kerala, where Saint Thomas founded Christian communities and established Churches. There's also a popular belief that the St.George's Church was established by Saint Thomas the apostle himself.

### **2.3 AREA**

Erattupetta Municipal town comprises of Erattupetta village comprising block numbers 47, 48, 67 and 69. Total extent of town 7.50 sq.km divided into 28 municipal wards.

### **2.4 PHYSIOGRAPHY**

The natural drains from the hilly area of Northeast, Northwest and Southwest parts of town form the Thekkanar and Vadakkanar river and it merges in the valley point to form Meenachil river. The town developed in this valley where water transport facilities were available in ancient period. Trading flourished from the Meenachil River valley and thus the town centre became the merging point of these rivers. There is no forest or other natural diversity available in this town. It has an average elevation of 36 meters (118 feet).

### **2.5 CLIMATE AND RAIN FALL**

The normal rainfall of Kottayam district is 2931 mm based on 1901-1999 data and the major contribution of rainfall is during South West monsoon followed by the North East monsoon. The analysis of rainfall data reveals that the

distribution of rainfall increases from west to east. The highest rainfall recorded at Pala while the lowest recorded at Ettumanoor. The annual rainfall ranges from 2435.9 to 3755.2 mm and the average annual rainfall of the district is 3169.28 mm. In general the district has wet type of climate and four seasons are seen in this district. The hot summer season from March to May, the South West monsoon season from June to September, the North East monsoon season from October to December and cool climate prevails during January and February. The South West monsoon contributes nearly 59 % of the total rainfall and 21 % from North East monsoon.

The temperature is more during the months of March to May and less during November, December and January. The maximum temperature ranges from 23.8° C to 26.0° C. The average annual maximum temperature is 29.8° C and the minimum temperature is 24.4° C. The average mean monthly maximum temperature ranges from 29.2 to 33.4° C and minimum temperature ranges from 19.7 to 25° C. Erattupetta's climate is classified as tropical. Most months of the year are marked by significant rainfall. The short dry season has little impact. The average annual temperature is 27.7 °C in Erattupetta. About 3049 mm of precipitation falls annually.

### 2.5.1 FLOOD 2018

The incessant rains and overflow of rivers like Meenachil, Vadakkanar, Thekkanar in August 2018 , many parts of the town especially the areas adjoining the river were inundated. Even though flood hit this local body, severe destruction or damages were not reported. Public places affected includes places near Kaduvamoozhi private bus stand, Thottumukk cause way, Al Manar School, etc.



**Fig 2.2 Flood 2018 Erattupetta**

Flooding is a recurring event in Erattupetta due to heavy rainfall exceeding flow capacity of streams and rivers especially in area like Kaduvamoozhi,

Thottumukk, Mathakkal Thodu, Nadakkal. Traffic flow has been disrupted due to the flooding in the roads near Thekkanar and Vadakkanar rivers. Relief camps were not required in Erattupetta since the duration of inundation was very low. The encroachment of the banks of Meenachil, Vadakkanar, Thekkanar river has to be prevented and enforcement of strict rules has to be implemented for the protection of these river banks.

## **2.6 SOIL CONDITION**

The soil types occurring in Kottayam district can be broadly grouped into four types on the basis of their physiochemical properties and morphological features. They are (a) Lateritic soil. (b) Riverine alluvium, (c) Brown hydromorphic, and (d) Forest loams. The lateritic soil is the pre-dominant soil type, which covers almost the entire midland areas of the Kottayam district. The surface soil is mostly reddish brown to yellowish red in colour and the texture ranges from gravelly loam to gravelly clay loam. Heavy rainfall and high temperature prevalent in the area are conducive to the process of formation of this soil type. It is well drained and the presence of organic content is low. This soil is poor in nitrogen, phosphorous and potassium. It is acidic in nature with a pH value ranging from 5.0 to 6.2.

The occurrence of Riverine alluvium soils is restricted along the river courses and their tributaries. They show wide variation in their physic-chemical properties depending on the nature of the alluvium that is deposited and the characteristics of the catchments area drained by the river. They are very deep soils with surface textures ranging from sandy loam to clay loam. Presence of mica flakes has been observed in the alluvial soils.

## **2.7 BIO-DIVERSITY**

Rubber is the main crop of Erattupetta town. Other crops like plantains, pepper, areca nut, tapioca, mango trees, jackfruits, and cashew trees are also grown here. Homestead cultivation is promoted in these area for daily use of vegetables as far as possible.

## **2.8 NATURAL RESOURCES**

Erattupetta is blessed with the rivers merging in the town centre has been exploited by the people and the aesthetics of the town has been deteriorated due to the haphazard development happening in the town.

## **2.9 CONCLUSION**

*Erattupetta is located in the eastern region of Kottayam district at the foothills of High ranges and is well connected to major centers of the state by road way. Initially the town was under the control of Thekkumkoor king and later descendants of Sheikh Saied Bava established Muslim community here. Erattupetta has an undulating topography with central area plain land sloping towards the periphery of town. The highest point in elevation situates southern side at Valiachanmala. Considering the slope, adequate land for urban development is available within the town. Moderate climate is experiencing in the town.*



### 3. REGIONAL SETTINGS

#### 3.1 REGIONAL SETTINGS

The regional setting of a town spells out the hierarchy of settlement in the regional scenario, the activity which the town has to perform and its connectivity with different settlements. Extensive regional setting study has been carried out in connection with the preparation of Development plan for municipalities in Kottayam district. The study was documented as District Urbanization report of Kottayam. The District Urbanisation report defines the spatial structure of the district which is arrived by integration of hierarchy of settlements, function of settlements and the connectivity between settlements.

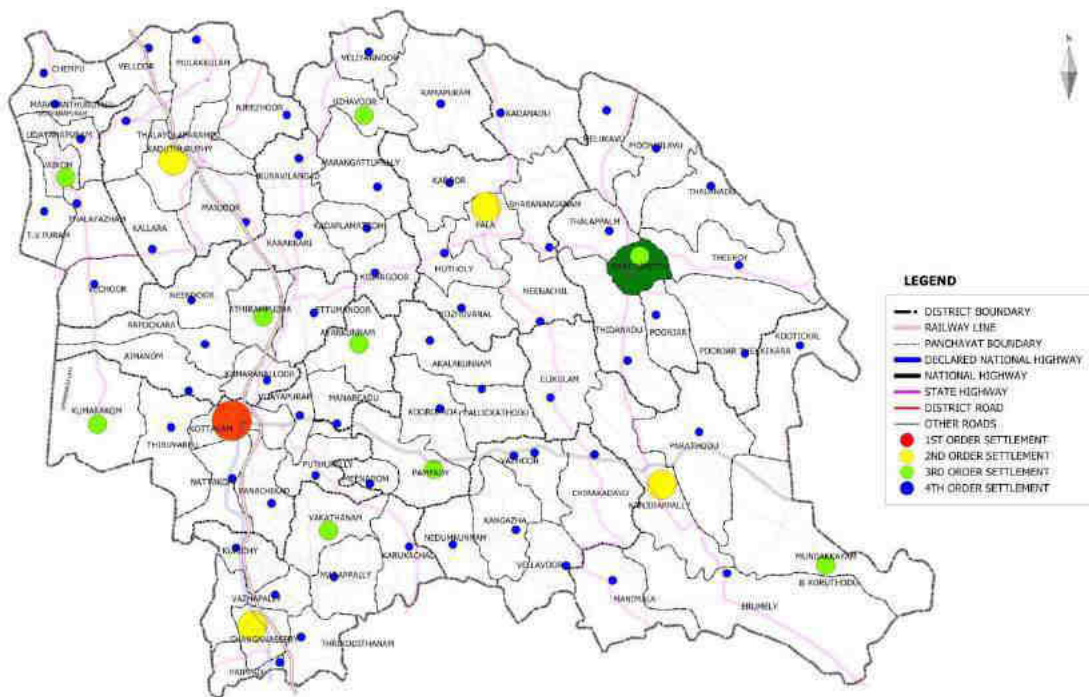
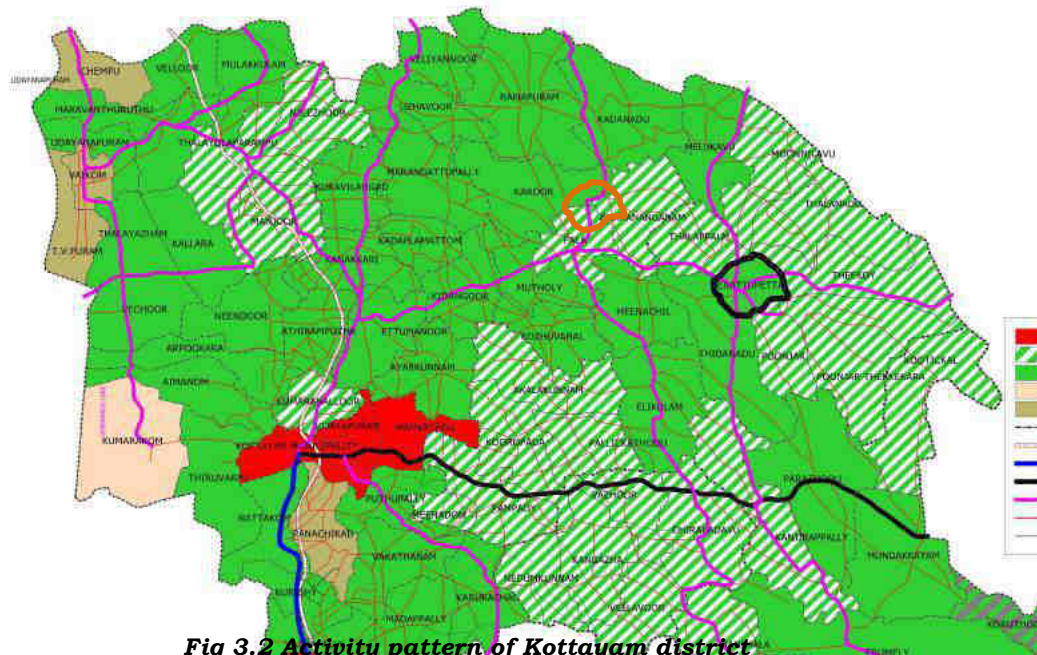


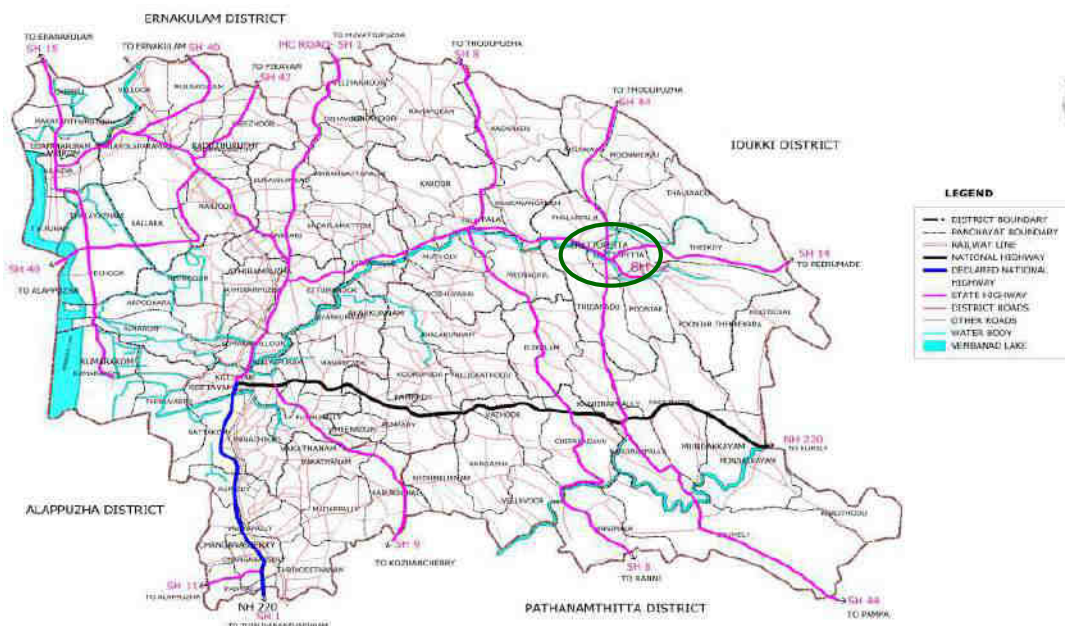
Figure 3.1 Hierarchy of settlements of Kottayam District

The hierarchy of settlements of Kottayam as revealed from regional setting study is shown in Figure 3.1. Kottayam is suggested as first order settlement of the district. Erattupetta is suggested as third order settlement of the district. The Activity pattern of Kottayam district is shown in Figure 3.2. In this study Tertiary activity, Primary activity (plantation), Primary activity (agriculture), combination of



**Fig 3.2 Activity pattern of Kottayam district**

Agriculture SSI and Animal husbandry, Primary activity (agriculture and animal husbandry) are the activities identified for various settlements of the district. In this study primary activity (agriculture), has been identified as the activity of Erattupetta town.



**Figure 3.3 Connectivity of the District**

The connectivity network of Kottayam district is revealed from regional studies of the Study on urbanization of the district.

In the study Kanjirapally – Erattupetta - Muttom Road (SH44) , Ettumanoor- Erattupetta- Poonjar road (SH32), Erattupetta – Peermadu road (SH14) are identified as the major roads passing through Erattupetta town. The connectivity of the district is shown in Figure 3.3.

### 3.2. PLANNING AREA

The Planning Area of a Development Plan for Erattupetta strictly adheres to the administrative boundary of Erattupetta municipality boundary limits. The regional setting study of District Urbanisation Report has been considered for delineation of planning area. Planning Area has been delineated by studying the character of the Grama Panchayats lying adjacent to Erattupetta town. Three characters viz, urban profile, functional character and land use concentration has been studied based on District Urbanisation Report. The character of seven adjacent Grama Panchayaths namely Thalappalam, Thalanadu, Thidanadu, Teekoy, Poonjar, Moonnilavu, and Poonjar Thekkekara were studied and it is shown in Table 3.1.

**Table 3.1. Character of Adjacent settlements of Erattupetta Municipality**

Settlements	Urban Profile	Functional Character	Land use concentration
Erattupetta	Urban	Rural	Agriculture
Thalappalam	Non -Urban	Rural	Plantation
Thalanadu	Non-Urban	Rural	Agriculture
Thidanadu	Non-Urban	Rural	Plantation
Teekoy	Non-Urban	Rural	Plantation
Poonjar	Non-Urban	Rural	Plantation
Poonjar Thekkekara	Non-Urban	Rural	Urban
Moonnilavu	Non-Urban	Rural	Plantation

Source: District Urbanization report, Kottayam district.

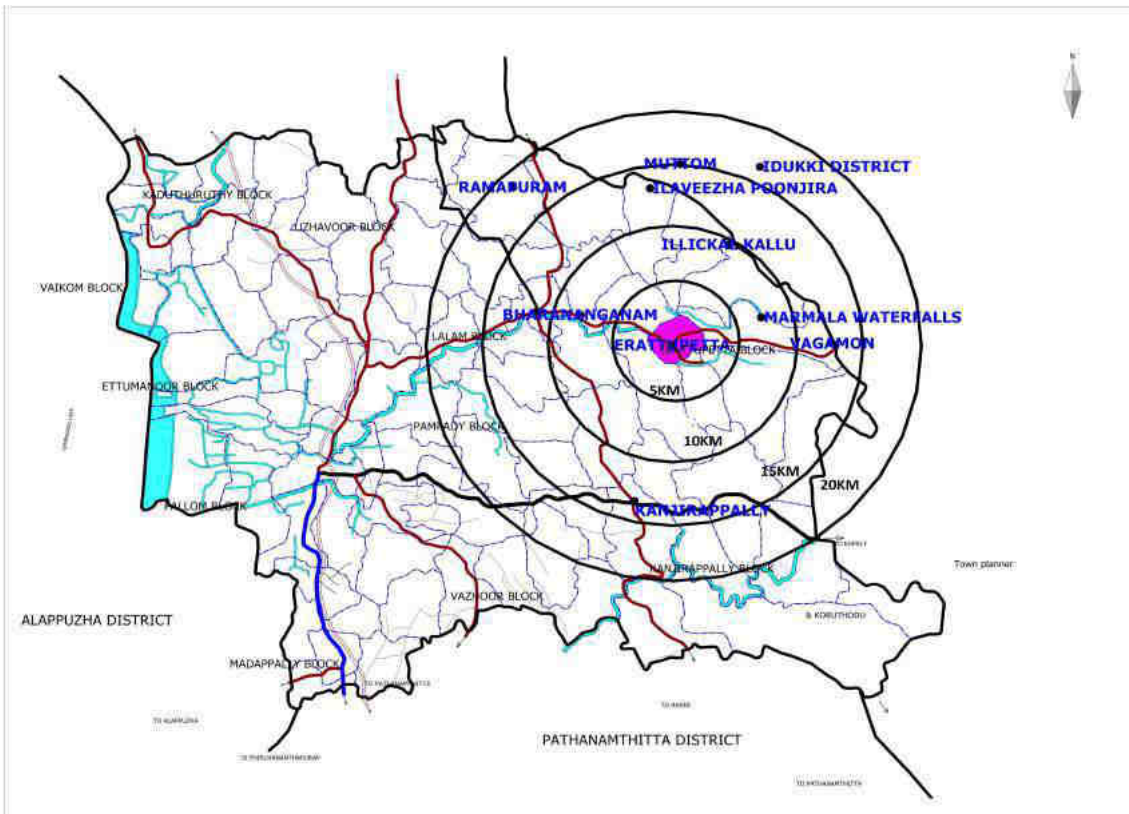
From the above table, it is clear that none of the adjacent Grama Panchayats is showing urban character and they are predominantly rural in nature. The functional character of Municipality shows rural nature and agriculture land use concentration while it has an urban profile (statutory urban area). Neighboring Grama Panchayats outside the municipal limit exhibits a rural



character and plantation and agriculture area predominate in all of these local bodies and hence the planning area is taken as the administrative boundary of Municipality for easy implementation of Plan proposals.

### 3.3 INFLUENCE AREA OF THE TOWN

Erattupetta Municipality is centrally located to many other third order towns with very high regional connectivity linkages. This central location enhances the importance of town and it acts as the major service centre of the region. This centrality effect of the town influences surrounding Grama Panchayats in many ways.



**Fig. 3.4 Location with respect to other neighbouring centres**

Erattupetta is centrally located with respect to many of the third order towns namely Muttom, Kanjirapally, Ramapuram, Bharananganam and Vagamon as shown in Figure 3.4. It also proposed as a third order settlement for catering the need of North-East part of the district. Erattupetta possess second position in trade and commerce in Kottayam District during ancient period and on emerging Alappuzha as a major port during 18<sup>th</sup> century its

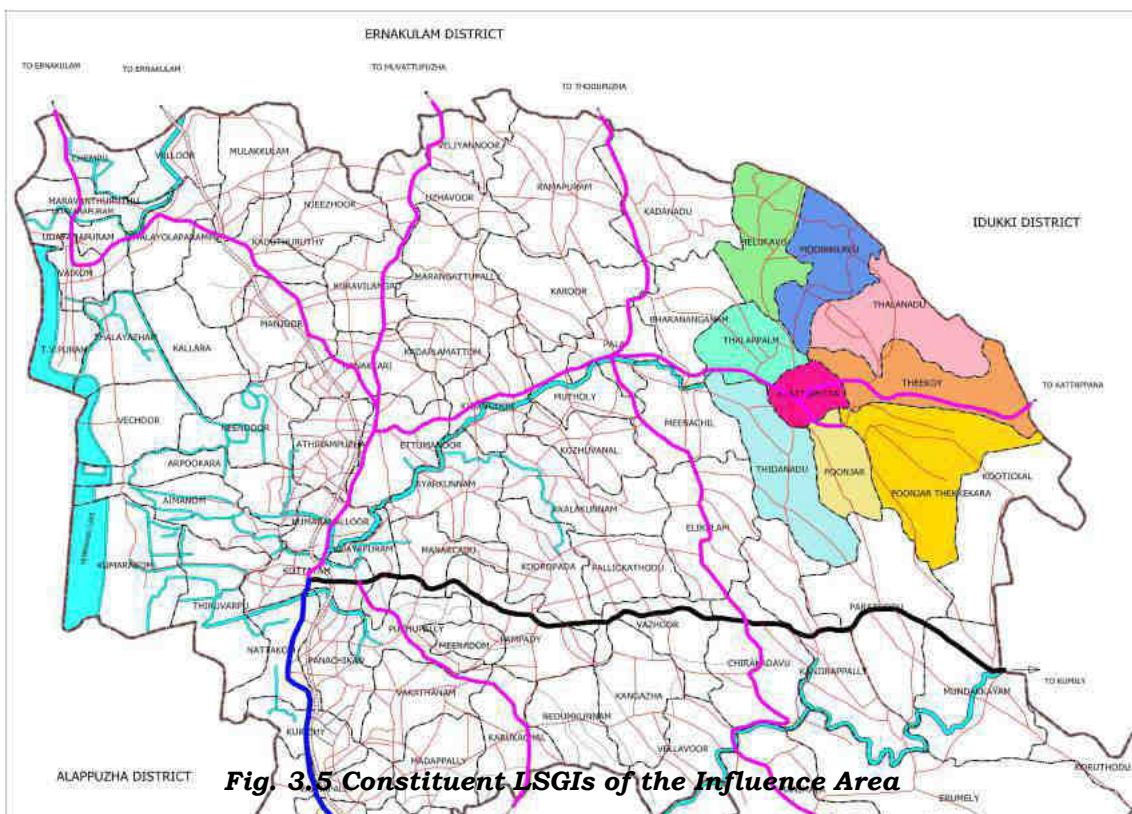
importance gets nullified. People from entire eastern area of the district still depend on Erattupetta for their shopping needs.

Erattupetta- Peerumedu road (SH14), Ettumanoor- Erattupetta- Poonjar road (SH32) and Kanjirapally- Erattupetta- Muttom road (SH44) are the major roads passing through Erattupetta. Town is well connected to the nearby urban centres through road – Thodupuzha (30km), Pala (12km), Kanjirappally (16km), Kottayam (40km), Ernakulam (80km), and Pathanamthitta (60km).

Erattupetta is the meeting point of two major highways, Athirampuzha – Poonjar Road (SH.32) and Erattupetta- Muttom road (SH44). It is also acting as a regional transportation node as number of KSRTC and Private Buses operating to various part of the state from Erattupetta. Considering the above facts, the Erattupetta block has been considered as the influence area of Erattupetta town.

### 3.4 CHARACTERISTICS OF THE INFLUENCE REGION

The constituent LSGIs of the influence area are shown in Figure 3.5.



The table 3.1 describes the characteristics of the influence region. The conversion of Erattupetta from Grama panchayat to Municipality happened in 2015. This municipality is still in its childhood stage of becoming urban centre for the neighbouring rural areas. The population density of Erattupetta municipality is the major reason for its conversion and facilities required for catering the need of this town is still in the threshold of development.

### 3.4.1 Population

Seven Grama Panchayats falls within the influence region of Erattupetta town. The area and population details of the concerned Local Governments (LGs) in the influence area of town are shown in Table 3.2. The total area of the region is 245.28 Sq: km. Erattupetta is the smallest municipality with an area of 7.50 Sq.Km and Poonjar Thekkekara is the largest Grama Panchayat with an area of 60.86 Sq.Km. Erattupetta is a census town as per 2011 census. It is a trading and service centre and it also has an influence area of its own. Erattupetta is proposed as a third order settlement in the District Urbanisation Report, Kottayam and it is elevated as a Municipality in the Budget of the State Government for the year 2013-14.

Pala and Erattupetta have almost same facilities except Medical facilities concerned. Pala has the status of taluk headquarters. Within the influence zone of Pala, Erattupetta is serving the needs of the eastern part of the Meenachil taluk.

**Table 3.2 Area and Population details of Influence region**

SL. No.	Name of the LSGIs	Area in sq.km.	Population 2011	Population 2001	Population density 2011(Persons / Sq:km)	Population growth rate 1991-02 (%)
1	Erattupetta	7.50	29705	25103	3960	18.33
2	Thidanad	37.19	20752	19880	558	4.38
3	Thalappalam	22.73	13361	12740	588	4.87
4	Thalanadu	32.24	7029	7337	218	-4.19
5	Moonilavu	33.41	8731	9065	261	-3.68
6	Poonjar	24.16	12649	12260	523	3.17
7	Teekoy	27.19	10852	10947	399	-0.86
8	Poonjar Thekkekara	60.86	17588	18623	289	-5.55
<b>TOTAL</b>		<b>245.28</b>	<b>120667</b>	<b>115955</b>		

Source: Census Reports



The total population of the region as per 2001 census was 115955 and it has increased to 120667 in 2011. Among the constituent local governments, Thidanad Grama Panchayat has the highest population of 20752 and Thalanad Grama Panchayat has the least population of 7029 as per 2011 census. Population of surrounding grama panchayats are comparatively very low compared to Erattupetta municipality.

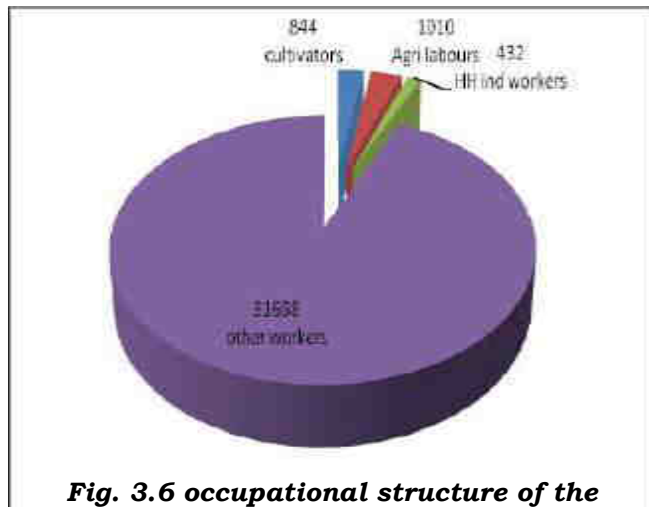
Population density of surrounding LSGs is very low compared to the density of Erattupetta municipality. Surrounding LSGs are mainly comprised of plantation area and hence the habitation area is limited. It is varying from 218 persons per sq: km in Thalanad Grama Panchayat to 3960 persons per Sq.Km in Erattupetta municipality. Average population density of the region is 849 persons per Sq.Km which is lower than the district population density of 895 persons per Sq.Km. The population density of Erattupetta municipality is 3960 persons per Sq.Km and it is more than double the population density of Pala Town (1409persons per Sq.Km). Moonilavu, Thalanad and Poonjar Thekkakara and Teekoy Grama Panchayats have comparatively low population density.

The average decadal (1991-2001) population growth rate of the region is 2.05%. It is greater than the population growth rate of the district (1.07%). This is due to the high growth rate of Erattupetta (18.33%), In the region the growth rate is high in Grama Panchayat of Thidanad (4.38%), Poonjar (3.17%) and Thalappalam (4.80%) The population growth rate is negative in Moonilavu (-3.68%) and Thaland (-4.19%) Grama Panchayats and except these two Grama Panchayats the other Grama Panchayats have more or less uniform population growth rate.

The literacy rate of the influence region as per 2011 census is 82.60%, which is lower than the district rate of 95.82%. The literacy rate is in the range of 82.60% to 90.46% and the highest literacy rate is in Vijayapuram Grama Panchayat and the lowest literacy rate is in the then Erattupetta Grama Panchayat.

### 3.4.2 Occupational structure

The occupational structure of the influence region is analyzed in this paragraph. The total workers of the region are 33348 and out of that, 28049 is main workers and 1698 is marginal workers. Out of 28049 main workers of the influence region Cultivators, agriculture labours, house hold industrial workers and other workers are 844, 1010, 432, 31698 respectively as per 2001 census.

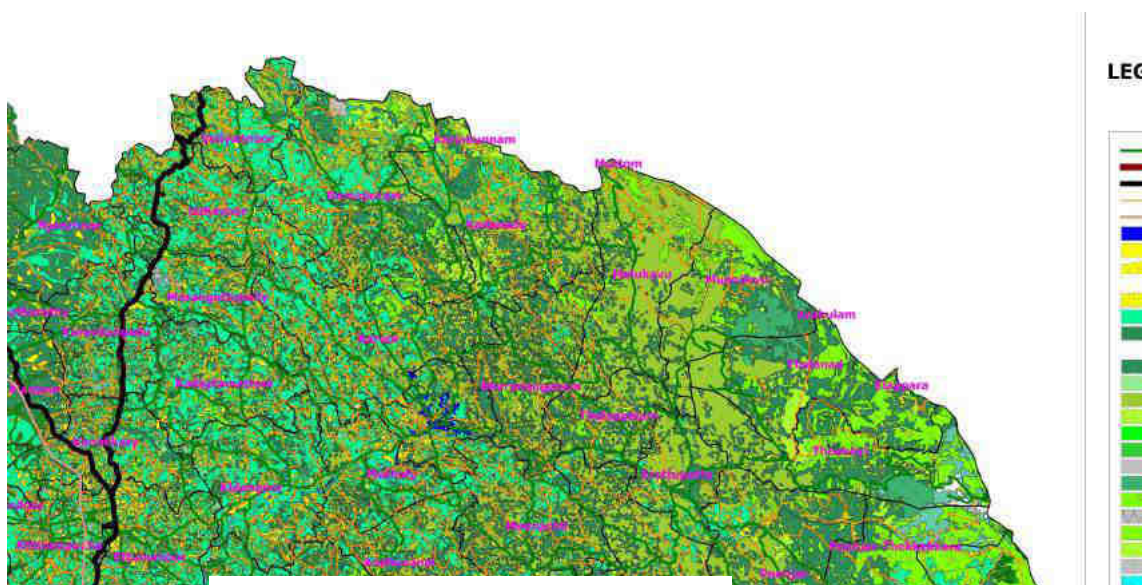


**Fig. 3.6 occupational structure of the influence region**

In the 2001 census the plantation labourers are included in the other workers category .The occupational structure of the region is shown in Figure 3.6. From the above analysis based on occupational structure it can be found that the economy of the region is characterized by primary sector activities.

### 3.4.3 Land use of the region

The land use of the region is another parameter taken for analysis. The source of the data for analysis of land use is SATELLITE DATA FROM IRS-P6, LISS-IV, AND MX/LISS/ PANS 2003-04 (India Satellite Data). The data form part of the Natural Resources and Environmental Data base (NREDB). The land use of the region is given in Figure 3.7



**Figure 3.7 Land use of the Region**

### 3.4.4 Industrialisation

No industrial establishments in the category of Large and Medium category are functioning in the region. The number of small scale industrial units in LSGs wise is shown in Table 3.3. The highest number of industrial units is seen in Erattupetta Municipality and the lowest number of industries is seen in Moonilavu Panchayat. This shows the nature of people settled in Erattupetta town. They are bound to keep their work place near their residence in the available infrastructure facilities, encroaching public places and it is seen mainly along the road sides.

**Table 3.3 Number of SSI Units in the region**

Sl.No	Name of the LSGs	No. of SSI units
1	Erattupetta	143
2	Thidanad	25
3	Thalappalam	38
4	Moonilavu	6
5	Poonjar	30
6	Thalanad	35
7	Teekoy	21
8	Poonjar Thekkekara	38

Source: District Industries

### 3.4.5 Facilities

The details of facilities available in the region are shown in Table 3.5. Lower order facilities are available almost uniformly in the Planning area.

**Table 3.4 Facilities available in the region**

Sl.No	Name of Panchayats/ Municipalities	LP and UP	HS	HSS	Arts & Science College	BEd College	Teachers Training Institute	Engineering College/ College of Science and Technology/Poly Technic	Banks(National/scheduled/ cooperative bank)	Seed Farm	Market -Weekly	ITC/ITI	Taluk Hospital /CHC	PHC	Veterinary Hospital	Krishi Bhavan	Fire station	Bus stand	Cinema theatre	Telephone exchange
1	ERATTUPETTA	5	2	4	1	1	0	1	10			0		1	1	1	1	2	2	1
2	POONJAR-THEKKEKARA	7	1	1	0	0	0	0	3		1	0		1		1		0		3

3	POONJAR	5	1	1	0	0	0	1	1			0		1		1		0	1	1
4	THIDANAD	6	1	1	0	0	0	0	7			0		1		1		0		1
5	TEEKROY	3	1	1	0	0	0	0	2			0		1	1	1		0		2
6	MOONNILAVU	8	1	0	0	0	0	0	1			0		1		1		0		1
7	THALAPPALAM	6	0	1	0	0	0	0	2			0		1		1		0		
8	THALANAD	4	2	0	0	0	0	0	1			0		1		1		0		

Erattupetta scores highest rank in the availability of facilities in the region. But these facilities are not enough to cater the need of the residents of Erattupetta.

### 3.4.6 Resources

The resources mainly available in the region are the Agro based products especially cash crops. Granite is the major mineral available in the region.

### 3.5 TRANSPORT LINKAGES

Erattupetta is connected to almost all the Grama Panchayats of the influence region by State Highways / Major District roads. In addition to this the neighboring areas are well connected to Erattupetta by other minor roads also. A good public transport system is available connecting Erattupetta with these settlements.

### 3.6 CONCLUSION

*In the regional context of the district, Erattupetta is proposed as a third order settlement as per District urbanization Report, Kottayam. In the district level analysis Primary activity (agriculture) is identified as the activity of the town. Three major roads included in the regional road network passes through Erattupetta town. The economy of the region is agriculture oriented and primary sector activity is the character of the region. The agro based products are the major resource of the region and the level of industrialization is very low. Grama Panchayats in the region are more or less plantation areas with no urban character. Erattupetta has very good transportation linkage with the settlements in the influence region. For higher order functions people are depending more on Kottayam town.*

## 4. DEMOGRAPHY

### 4.1 INTRODUCTION

The knowledge of basic demographic trends details etc.. are essential to sort out the states problems and exact needs of the area. It provides ideas regarding the habitation of people and other basic requirements which should be considered while planning the force. The population parameter serves as the basis of all planning process. The estimation of future population is needed for the assessment of various needs and distribution of activities in the available land. This chapter explains the population and demographical characteristics of Erattupetta town. Comparative study is also made with Kottayam district, Kerala state, similar towns and other local self-Government institutions etc. The study is based on the census reports.

### 4.2 POPULATION SIZE

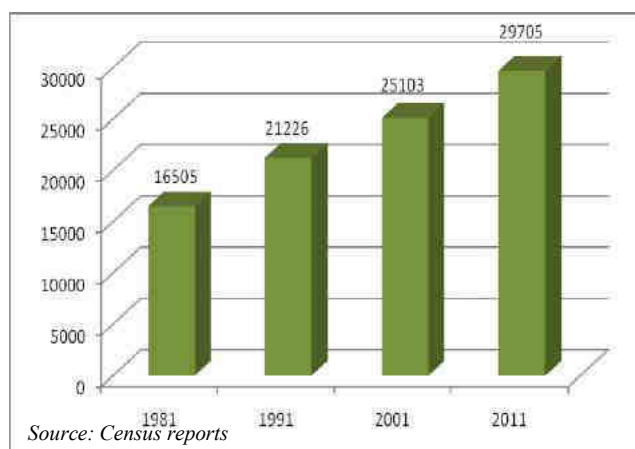
Population of Kerala as per 2011 census is 3, 33,87,677 and that of Kottayam district is 19,79,384. Kottayam district with 5.68% of total geographical area of the state accommodate 5.93% of total population of the state. Erattupetta has highest population size among the six urban centers of the district namely Kottayam, Changanassery, Pala, Vaikom and Ettumanoor.

**Table 4.1 Population size of Erattupetta town**

Year	1981	1991	2001	2011
Population	16505	21226	25103	29705

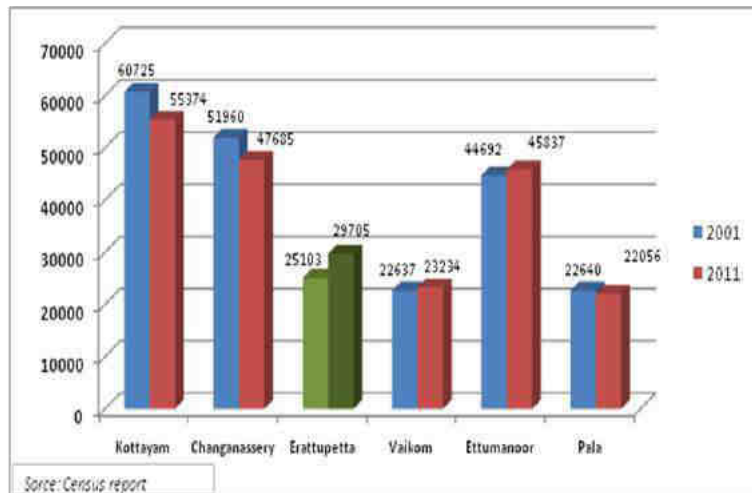
Source: Census Reports

The population of Erattupetta town as per 2011 census is 29705. It was 16505 as per 1981 census and there after showing an increasing trend up to 2011 and reached the figure of 29705 in 2011. The population size of the town since 1981 is shown in Table 4.1. It is also represented in Figure 4.1.



**Figure 4.1 Population size from 1981**

Erattupetta shares 1.50 % of District Population as per 2011 census. When comparing the population size of Erattupetta with other five Municipal towns of Kottayam district, Erattupetta is in the first position. As per 2011 census the six

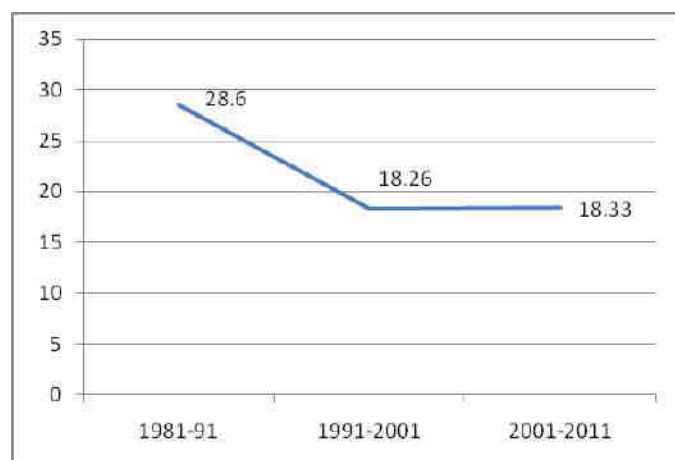


**Figure 4.2 Population size of municipalities**

Municipalities in the district, ie. Kottayam (old municipal limit), Changanassery, Erattupetta, Vaikom, Ettumanoor and Pala have population size of 55374, 47685, 29705, 23234, 45837 and 22056 respectively. Among the six urban centers Vaikom, Ettumanoor and Erattupetta Municipalities recorded an increase in population size during the period 2001-2011 and it is represented in Figure 4.2. Old municipalities except Vaikom municipality shows decreasing trend which shows the saturation level of population on their areas and new municipalities shows an increasing trend which shows their capacity to cater more population.

**4.3 POPULATION GROWTH RATE**

The decennial population growth rate of Erattupetta town from 1981-91 to 2001-2011 is shown in Figure 4.3. The growth rate of Erattupetta during 1981-91 was 28.60 % and then it was reduced to 18.26 % during 1991-2001 and further a little increase to 18.33 % during 2001-11. The population growth rate is stable during the decade from 2001 -2011 which shows the level reaching



**Figure 4.3 Decadal Population Growth Rate**

saturation. Comparison of population growth rate of Erattupetta town with that of Kottayam district, State (total) and state (urban) is shown in Table 4.2



and it indicates that growth rate of Erattupetta is greater than the district growth rate and state growth rate. Since the Gramapanchayaths are upgraded to Municipalities, Kerala state rural growth rate is decreasing. The decrease in rural growth rate implies the increase in urban growth rate.

**Table 4.2 Population Growth rate Comparison**

	1981-91	1991-2001	2001-11
Erattupetta Town	28.60	18.26	18.33
Kottayam District	9.45	5.45	1.32
Kerala State	19.24	14.32	4.86
Kerala State(urban)	37.64	60.92	83.80

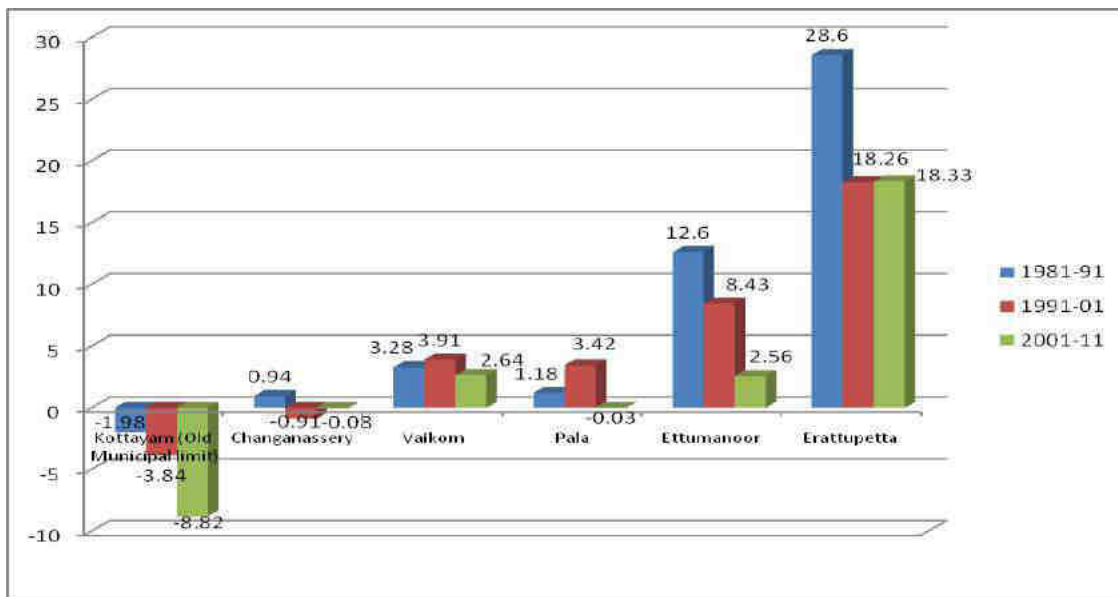
Source: Census Reports

Table 4.3 and Figure 4.4 gives the comparison of population growth rate of Erattupetta town with other five towns of the district Kottayam, Changanassery, Pala, Vaikom and Ettumanoor.

**Table 4.3. Population growth rate Comparison with other towns in the district.**

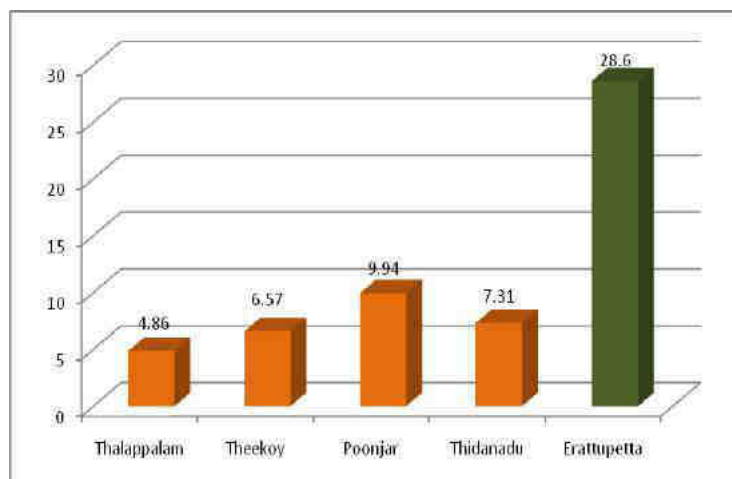
Town	Growth Rate (in %)		
	1981-91	1991-01	2001-11
Kottayam (Old Municipal limit)	-1.98	-3.84	-8.82
Changanassery	0.94	-0.91	-0.08
Vaikom	3.28	3.91	2.64
Pala	1.18	3.42	-0.03
Ettumanoor	12.60	8.43	2.56
Erattupetta	28.60	18.26	18.33

During the decades 1981-91, 1991-2001, 2001-11 Erattupetta has shown the highest population growth rate compared to Kottayam, Changanassery, Vaikom, Pala and Ettumanoor towns. The growth rate was higher during 1981-91 and it was reduced during 1991-01 and there was a mere increase in growth rate during 2001-11. It shows that all urban centers of the district are showing a decreasing trend in decennial population growth rate and recording even negative population growth rate.



**Figure 4.4 Comparison of Population growth rate**

The population growth rate of the period 1991-2001 of the Grama Panchayats in the immediate surroundings is shown in Figure 4.5. Four Grama Panchayats, Thalappalam, Teekoy, Poonjar and Thidanad recorded less population growth rate than Erattupetta. This shows



**Figure.4.5 Comparison of population growth rate of Grama Panchayats**

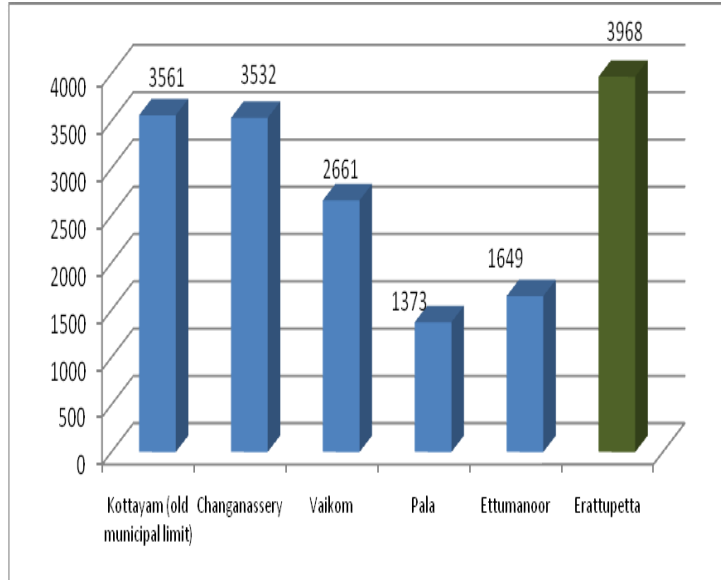
the high density of population in Erattupetta municipality when compared to surrounding Grama Panchayats. This also shows the character of the people to reside in the town area without disbursing to neighboring Grama Panchayats. The social bonding and culture of the people also results in the high density of Erattupetta municipality.

**4.4 POPULATION DENSITY**

Population density of Kerala is 819 person/sq.km and that of Kottayam district is 885 person/sq.km. Kottayam has eighth rank among the districts

of the state as per density of population of both in 1991 and 2001 census concerned.

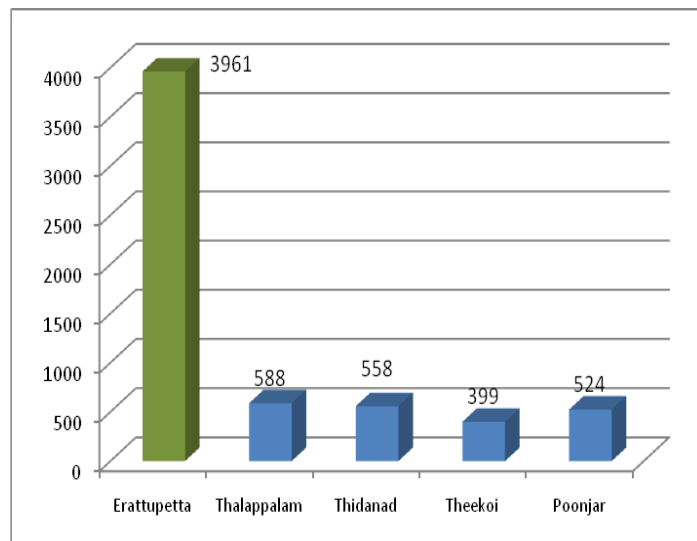
The population density of Erattupetta town as per 2011 census is 3960 persons/sq.km. It is higher than the population density of other five towns in the district, viz Kottayam (old municipal limit), Changanassery, Vaikom, Pala and Ettumanoor which have density of 3561 persons/sq.km, 3532 persons / Sq. Km



**Figure.4.6 Comparison of density of population with other urban centres**

2661 persons/Sq.Km, 1373 persons /Sq.km and 1648 persons/ Sq.Km respectively. The details are furnished in Figure 4.6.

In the district scenario also, the population density of Erattupetta is higher. While comparing with the density of surrounding Grama Panchayaths of Erattupetta Town ie, Thalappalam, Thidanadu, Theekoi and Poonjar Grama Panchayats it is seen that population density of these panchayats are lesser than that of Erattupetta. Figure 4.7 reveals the less population density in the surrounding Grama Panchayats



**Figure. 4.7 Comparison of density of population (2011) with surrounding Grama Panchayats**

## 4.5 WARD WISE POPULATION DENSITY

### 4.5.1 Gross Population Density

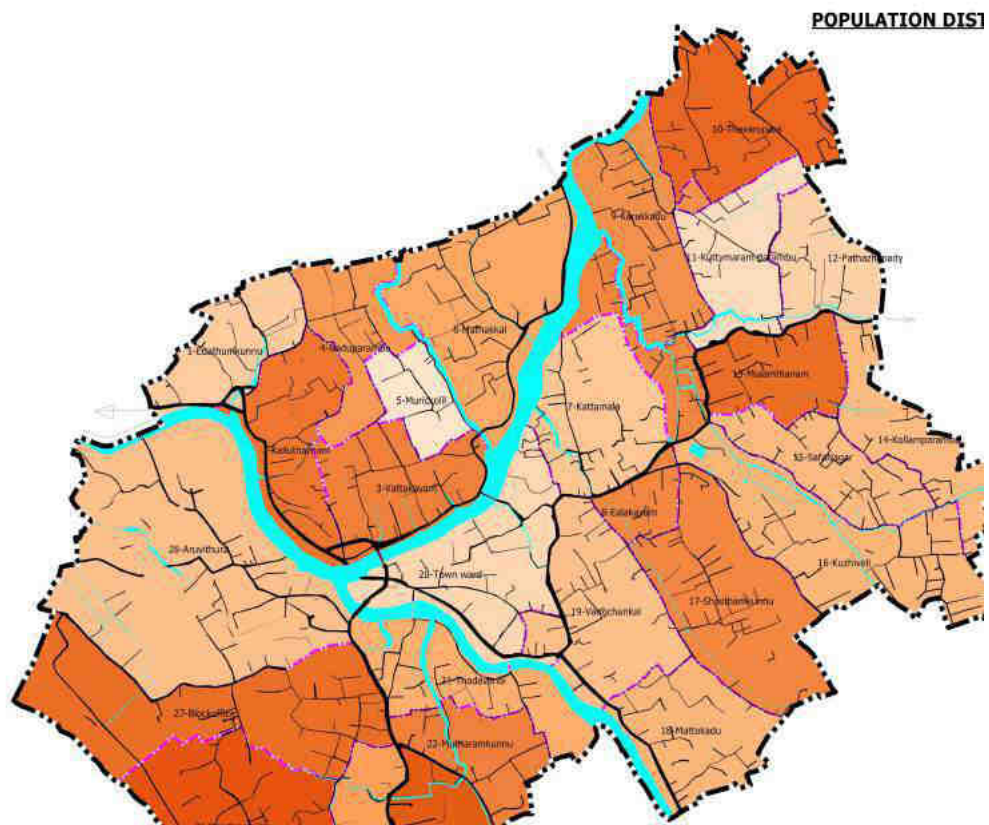
The variation in density of population among different wards of the town is shown in Table 4.4. As per 2011 census it is seen that the density of Population of the town is 3960 persons per Sq:km and in wards it varies from 1415 to 10144 persons per Sq Km. Generally the population density is higher. Murikkolil ward is the highly dense ward in Erattupetta municipality. The presence of agriculture land is very less in this area compared to other wards. The low density indicates the availability of agriculture land mainly rubber plantation where residential buildings are not thickly concentrated. Aruvithura ward is the low density ward.

**Table 4.4 Ward wise Gross Population Density**

Ward no.	Name of ward	Area (Sq.KM)	Population	Gross density (Persons/Sq:km)
1	Idathumkunnu	0.184668	1130	6119
2	Kalluthazham	0.256842	1029	4006
3	Vattakayam	0.232721	1037	4456
4	Nadooparambu	0.161778	1046	6466
5	Murikkolil	0.098481	999	10144
6	Mathakkal	0.418039	1062	2540
7	Kattamala	0.267359	1109	4148
8	Eelakkayam	0.197307	1041	5276
9	Karackadu	0.272466	1045	3835
10	Thevarupara	0.305318	1012	3315
11	Kuttimaramparambu	0.197652	1152	5828
12	Pathazhappadi	0.152618	1139	7463
13	Mulanthanam	0.171033	1020	5964
14	Kollamparambu	0.186031	1080	5805
15	Safa Nagar	0.180780	1080	5974
16	Kuzhiveli	0.367950	1071	2911
17	Sasthamkunnu	0.352824	1041	2950
18	Mattackadu	0.241901	1071	4427
19	Vanchankal	0.290036	1105	3810
20	Town Ward	0.354899	1147	3232
21	Thadavanal	0.234307	1067	4554
22	Mutharamkunnu	0.156082	1037	6644
23	Aanippadi	0.181074	1007	5561

24	Chirappara	0.204192	982	4809
25	Kallolil	0.168874	1058	6265
26	Kondoormala	0.421896	1003	2377
27	Block Office	0.448183	1030	2298
28	Aruvithura	0.780682	1105	1415
Total		7.485989	29705	3968

The pictorial representation of Ward wise population density is shown in Figure 4.8. It shows the spatial distribution of wards with different ranges of population densities.

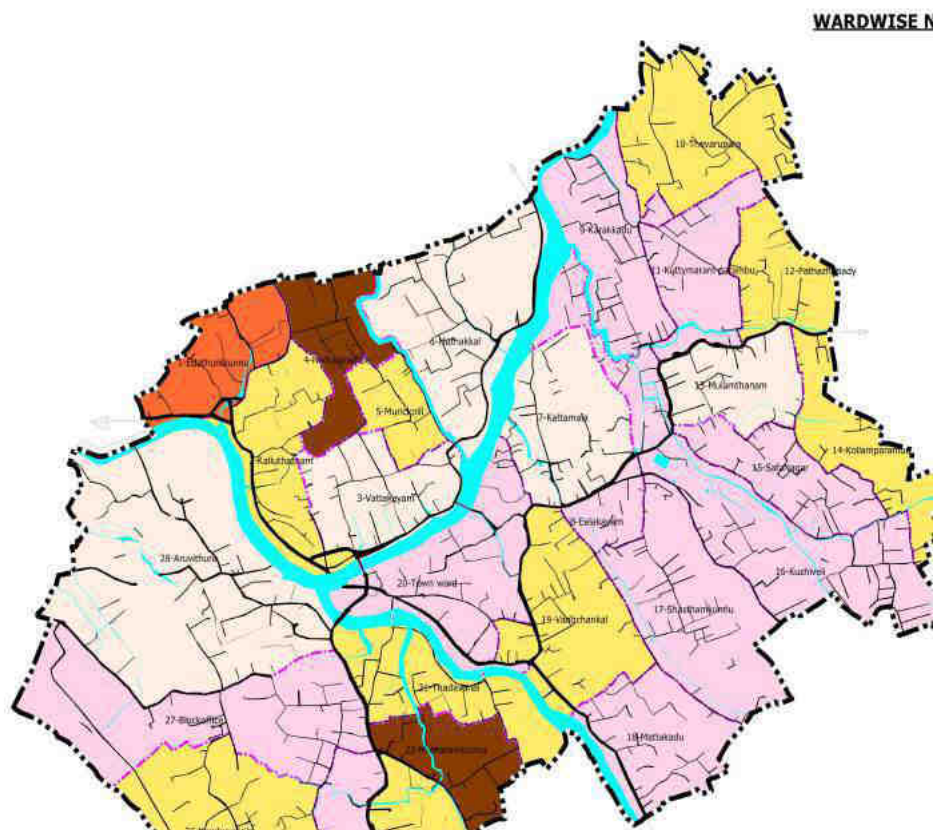


**Figure 4.8 Ward wise Population density**



### 4.5.2 Net Population Density

The net population density of the planning area is shown in Figure 4.9. The net population density is high in Mutharamkunnu with 15638 persons per sq;km followed by Nadooparambu ward with 14356 persons per sq;km. Idathumkunnu (12623 persons per sq;km) and Murikkolil (12294 persons per sq;km) are the other wards with high net density. The lower net population density recorded in Aruvithura and Mathakkal wards, where the net population density are 6014 and 6661 persons per sq;km respectively. The ward wise net population density is shown in Table 4.5.



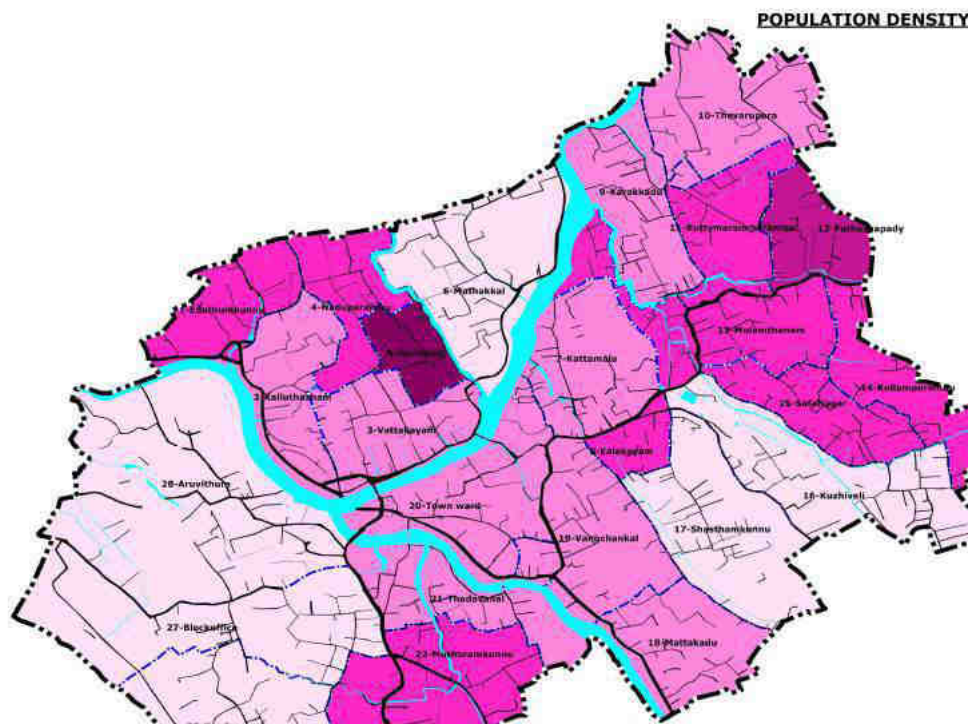
**Figure 4.9 Ward wise net Population density**

**Table 4.5 Ward wise Net density of population**

Ward no.	Ward	Residential area	Population	Net density (Persons/Sq:km)
1	Idathumkunnu	0.089517	1130	12623
2	Kalluthazham	0.09783	1029	10518
3	Vattakayam	0.148861	1037	6966
4	Nadooparambu	0.072862	1046	14356
5	Murikkolil	0.081256	999	12294
6	Mathakkal	0.159425	1062	6661
7	Kattamala	0.139781	1109	7934
8	Eelakkayam	0.126156	1041	8252
9	Karackadu	0.115237	1045	9068
10	Thevarupara	0.100689	1012	10051
11	Kuttimaramparambu	0.118468	1152	9724
12	Pathazhappadi	0.108806	1139	10468
13	Mulanthanam	0.12848	1020	7939
14	Kollamparambu	0.102055	1080	10583
15	Safa Nagar	0.126376	1080	8546
16	Kuzhiveli	0.12376	1071	8654
17	Sasthamkunnu	0.126231	1041	8247
18	Mattackadu	0.11402	1071	9393
19	Vanchankal	0.109422	1105	10099
20	Town Ward	0.134971	1147	8498
21	Thadavanal	0.093118	1067	11459
22	Mutharamkunnu	0.066313	1037	15638
23	Aanippadi	0.09843	1007	10231
24	Chirappara	0.082318	982	11929
25	Kallolil	0.115676	1058	9146
26	Kondoormala	0.099109	1003	10120
27	Block Office	0.123573	1030	8335
28	Aruvithura	0.183727	1105	6014
<b>Total</b>		<b>3.186467</b>	<b>29705</b>	<b>9322</b>

#### 4.6 POPULATION CONCENTRATION PATTERN

The population concentration pattern of the town is derived by arriving the cumulative population after arranging the wards in the descending order of density. The population concentration pattern of Erattupetta town (2011) is shown in Figure 4.10. It shows that 1/3 population of the town is concentrated in 10 wards, with an area of 4.48 sq. Km. which comprising 33.07% of total town area. 1/3 population of the town is concentrated in Chirappara, Murikkolil, Kondoormala, Aanippadi, Thevarupara, Mulanthanam, Kalluthazham, Block Office, Vattakayam and Mutharamkunnu. The 2/3 of population of the town is concentrated in 19 wards with total area of 4.89 sq. km. 65.33% of total town area.



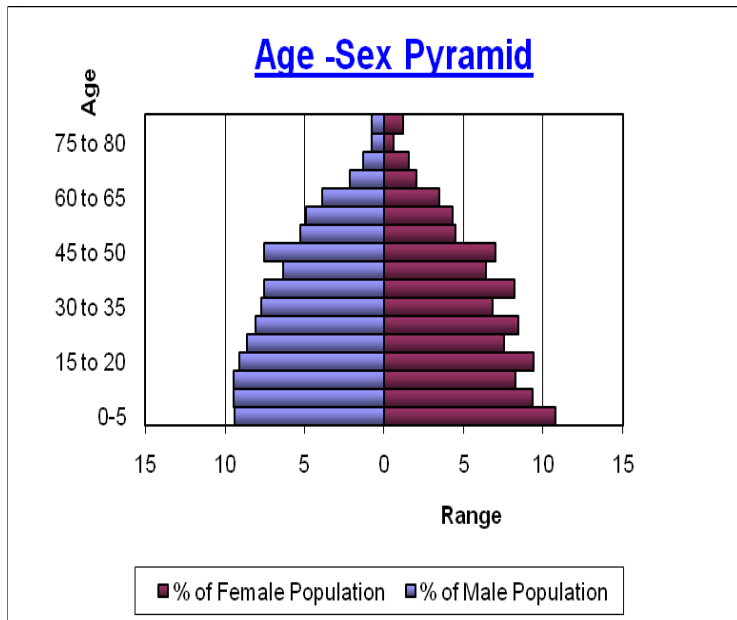
**Figure 4.10 Population concentration Pattern**

#### 4.7 AGE – SEX PYRAMID

Graphically there are different ways to present population data. The most important demographic characteristic of a population is its age-sex structure and the use of an age-sex pyramid, also known as a population pyramid, is considered as the best way to graphically illustrate the age and sex distribution of a given population.

An age-sex pyramid consists of two horizontal histograms joined together. It displays the percentage or actual amount of a population broken down by gender and age. The five-year age increments on the y-axis allow the pyramid to reflect the long-term trends in the birth and death rates.

The Age –sex pyramid of Erattupetta Town was derived from the Socio-Economic survey (2016) data and percentage of male and female population in different age group which is shown in Table 4.6 and in Figure 4.11. It shows that there is an increase in child population with male and female equity lent with small increase in population.



**Figure 4.11 Age –sex pyramid of Erattupetta Municipality**

**Table 4.6 Age –Sex Pyramid % male female population in different ranges**

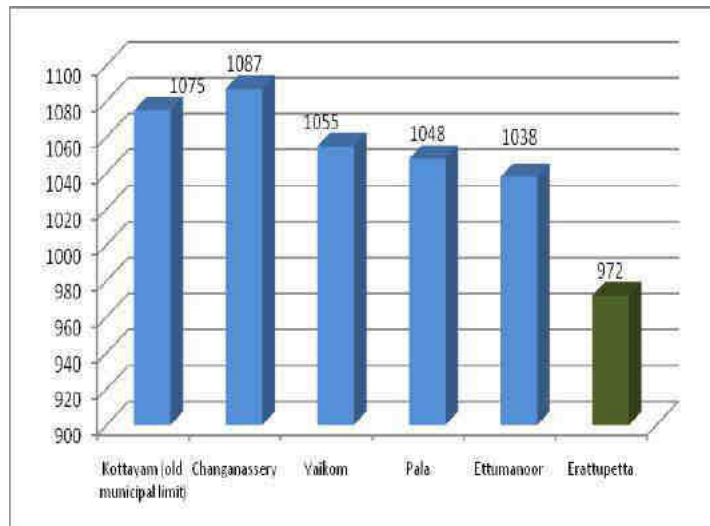
Age range	% of Male Population	% of Female Population	Age range	% of Male Population	% of Female Population
00 to 05	-9.41	10.8	45 to 50	-7.54	7.03
05 to 10	-9.44	9.34	50 to 55	-5.27	4.49
10 to 15	-9.44	8.25	55 to 60	-4.89	4.32
15 to 20	-9.09	9.41	60 to 65	-3.85	3.47
20 to 25	-8.62	7.56	65 to 70	-2.15	2.05
25 to 30	-8.08	8.45	70 to 75	-1.29	1.55
30 to 35	-7.73	6.8	75 to 80	-0.79	0.59
35 to 40	-7.51	8.22	> 80	-0.79	1.22
40 to 45	-6.31	6.44			

The pyramid shows that there is an increase in the birth rate. The number of male and female varies in different age group. The table shows that 10 age

groups have priority for male and 7 age groups have priority for female. The pyramid shows that population growth rate of female is higher than male for the age groups 15 to 20, 25 to 30 and 35 to 40 and male population is in higher percentage in many other groups. In the age group of 0 to 50 shows the high growth of population during 1966-2016. Age – sex pyramid of Erattupetta town shows that the highest percentage of male and female is seen in the age group of 15 to 20. Lowest percentage is seen in the age group above 70 years. In the case of child population, the age group below 5 years female domination is seen but both male and female domination is seen in the age group between 5 to 15 years.

**4.8 SEX RATIO**

The total male and female population of Erattupetta as per 2011 census is 15062 and 14643 respectively and the sex ratio of the town is 972. The variation in sex ratio of the town from 1981 and comparison with the district figures is shown in Table 4.7. It shows that, the sex ratio of the town has gradually increased from 932 to 973 in 2011.



**Fig.4.12 Comparison of Sex Ratio with other urban centres**

**Table 4.7 Sex Ratio – Comparison with District figures**

	1991	2001	2011
Kottayam District	1011	1029	1075
Erattupetta	932	963	972

Source: Census Reports

The sex ratio of the district and state (2011) are 1040 and 1084 respectively and the sex ratio of Erattupetta is less than these figures. While comparing



with other three towns in the district, as shown in Figure 4.12 Erattupetta is in the last position as far as sex ratio is concerned.

#### 4.9 LITERACY RATE

Literacy rate of Erattupetta town as per 2011 census is 82.60%, with male literacy rate of 51.66% and female literacy rate of 48.33%. Table 4.8 gives a comparison of literacy rate of Erattupetta town with corresponding values of state, district and other four Municipalities of the district. Among the five municipalities in the district, Erattupetta stands in the fifth place. Table 4.9 gives a comparison of literacy rate of Erattupetta town with nearby LSGS. Among the five nearby LSGS, Erattupetta stands in the sixth place.

**Table 4.8 Comparison of Literacy rates (2011)**

	Literacy rate (in percentage)
Kerala state	94.00
Kottayam district	97.20
Kottayam Municipality	97.69
Pala Municipality	97.63
Changanassery Municipality	97.19
Vaikom Municipality	96.84
Erattupetta Municipality	82.60

Source: Census Reports

**Table 4.9 Comparison of Literacy rates (2011) with nearby LSGS**

LSGS	Literacy rate (in percentage)
Teekoy	88.01
Thalappalam	88.83
Thidanad	88.60
Poonjar Thekkekara	88.84
Poonjar	88.01
Erattupetta	82.60

#### 4.10 HOUSEHOLD SIZE

The household size of Erattupetta town as per the 1991 census is 5.89. The corresponding figure for the district is 5.05. The number of occupied households and household size from 1991 is given in Table 4.9. It shows that

the household size, which was 5.89 in 1991, has been reduced to 5.26 in 2001 and reduced further to 4.58 in 2011. It shows the success of family planning programme and decrease in the size of family.

**Table 4.10 Variation in household size**

	1991	2001	2011
No. of households	3604	4769	6486
Household size	5.89	5.26	4.58

Source: Census Reports

#### 4.11 CONCLUSION

*Among the six towns of the district, three towns Kottayam, Changanassery and Pala recorded negative growth rate during the decade 2001-2011. The growth rate of population in the surrounding Grama Panchayats during 1991-2011 is less compared to Erattupetta Municipality. The population density of Erattupetta is higher when compared with other towns in the district and the neighboring Grama Panchayats. The population density of different wards in the town is varying from 982 to 1152. Highest population density is seen in Murikkolil ward. The age sex pyramid of the town shows the availability of human resource in the youth stage are more than old people and children which will help in the progress of the town. The sex ratio of Erattupetta is less than state and district figures. Among the urban areas in Kottayam district, Erattupetta town holds large population and population density.*

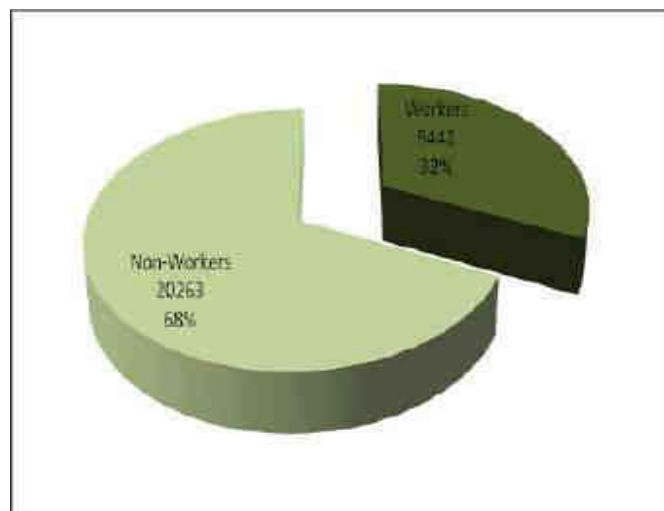
## 5. OCCUPATIONAL STRUCTURE

### 5.1 INTRODUCTION

The occupational structure is described and analysed by means of various classificatory schemes, which group similar occupations together according to specific criteria such as skill, employment status, or function. In this chapter the existing economic base of the town based on the occupational structure is studied. Work participation rate and its temporal variation, the occupational structure and the change that has happened over the decades.

### 5.2 WORK FORCE OF THE TOWN

The work force of a place is usually indicated by work participation rate (WPR) which is the ratio of total workers (main and marginal) to the population of the place and it is generally expressed as percentage. As per 2011 census the work participation rate of Erattupetta Town is 32%. It means, out of total population of 29705 persons, 9442 people are workers. Out of 9442 total workers, 8137 workers are male workers and 1305 workers are female workers. The remaining

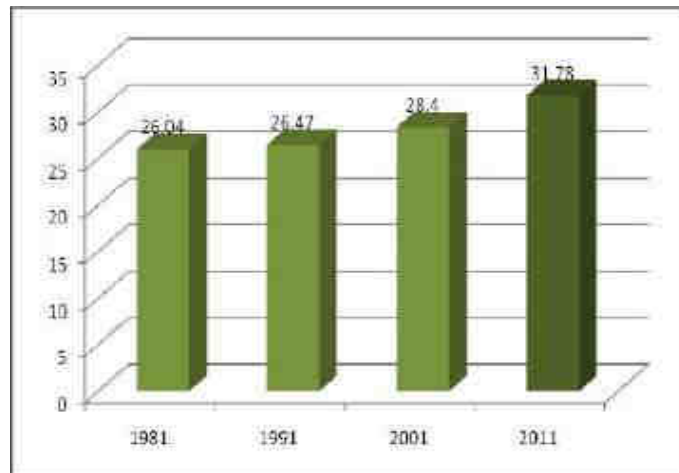


**Fig 5.1 Workers and non workers of Erattupetta town in 2011**

20263 persons are non-workers which is 68% of total population, 6925 male and 13338 female. The percentage of workers and non-workers are shown in Figure 5.1.

The temporal variation of work participation rate of Erattupetta is shown in Table 5.1 and Figure 5.2.

The number of total workers and work participation rate of Erattupetta is steadily increasing from 1981 to 2011. The rate of increase in work participation is less during 1981- 91. But there is a variation in work participation during 2001 and 2011. It indicates developments and new opportunities came from the developments.



**Figure 5.2 Temporal Variation of WPR in Erattupetta Municipality**

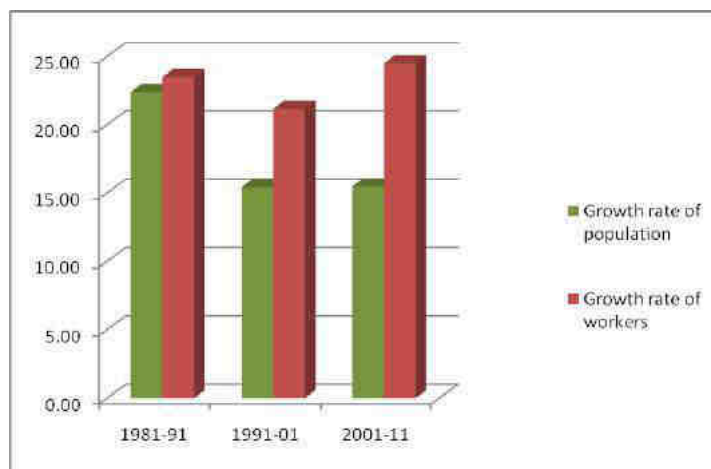
**Table 5.1 Temporal variation in Work Participation Rate**

Year	1981	1991	2001	2011
Population	16505	21226	25103	29705
Total workers	4298	5619	7128	9442
Work participation rate	26.04	26.47	28.40	31.78

Source: Census 1981, 1991, 2001 and 2011

The growth rate of population and the growth rate of workers from 1981-2011 are shown in Table 5.2 and Figure 5.3. Growth rate of population is decreased from 1981-91 to 1991-01.

But there is a nominal increase in population in 2001-11 compared to 1991-01. The growth rate of workers was decreased in 1991-01 compared to 1981-91. But during 2001-11 the growth rate of workers is increased from 1991-01 period.



**Figure 5.3 Comparison of Growth Rate of Population and Workers**

By comparing the growth rates it is clear that the growth rate of

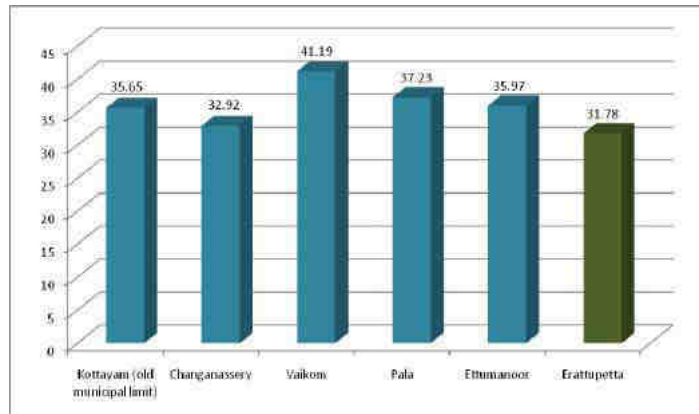
workers is more than the growth rate of population. It is interesting to note that there is considerable increase in the number of workers, even though the population is reduced during the period 1991-01 and 2001-2011. It indicates the enhancement of the economic base of the town and creation of new opportunities.

**Table 5.2 Comparison of Growth Rate of Population and Workers**

	1981-91	1991-01	2001-11
Growth rate of population	22.24%	15.44%	15.49%
Growth rate of workers	23.50%	21.17%	24.50%

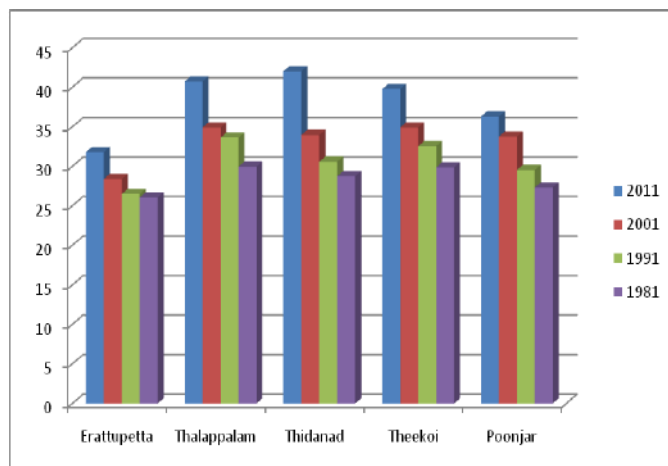
Source: Census 1981, 1991, 2001 and 2011

Comparison of work participation rate of Erattupetta is made with corresponding figures of other urban centers of the district (as per 2011 census) and surrounding Grama Panchayats (as per 2011 census). The work participation rate of Erattupetta is lesser than other municipalities. The comparison is shown in figure 5.4.



**Figure 5.4 Work Force Participation Rate – comparison**

Comparison of work participation rate of Erattupetta with surrounding Grama Panchayats is shown in Figure 5.5 and it shows that work participation rate of all surrounding Grama panchayats are higher than that of Municipal area. By comparing the work force participation rate it is clear that the WFPR is increasing in all the panchayaths and in the municipality.

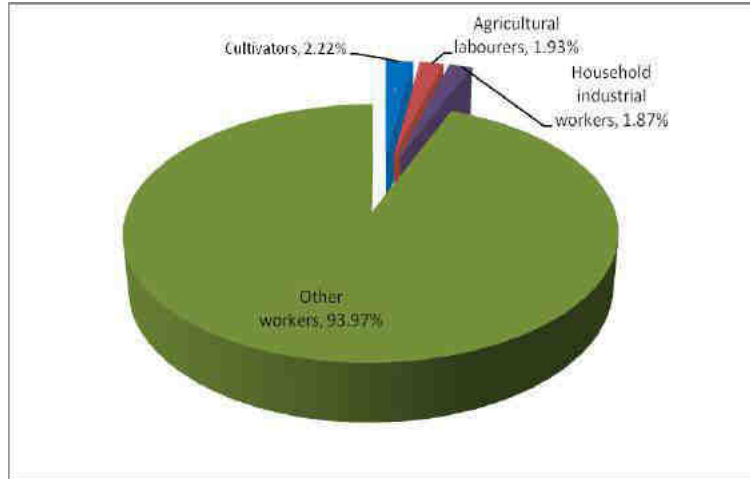


**Figure 5.5 Work Force Participation Rate – a comparison with adjacent local bodies**



### 5.3 OCCUPATIONAL STRUCTURE

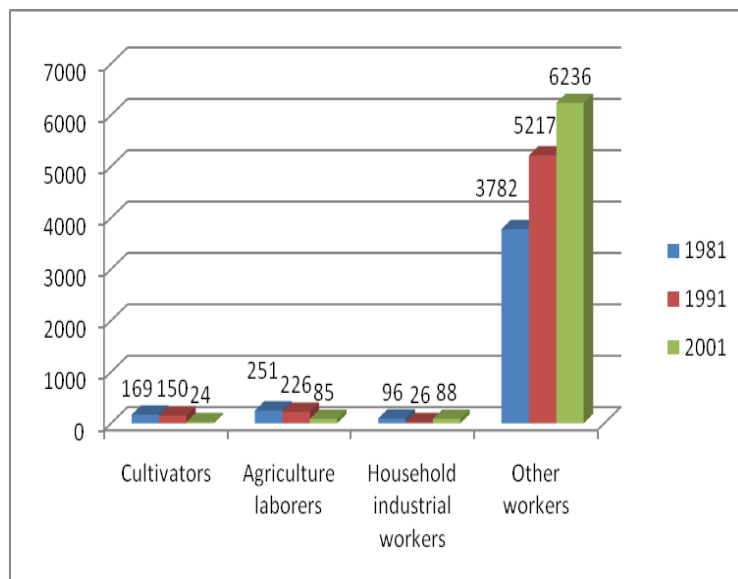
In the 2011 census, the main workers are classified into four categories viz. Cultivators, Agricultural labourers, Household industrial workers and other workers. The Other workers category includes the primary sector workers like



**Figure 5.6 Occupational Structure of Erattupetta 2016**

fishermen and workers engaged in mining and plantation work. Occupational structure of Erattupetta (2016) is shown in Figure 5.6. In the town, 93.97 % of workers belong to other workers category, 1.93% of workers are Agricultural laborers, 2.22 % of workers are cultivators, and 1.87% Household industrial workers.

The temporal variation of occupational structure of Erattupetta is shown in Table 5.3. and figure 5.7. It shows that number of laborers engaged in primary sector (cultivators and agriculture labours) is showing a decreasing trend over the years and there is corresponding increase in other workers category. The number of household industrial workers is less in 1991 but in 2001 there is an increase.



**Figure 5.7 Occupational Structure of Erattupetta - Temporal variation**

**Table 5.3 Occupational Structure of Erattupetta - Temporal variation**

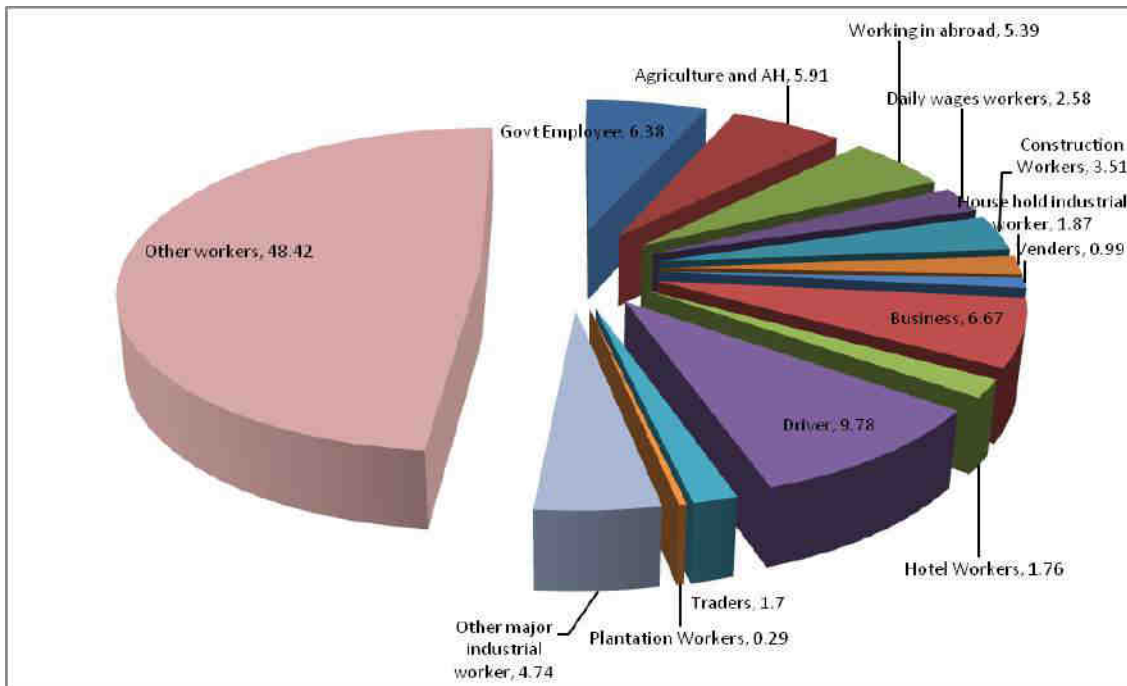
Year	Cultivators	Agriculture laborers	Household industrial workers	Other workers
1981	169	251	96	3782
1991	150	226	26	5217
2001	24	85	88	6236

Source: Census 1981, 1991, 2001

More detailed composition of workers is available from the socio-economic survey 2016 and it is given in Table 5.4 and Figure 5.8. The survey reveals that, only 6.98% of workers are Government employee and 6.67% of workers are doing works related to business. Workers engaged in agriculture and animal husbandry sector constitute 5.91% and 5.39% of workers are working outside the country. The workers doing other types of works are 48.42% which is having the highest priority.

**Table 5.4 Composition of Workers- 2016**

Category	Percentage	Category	Percentage
Govt Employee, teachers, pensioners	6.38	Hotel Workers	1.76
Agriculture and AH	5.91	Driver	9.78
Working in abroad	5.39	Traders	1.70
Daily wages workers	2.58	Plantation Workers	0.29
Construction Workers	3.51	Other major industrial worker	4.74
House hold industrial worker	1.87	Other workers	48.42
Venders	0.99		
Business	6.67		



**Figure 5.8 Composition of workers as per Socio-Economic survey 2016**

#### 5.4 CONCLUSION

The work participation rate of Erattupetta town is less compared to the district and other urban centers of the district and less than that of surrounding grama panchayats. The growth rate of workers is more compared to the population growth rate. The occupational structure shows that majority of workers belong to the other workers category. This shows the emerging trades like trading of hill product commodities and wood/furniture etc. The work participation rate is growing but new ventures has to be identified to engage the young human resource available in the municipality.

## 6. LAND USE

### 6.1 INTRODUCTION

The structure of any city is best understood through the study of the extent and distribution of various existing land uses. The land use of an area is indicated by the predominant activity of that area, be it residential, commercial, public and semi-public, transportation, agriculture, park and open spaces, industrial etc. Hence the analysis of existing land use is inevitable to understand the predominant economic activity of the area and to assess the availability of suitable land for the future urban development activities of the town. From this it is possible to draw the future requirement of land for various uses in the town as per the sectoral analysis. The Department of Town and Country Planning conducted detailed land use survey in the year 2016, as part of preparation of Development Plan for Erattupetta.

### 6.2 GROWTH OF THE TOWN

The exact year of origin of *Erattupetta* town is in 1962 which was established by Sri. Pattom Thanu pilla. Parts of Poonjar, Thalappalam and Thidanad panchayats included in this municipality. Erattupetta is the second large commercial city in Kottayam district . The commercial activities came diminished in connection with the coming of Allapuzha harbor. Aruvithura church is one of the oldest pilgrim centre at Erattupetta. Valiachan mala is a catholic pilgrim hill station near the town is a major tourism destination. P.T.M.S (Poonjar, Theekoy motor service) is the first motor service in Erattupetta. Very large land sliding happened in 1958 which changed the face of Erattupetta. In 1887 Erattupetta Kanjirappally road was built up for The John Daniel Manro for horse racing. The major travel corridor from Erattupetta town is to Pala, Teekoy, Kanjirappally and Poonjar . As its name indicates Erattupetta is the junction of two waterbodies.

### 6.3 EXISTING LAND USE 2017

The existing land use survey was conducted during the year 2017. Residential, Agriculture, Commercial, Public land uses are the major land use of the town and 55% of the total town area is coming under developed land.

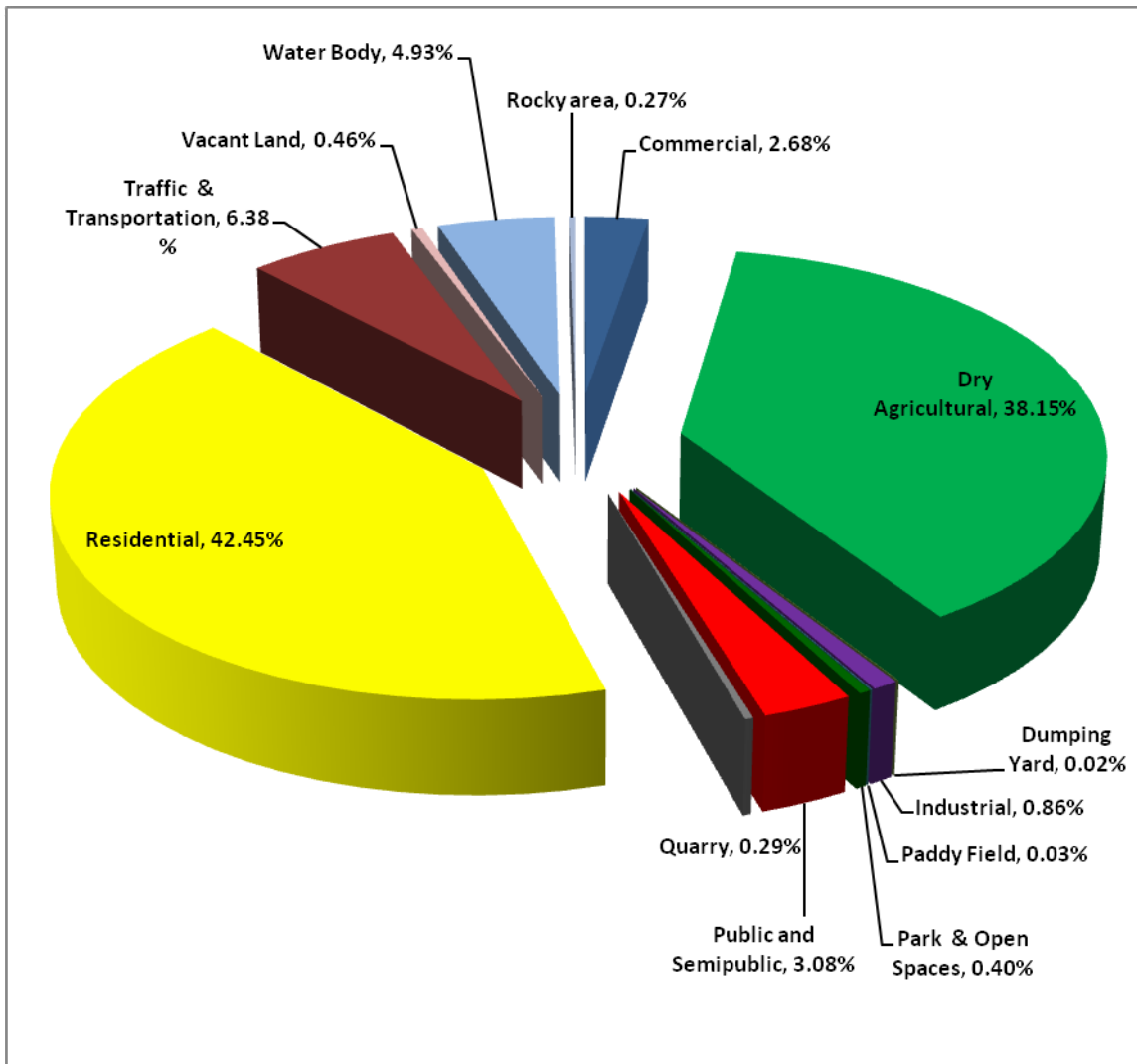
The land use break up of Erattupetta is given in Table 6.1. Residential (42.55%) land dominates Erattupetta town followed by Dry agriculture (38.15%) land uses. Public and Semi public (3.08%), water body (4.93%) and Commercial (2.68%) has significant area. Road networks and transportation facilities occupies 6.38% of land in Municipal area. Land area of 0.86% occupies industrial use. Other land uses like open spaces, Quarry have only nominal area in Erattupetta Town. The land use break up of Erattupetta town is also shown in Figure. 6.1. The Figure 6.2 shows the Existing land use map of Erattupetta 2017.

**Table 6.1 Existing Land use break up of Erattupetta Municipality 2012**

Sl. No.	Land use	Area in Sq. km.	Percentage
1	Commercial	0.201014	2.68
2	Dry Agricultural	2.863879	38.15
3	Dumping Yard	0.001543	0.02
4	Industrial	0.064484	0.86
5	Paddy Field	0.002136	0.03
6	Park & Open Spaces	0.030	0.40
7	Public and Semipublic	0.231171	3.08
8	Quarry	0.022097	0.29
9	Residential	3.186483	42.45
10	Traffic & Transportation	0.478724	6.38
11	Vacant Land	0.034636	0.46
12	Water Body	0.369679	4.93
13	Rocky area	0.020158	0.27
	<b>Total</b>	<b>7.506004</b>	<b>100</b>

Source: - Land use Survey 2017





**Fig. 6.1 Existing Land use break up of planning area**

It is clearly seen from the chart and the table that the residential and dry agriculture land use dominates in Erattupetta Municipality. The rubber plantation is the major cultivation of the town. The presence of Public and Semipublic land use shows the existence of social infrastructure like educational and Health institutions and other public and religious institutions.

The total extent of land coming under residential use is 318.60 hectares which accounts 42.45% of the total town area. 38.15% agriculture land is under dry cultivation area. It is represented in Figure 6.1

**Residential Area** occupies the major area of Erattupetta town. Residential density is comparatively high in this municipality. 318.60 hectare of land which is 42.45% of land occupies residential activity.

**Dry Agricultural area** occupies second position in land use with 2.86 Sq. km which is 38.15 % of the total town area. It is distributed in almost all parts of the town and is mixed up with the agriculture land

**Commercial area** is mainly concentrated in the town centre along major travel corridors of the town. The concentration of commercial activity is mainly there in Pala - Poonjar road, central area of town and Nadakkal area. Few pockets of commercial land use are distributed in other parts of the town also.

**Public and Semi-public areas** includes land where Government and semi-Government establishments, religious centers, educational institutions, health facilities etc are functioning. It is distributed in almost all wards of the town and 0.23 Sq. km. of land which is 3.08% is under this use in the Erattupetta Town.

Only 0.06 Sq. km of land, which constitutes 0.86% of total municipal area comes under **Industrial land use**. Wood based furniture making industry is one of the major industry in Erattupetta.

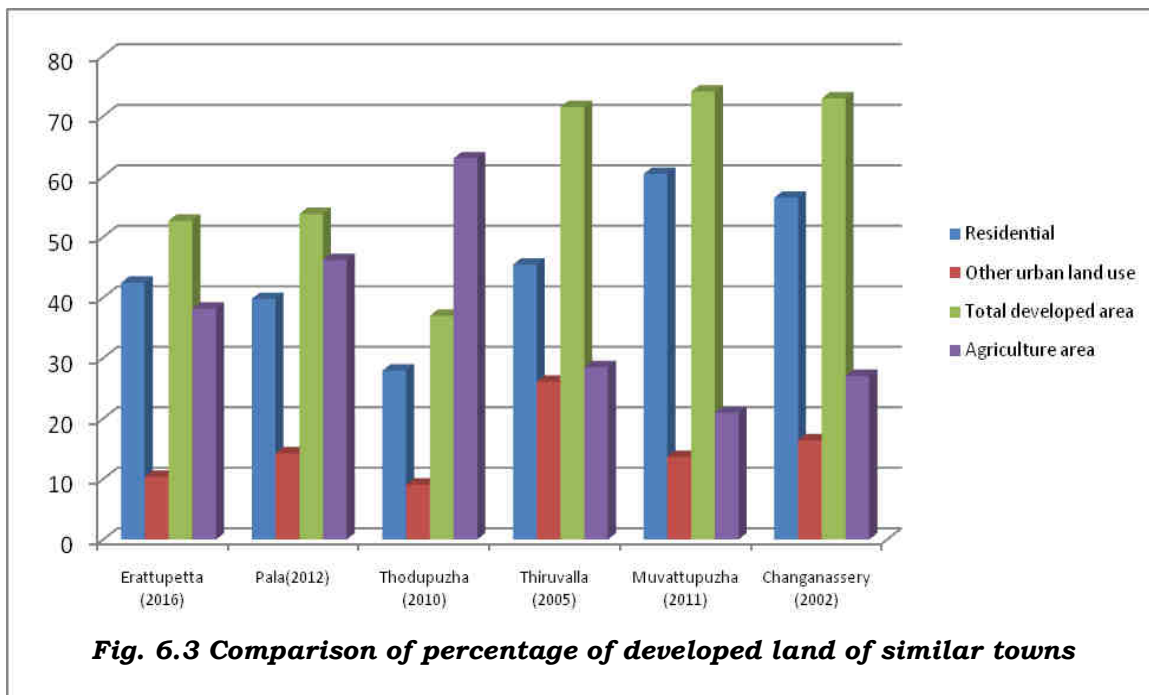
The **Traffic and Transportation use** of the town mainly consists of roads and terminal areas. 0.48 Sq. km of land, which is 6.38% of total land use comes under transportation use.

36.96 hectares of land which is 4.93% of total area comes under **Water bodies**. Mainly the Meenachil river and its tributaries constitute the water bodies in the town. Only 3 hectares of land, which accounts for 0.40% town area comes under the category of **Parks and open spaces**. Lack of leisure places are seen in the Town.

**Rocky Area** in the town have only nominal area which is 0.27% of total area.

The percentage of agricultural land use is comparatively low in Erattupetta when compared to similar towns in the state. Muvattupuzha municipality shows maximum percentage of Residential land use among other Municipalities. The percentage of Agriculture land is high in Thodupuzha and Pala Municipalities. The percentage of commercial land use is high in Changanassery and it is followed by Pala Municipality showing the high Trade and Commercial activities of the town.

In the case of Public and Semi Public land use Thiruvalla has the highest percentage followed by Changanassery and Pala. The percentage of industrial land use is nominal in almost all Municipalities. Generally when compare with other towns, Erattupetta is an agriculture dominant town. Muvattupuzha, Changanassery and Thiruvalla have more percentage of developed area.



**Table 6.2 Comparison of percentage of developed land of similar towns**

Land use	Erattupetta (2016)	Pala (2012)	Thodupuzha (2010)	Thiruvalla (2005)	Muvattupuzha (2011)	Changanassery (2002)
Residential	42.45	39.77	27.92	45.45	60.44	56.52
Other urban land use	10.37	14.25	9.06	26.06	13.63	16.41
Total developed area	52.72	53.81	36.98	71.51	74.07	72.93
Agriculture area	38.15	46.19	63.02	28.49	20.93	27.03

## 6.4 CONCENTRATION PATTERN OF LAND USES

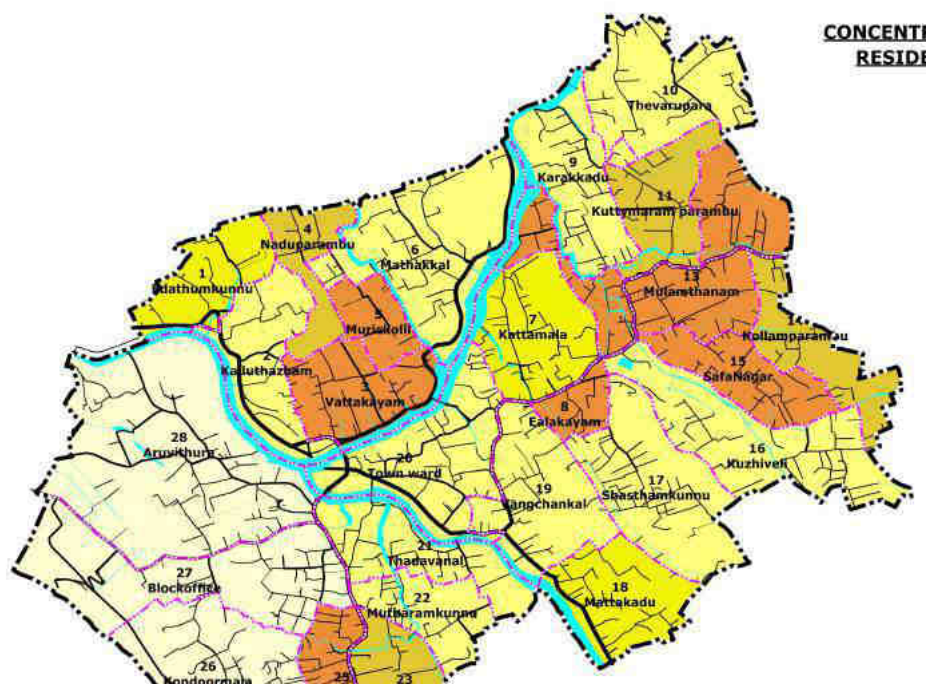
### 6.4.1 Introduction

The concentration pattern of a particular land use gives an idea about where that particular land use is concentrated within the town. The concentration pattern of a land use can be ascertained by the concentration index (CI) of that land use. The concentration index (CI) of a particular land use = ((Area of that land use in a ward) / (Total area of the ward)) / ((Area of that land use in the town) / (Total area of the town)). The concentration index values may be greater than one, equal to one or less than one. The CI greater than one for a particular land use indicates that the land use under consideration is concentrated more in that ward than other wards of the town. Using the above method, concentration pattern of major land use categories - Residential, Agriculture, Commercial, Public and Semi Public land uses are analysing in the subsequent paragraphs.

### 6.4.2 Concentration pattern of Residential land use.

The concentration pattern of residential land use is shown in figure 6.4. The concentration index of residential land use varies from 0.59 to 1.9 and the residential area is spread in all wards of the town.

The ward with higher value of Concentration index is seen in Murikolil ward. Generally wards along major travel corridor have high Residential use concentration. The wards with low value of concentration index of residential land use are seen in areas where dry agriculture is predominant, ie in Kondoor mala and Aruvithura where the index is 0.59





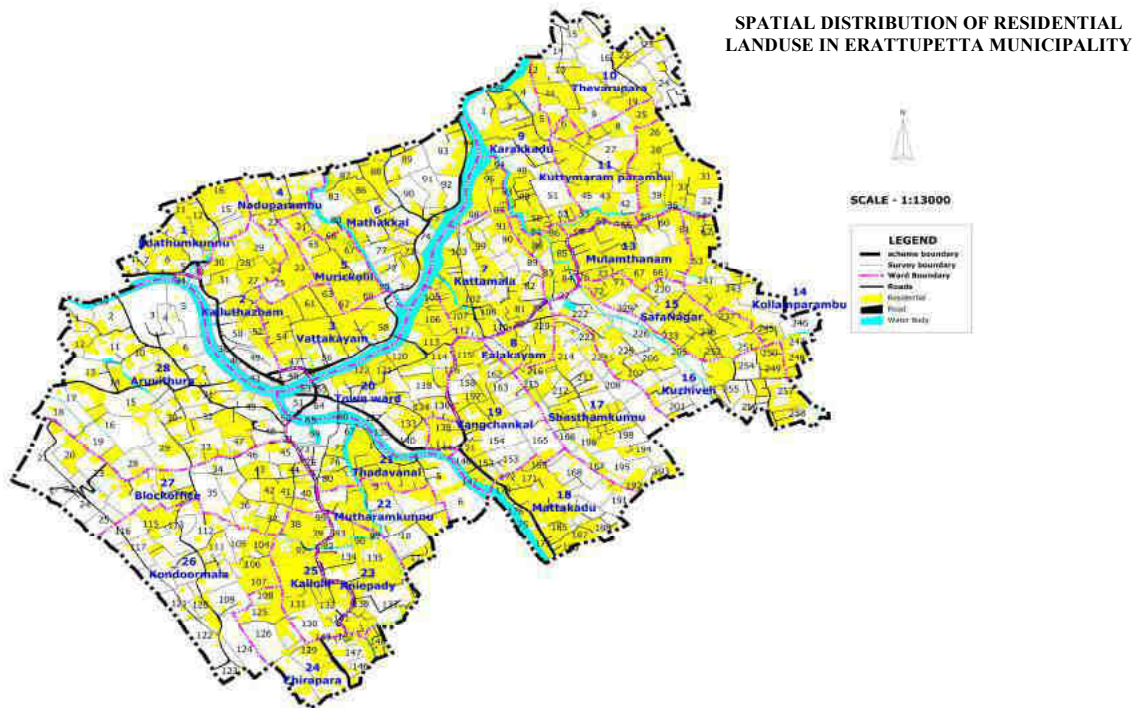
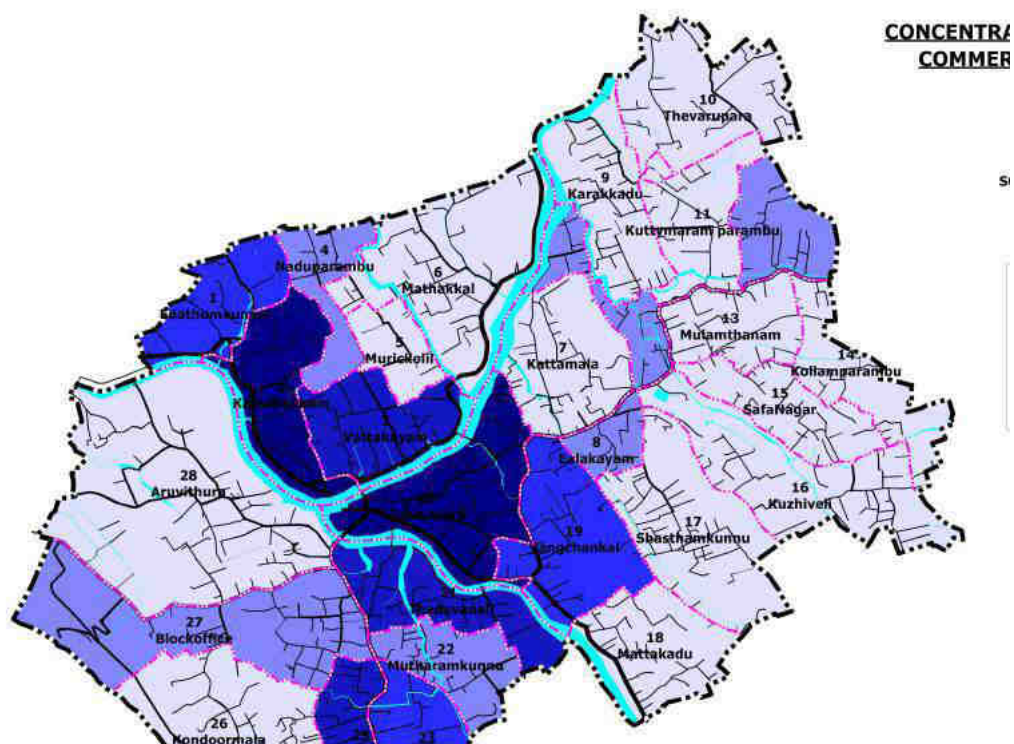
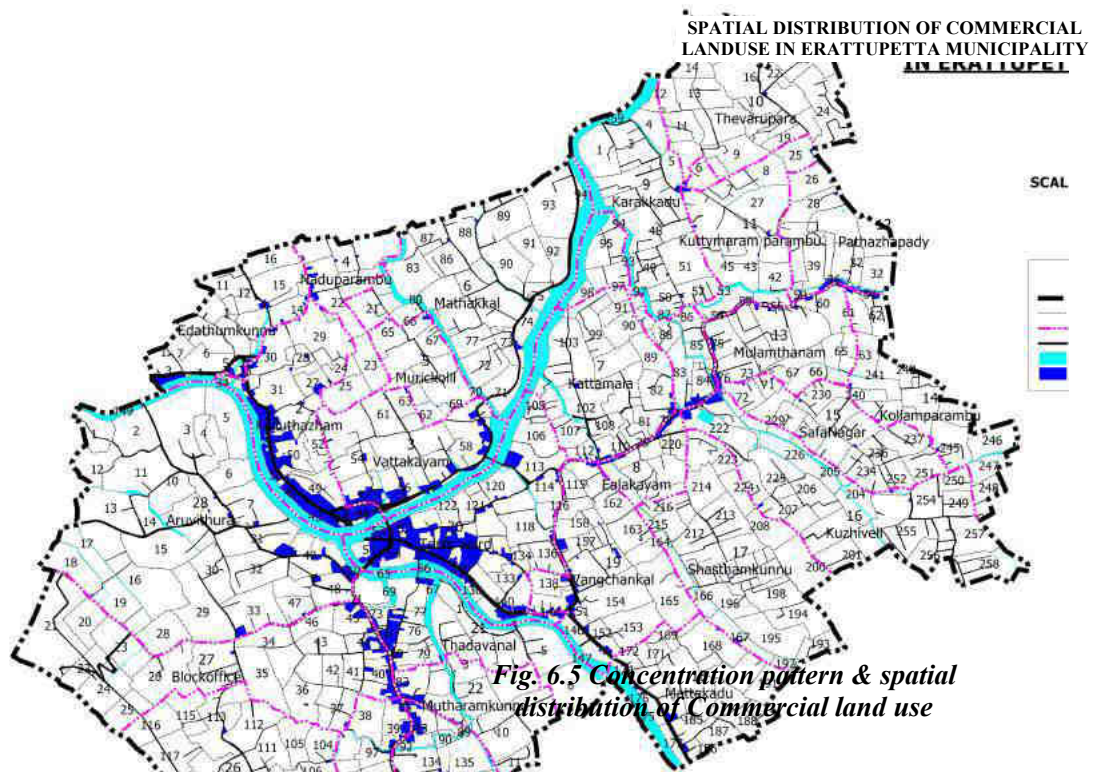


Fig. 6.4 Concentration pattern and spatial distribution of Residential land use

**6.4.3 Concentration pattern of Commercial land use.**

The concentration pattern of commercial land use is shown in figure 6.5 The concentration index of commercial land use varies from 0.025 to 5.9. High concentration of commercial land use is seen in, Town ward. Lowest concentration index is seen in Thevarupara Ward.

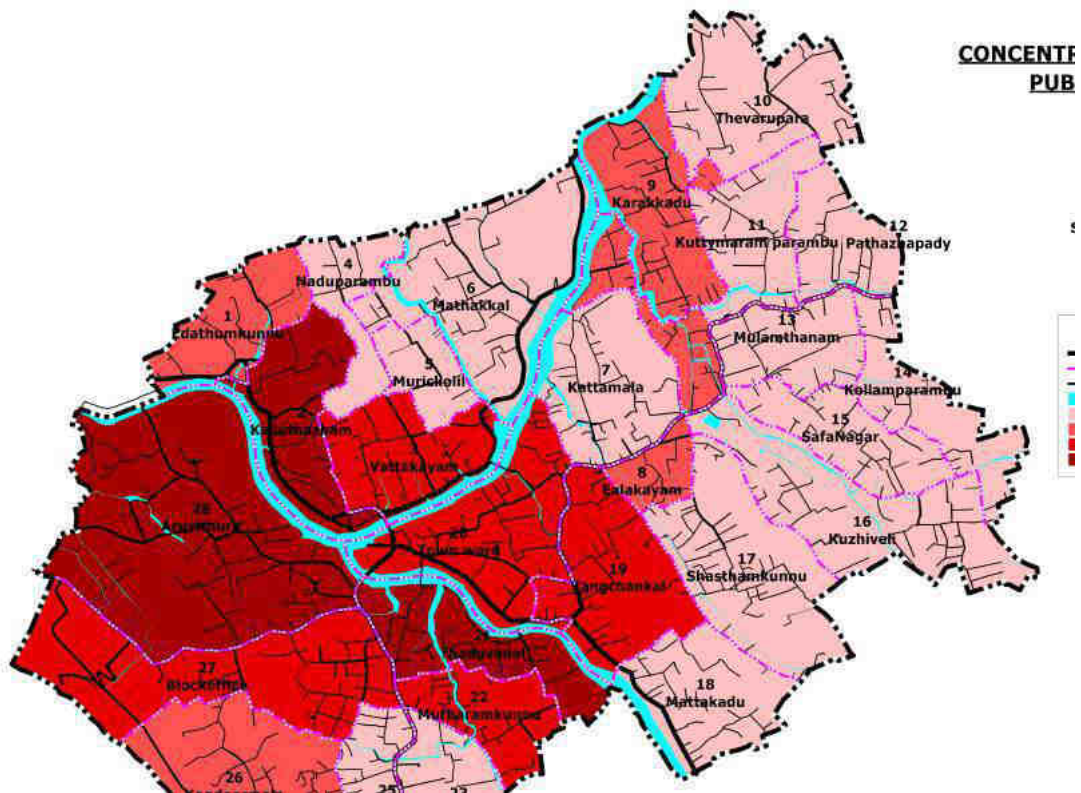




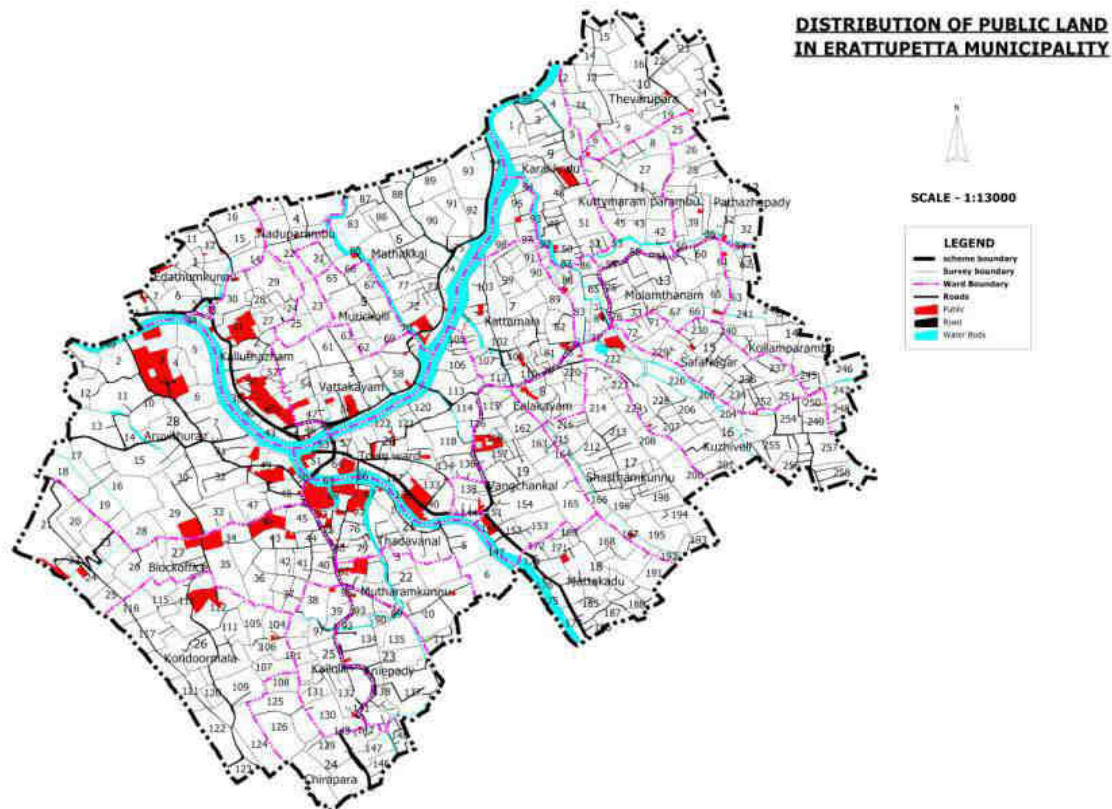
*Fig. 6.5 Concentration pattern & spatial distribution of Commercial land use*

**6.4.4 Concentration pattern of Public and semi-public land use.**

The concentration pattern of public and semi-public land use, which includes Government institutions, educational facilities, health facilities, social







**Fig. 6.6 Concentration pattern and Spatial distribution of Public & semi-public land use**

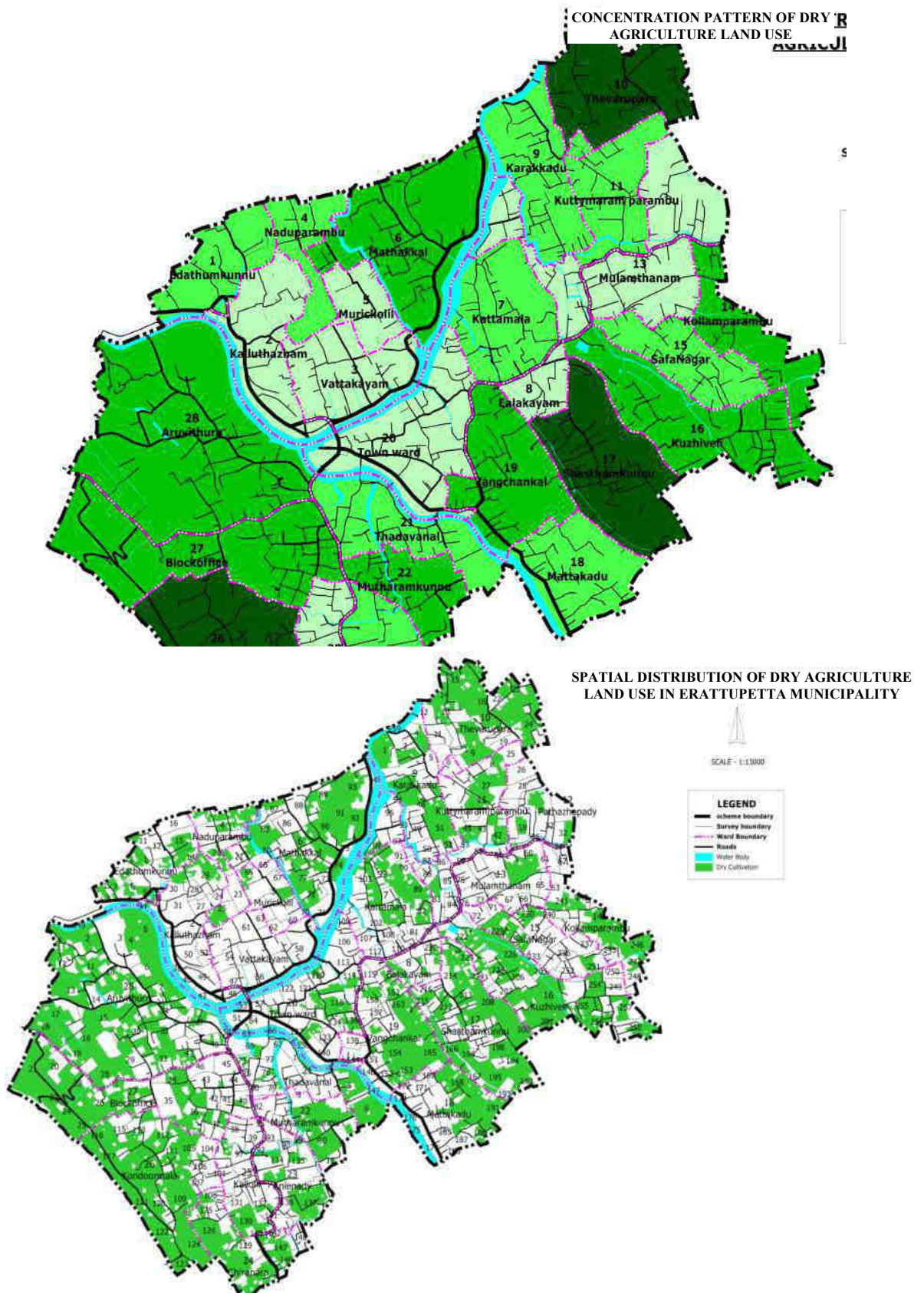
institutions and religious institutions, is shown in Figure 6.6. The concentration index is varying from 0.0001 to 0.075 and is high in Kalluthazham. Thadavanal and Aruvithura are also shown with higher concentration index in Figure 6.6. The pattern shows in wards with more concentration of public land use, concentration of commercial land use is also high except in Aruvithura ward. This indicates the development of Commercial land use in and around the public land use which was existing from ancient period. This category of land use is concentrated more along the sides of major travel corridors.

#### **6.4.5 Concentration pattern of Dry Agriculture land use.**

The agriculture land in Erattupetta town is broadly classified into dry cultivation (rubber plantation, mixed crops etc). As mentioned in previous paragraphs major portion of the agriculture land is coming under dry cultivation and share of Paddy field is very nominal.

Dry Agriculture is the major land use of Erattupetta town and 286 hectares of land which is 38.26% of total town area in coming under dry cultivation.

Figure 6.7 shows the concentration pattern of dry Agriculture land use of the town. The Dry Agriculture land is distributed in all wards of the municipality.



**Fig. 6.7 Concentration pattern and spatial distribution of Dry agricultural land use**





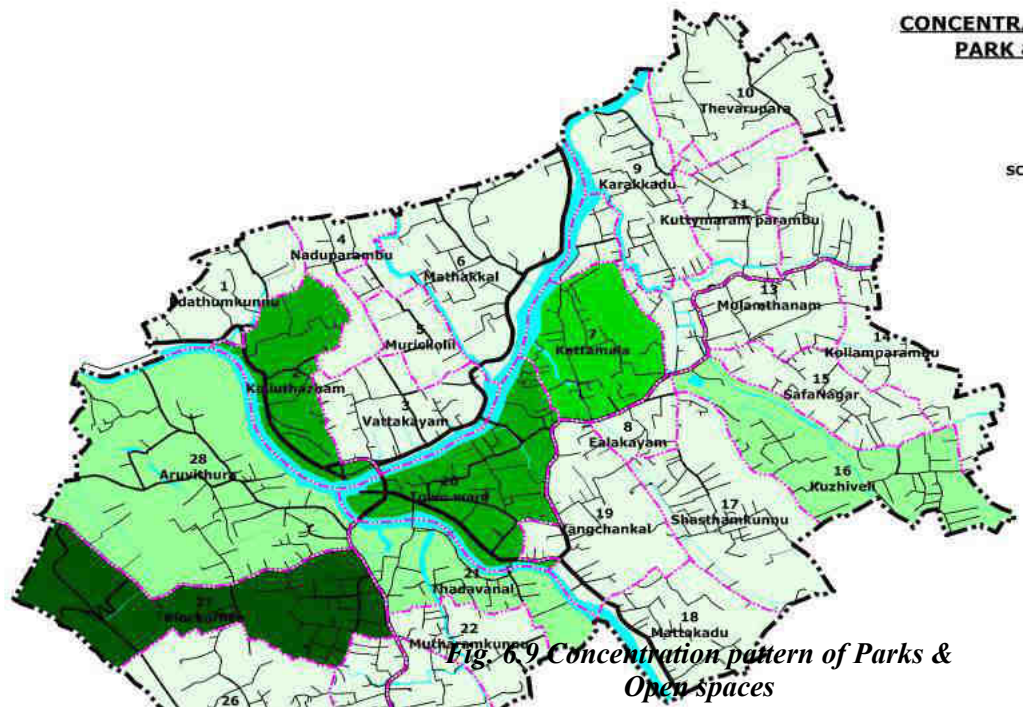


Fig. 6.9 Concentration pattern of Parks & Open spaces

**6.5 COMPARISON OF EXISTING LAND USE WITH PLANNING STANDARDS**

Comparison of land use breakup of planning area with the proposed land use structure as per UDPFI Guide line has been made and it is shown in Table 6.3. The percentage of residential use is far above (almost double) the suggested standard as per UDPFI guide lines. The percentage of other land uses except Park and Open Spaces are far below the suggested UDPFI standard. The percentage of Public and Semi public land use is slightly below the UDPFI standard.

**Table 6.3 Comparison of existing and proposed land use structure as per UDPFI Guide line**

Sl No	Land use	Planning Area		Proposed land use structure as per UDPFI Guide line (for small towns)
		Area of existing land use (in Sq:km)	% of total (existing) developed area	% of Developed area
A	Developed Area			
1	Residential	3.18	42.45	45.00-50.00
2	Commercial	0.20	2.68	02.00-03.00
3	Public and Semi public	0.03	3.08	6.00-8.00
4	Industrial	0.06	0.86	08.00-10.00
5	Traffic & Transportation	0.47	6.38	10.00-12.00
6	Park and Open space	.03	0.40	12.00-14.00
	<b>Total Developed Area</b>	<b>3.87</b>	100.00	
B	Agriculture Land and Water bodies	3.63	46.70	Balance land

Source: Land use survey, UDPFI Guide line

## 6.6 LAND USE ACTIVITY PATTERN

As per the Regional studies the activity identified for Erattupetta town is Agriculture. The activity pattern of Erattupetta municipality based on land use is evolved here and municipal wards are adopted as the units in the analysis. Only four major categories of land uses, viz residential, commercial, agriculture, public and semi public use are considered in this study. The concentration index of the above four category of land use is shown in Table 6.4. The activity pattern of the town based on the land use is shown in Figure.6.10

**Table 6.4 Activity Pattern based on land use**

Ward no.	Ward	Commercial	Dry Cultivation	Industry	Public	Residential	Major Activity
1	Idathumkunnu	0.005	0.053	0.002	0.004	0.090	Residential
2	Kalluthazham	0.042	0.022	0.005	0.035	0.098	Residential/Commercial
3	Vattakayam	0.017	0.000	0.014	0.008	0.149	Residential
4	Nadooparambu	0.003	0.043	0.001	0.000	0.073	Residential
5	Murikkolil	0.001	0.011	0.000	0.000	0.081	Residential
6	Mathakkal	0.001	0.198	0.005	0.006	0.159	Dry cultivation
7	Kattamala	0.002	0.083	0.003	0.003	0.140	Residential
8	Eelakkayam	0.005	0.023	0.005	0.004	0.126	Residential
9	Karackadu	0.001	0.098	0.000	0.006	0.115	Residential
10	Thevarupara	0.000	0.175	0.006	0.001	0.101	Dry cultivation
11	Kuttimaramparambu	0.001	0.061	0.001	0.000	0.118	Residential
12	Pathazhappadi	0.003	0.029	0.000	0.001	0.109	Residential
13	Mulanthanam	0.002	0.024	0.002	0.001	0.128	Residential
14	Kollamparambu	0.001	0.073	0.000	0.001	0.102	Residential
15	Safa Nagar	0.001	0.039	0.000	0.000	0.126	Residential
16	Kuzhiveli	0.004	0.198	0.003	0.005	0.124	Dry cultivation
17	Sasthamkunnu	0.000	0.207	0.000	0.001	0.126	Residential
18	Mattackadu	0.002	0.086	0.002	0.001	0.114	Residential/Dry cultivation
19	Vanchankal	0.008	0.131	0.001	0.011	0.109	Dry cultivation
20	Town Ward	0.054	0.050	0.002	0.021	0.135	Residential/Commercial
21	Thadavanal	0.010	0.055	0.001	0.027	0.093	Residential
22	Mutharamkunnu	0.003	0.067	0.001	0.006	0.066	Residential/Dry cultivation
23	Aanippadi	0.006	0.050	0.004	0.001	0.098	Residential
24	Chirappara	0.001	0.109	0.000	0.000	0.082	Dry cultivation
25	Kallolil	0.007	0.030	0.001	0.001	0.116	Residential
26	Kondoormala	0.000	0.295	0.000	0.010	0.099	Dry cultivation
27	Block Office	0.010	0.224	0.003	0.026	0.124	Residential/Dry cultivation
28	Aruvithura	0.009	0.430	0.004	0.052	0.184	Dry cultivation

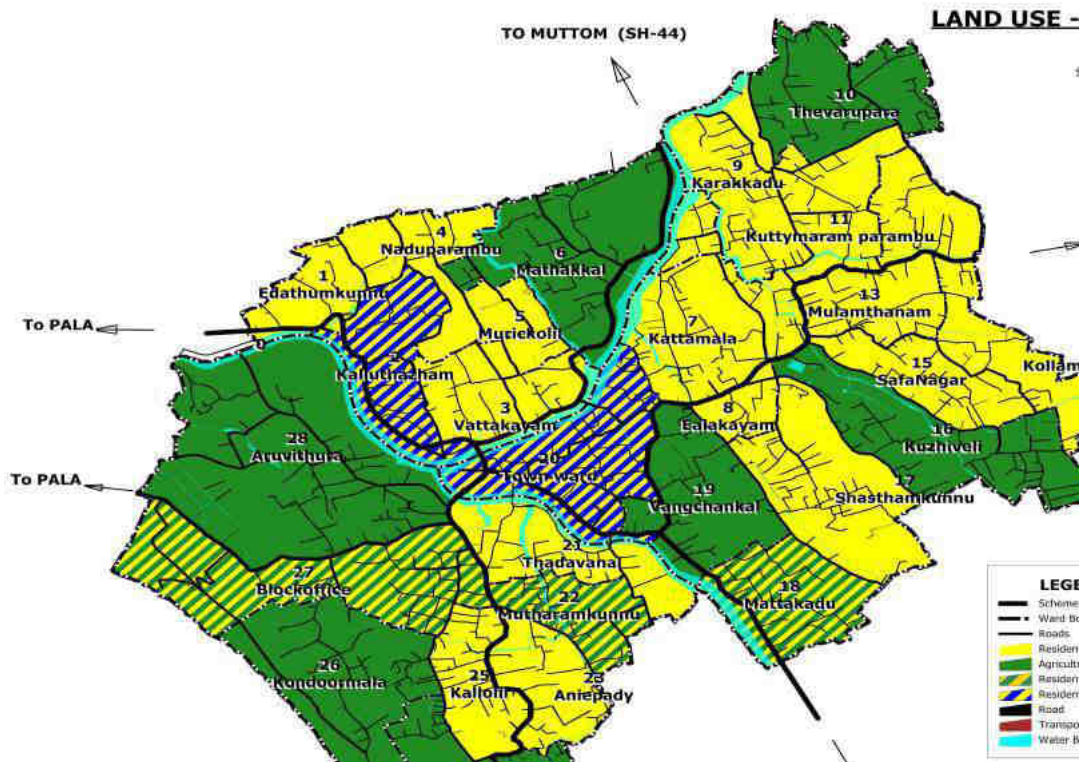


Fig. 6.10 Activity Pattern based on Land use

Activity Pattern based on Land use clearly shows that the Commercial activity of the town is concentrated at the central part of the town along major roads. Mixed activities, ie. Residential cum Commercial, Residential cum Public, Residential cum Agriculture, Commercial cum Public are there in the circle around the town centre. The Public activities are concentrated at the western end of the town. The Northern Part of the town is predominantly under agriculture activity.

### 6.7 FUNCTIONAL CHARACTER OF THE TOWN

The functional character of wards of the town is determined based on population distribution, average plot size and land use. As per the regional studies in the District urbanization report, Erattupetta has rural character. In the ward wise analysis for functional character of Erattupetta municipality, six wards belong to urban category, five wards near to the town centre shows the semi urban nature and 3 wards show semi rural nature. All the remaining

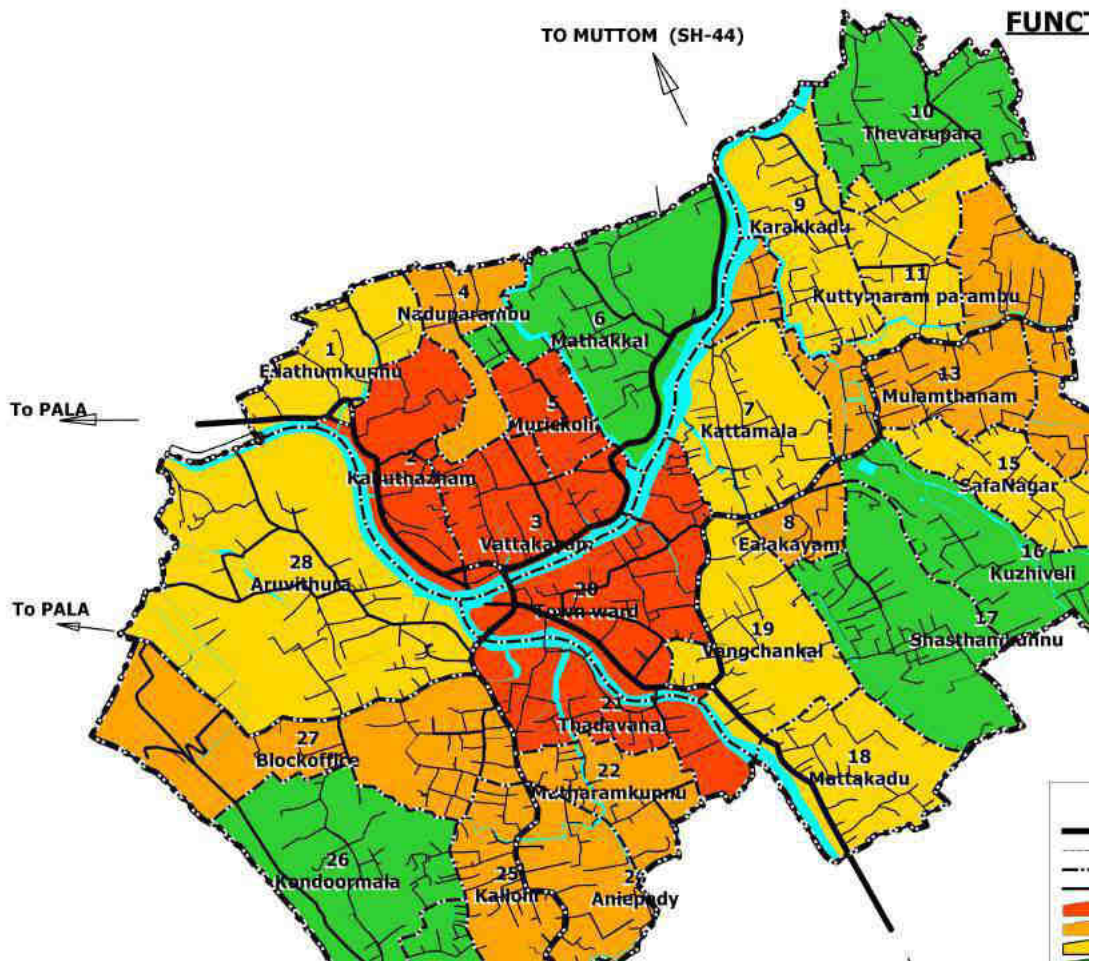


wards belong to rural category. The functional character of the town is shown in Table 6.5 and Figure 6.11.

**Table 6.5 Functional Character of Wards**

	Name of Ward	Functional character	Ward no.	Name of Ward	Functional character
1	Edathumkunnu	Semi rural	15	SafaNagar	Semi rural
2	Kalluthazham	Urban	16	Kuzhiveli	Rural
3	Vattakayam	urban	17	Shasthamkunnu	Rural
4	Naduparambu	Semi urban	18	Mattakadu	Semi rural
5	Murickolil	Urban	19	Vangchankal	Semi rural
6	Mathakkal	rural	20	Town ward	Urban
7	Kattamala	Semi rural	21	Thadavanal	Urban
8	Ealakayam	Semi urban	22	Mutharamkunnu	Semi urban
9	Karakkadu	Semi rural	23	Aniepady	Semi urban
10	Thevarupara	Rural	24	Chirapara	Rural
11	Kuttymaram parambu	Semi rural	25	Kallolil	Semi urban
12	Pathazhapady	Semi urban	26	Kondoormala	Rural
13	Mulamthanam	Semi urban	27	Blockoffice	Semi urban
14	Kollamparambu	Semi urban	28	Aruvithura	Semi rural

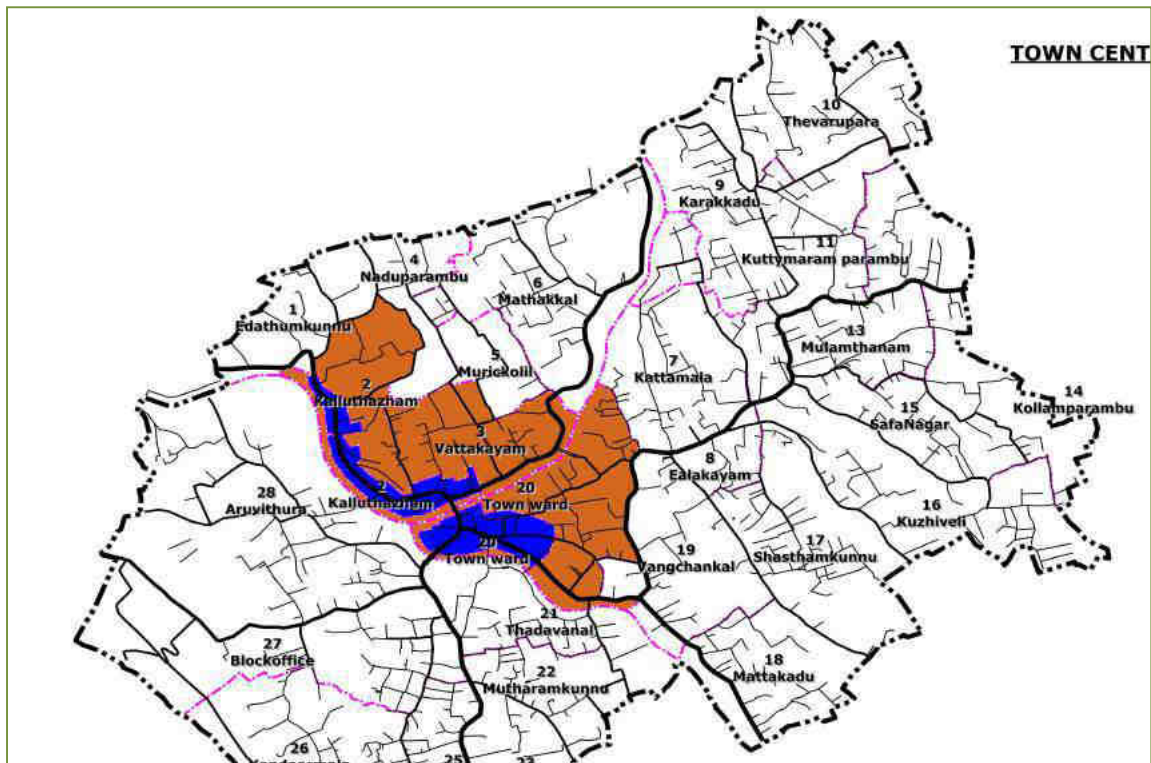
The transition from rural to urban is seen from boundaries to the Town centre. This is mainly because of the topography, availability of better connectivity to the Town centre accumulation of Commercial activities. Being a trade centre from ancient times the banks of Meenachil River developed very faster than the out skirts of the Town.



**Fig. 6.11. Functional Character of the Town**

### 6.8 CENTRAL AREA OF THE TOWN

Central area of the town is the area where major activities of the town like commercial, civic transport, educational, administrative, recreational etc. are located with population in the surrounding residential area supporting the C.B.D. functions. Based on the above criteria the twelve Municipal wards of the town i.e. Kalluthazham, Vattakkayam and Town ward wards are included in the delineated central area. The central area of the town is shown in Figure 6.12.



**Fig. 6.12 Town centre and Central area**

### 6.9 TOWN CENTRE (C.B.D)

A town centre is a meeting place for the population as a whole. It is the focus of a radial system of roads and either in or near to the central bus terminus. It is the main administrative business, entertainment and cultural centre of the town. For Erattupetta town the area identified as the CBD includes Kalluthazham, Vattakayam, Town ward. The central area of Erattupetta is the main business area. SH14 and SH 32 crosses here and the two rivers also crossing here. In the block office ward Government offices, commercial establishments etc are located. The total area of the town centre is 15.55 hectare, which is 2.07 percentage of the total town area. The town centre is shown in the Map 6.12. Central area is of 68.88 Hectares, which is 9.2%.

## **6.10 CONCLUSION**

*The land use pattern of Erattupetta shows that 42.55% of the town area is coming under Residential land. The commercial activities have taken place along the major travel corridors. Agriculture activities are concentrated in the northern and western part of the town. Even though agriculture activity is concentrated in the Northern part the residential land uses is seen scattered all over the town area and mixed with agriculture land uses. As per the regional setting study the activity identified for Erattupetta town is Residential. Non agriculture activities are concentrated around the central part of the town and the agriculture activities in the periphery of the town. The study on functional character of the town shows majority of wards have urban or semi urban character.*

*The study on land use shows that Erattupetta Town consists of very limited lands for development purpose and it has no capacity to hold more population. Proper planning and introduction of new innovative projects can enhance the development of Erattupetta Municipality.*

## 7. TRADE AND COMMERCE

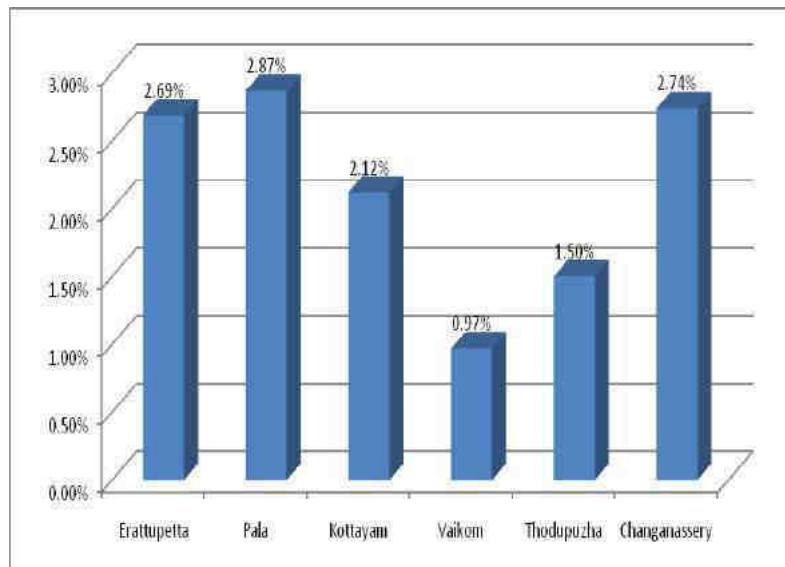
### 7.1 INTRODUCTION

Erattupetta by its name itself is a good fertile land as it has vast area of river banks. But due to the residential potentiality, agricultural land is very less. Hence trading is the main financial sector in Erattupetta. Major trading is based on wood and wood furniture units. More than that collecting and selling of agricultural products like areca nut, nutmeg, rubber, pepper are the major activity carried out in the field of trade and commerce.

### 7.2 LAND USE UNDER COMMERCIAL USE

The total land under commercial use of Erattupetta Municipality was only 20.1 hectares (2.69%) in 2016. A comparative study with similar adjacent town in the region has been made and the percentage share of commercial area to the total area of the towns Erattupetta, Pala, Kottayam, Vaikom, Thodupuzha and Changanassery are

2.69%, 2.87%, 2.12%, 0.97%, 1.50% and 2.74% respectively and it is shown in Figure 7.1. It shows that Pala is in the first position and Changanassery in second position and Erattupetta in third position as far as the



**Fig. 7.1 Comparison of % share of commercial land use with similar towns**

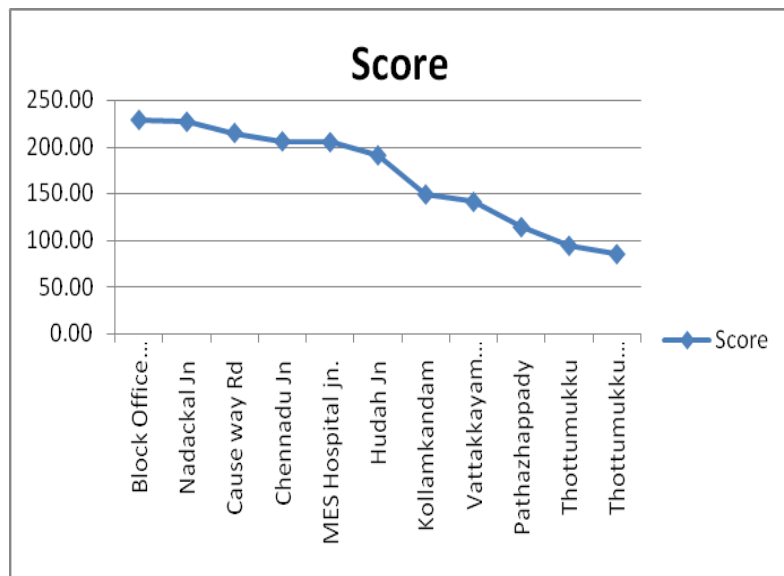
percentage of commercial land use is concerned and it shows the commercial importance of the Town.

The commercial area of the Erattupetta town was mainly developed along Pala-Poonjar (SH-32) road from College junction to MES Junction and along Kanjairappally road up to Chennad junction and along Thodupuzha road up to Thottumukku and Vagamon road up to Nadakal Aman junction.

### 7.3 COMMERCIAL NODES

A detailed survey regarding the commercial nodes in the town has been conducted by the department. Based on the preliminary survey, 10 commercial nodes in the planning area have been identified for the detailed study. The facilities at various nodes has been generally grouped into Retail shops, Whole sale shops, Commercial Offices, Small Scale Industries, Other facilities and Higher

order facilities. The number of shops/units of different categories coming under the above categories was counted. For comparison total scores for each node were calculated after assigning weightage to each facility. The



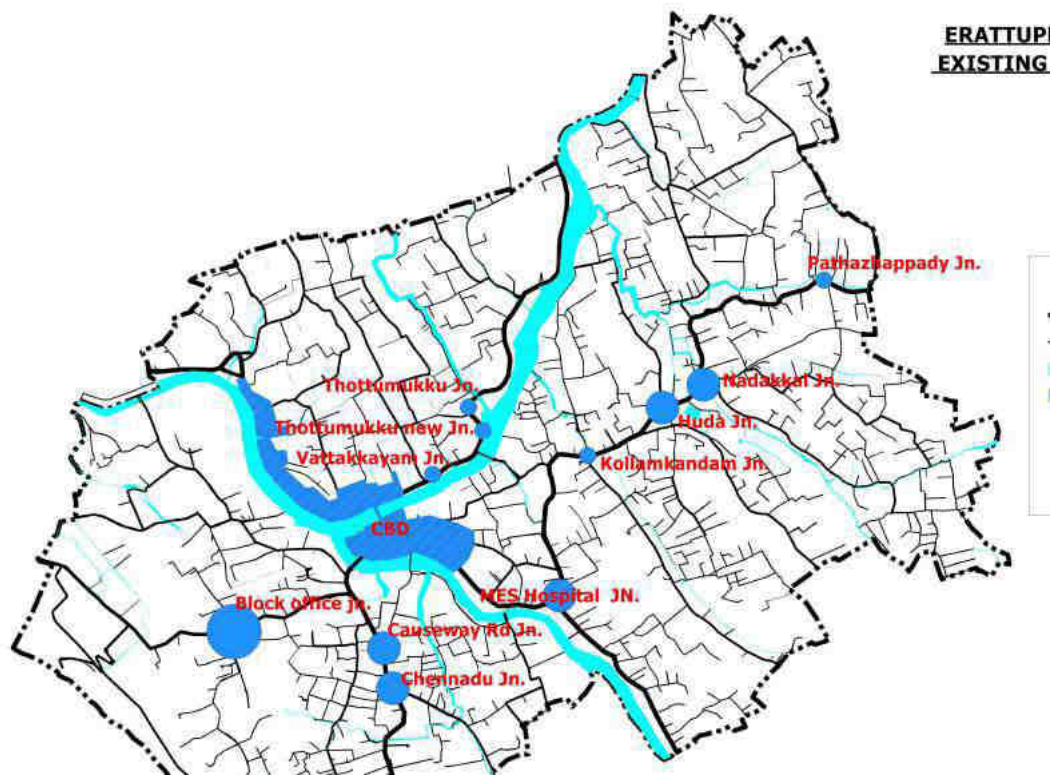
**Fig. 7.2 Total score obtained for each node**

total score obtained for each node is given in Figure 7.2. Based on the score obtained, the following 3 types of commercial nodes were identified.

- **FIRST ORDER** – Block office junction
- **SECOND ORDER** - Causeway road junction, Huda jn., Chennadu jn., MES Junction, Nadakkal, Aruvithura College junction, Aruvithura Church junction.
- **THIRD ORDER** –Pathazhappady, Kollamkandam jn, Thottumukku jn,Thottumukku new bridge jn, Vattakkayam jn.

The location of the existing nodes is shown in Figure 7.3. Higher order nodes are formed along SH -32. With the expansion of nodes the space between nodes were reduced considerably and it appears like Corridor development.





**Fig. 7.3 Spatial distribution of the existing nodes**

**7.4 MARKETS**

Main market building is under renovation which is existing near market road. A number of shopping complexes are functioning with in the town. Municipal shopping complex at private bus stand, Pulickal shopping complex at central junction, Al- Madeena shopping complex, Manakkal shopping complex near Aruvithur Bridge are some of them. Commodities were brought to this market from Tamilnadu state and other districts of Kerala.



Vegetables, fruits, meat, fish and all types of stationary items are available here. Shops, Hotel and shopping mall are functioning in this building. Vegetables are mainly brought from Tamilnadu and other districts in Kerala.

The details of commodity movement through the Erattupetta Market are shown in Table 7.1. Commodities, average quantity, amount of transaction, places of arrival of commodities, places of distribution of commodities etc are included in the tables.

**Table 7.1 Details of Commodity transaction – Erattupetta Market**

Sl No.	COMMODITY	AVERAGE QUANTITY	PRICE IN Rs.	ARRIVED FROM	DISTRIBUTED TO
1	Banana	5 Tonne	175000	Local, Tamilnadu & High range	Surroundings
2	Rice	100 Tonne	3500000	Ankamaly, Kaladi, Tamilnadu	Surroundings
3	Sugar	30 Tonne	1200000	Tamilnadu	Surroundings
4	Pulses	25 Tonne	1750000	Tamilnadu	Surroundings
5	Beetel	500 bundle			
6	Jaggery	5 Tonne	175000	Tamilnadu	Surroundings
7	Arecanut	2 Tonne		Kottayam (Dist) & Pathanamthitta	Tamilnadu, North Indian
8	Cattle feed	40 Tone	800000	Near District	Surroundings
9	Fish	30 Tonne	2400000	Alappuzha, Kollam	Surroundings
10	Maidha, Rava	25 Tonne	750000	Tamilnadu	Surroundings
11	Onion, Pottato, etc...	10 Tonne	200000	Tamilnadu	Surroundings
12	Cooking oil	5 Tonne	500000	Near District	Surroundings
13	Tapioca	10 Tonne	200000	Kottayam (Dist) & Ernakulam	Surroundings
14	Nutmeg	20 Tonne	7000000	From Kerala State	North India
15	Latex of Rubber	20 Tonne	1800000	From Kerala State	Tyre Companies
16	Coffee	10 Tonne	2000000	High range, Local	Other states of India,

## 7.5 OTHER SHOPPING FACILITIES

In addition to markets, there are shopping complexes in various part of the town. Textiles, electronics goods, stationary, building materials, super markets etc are functioning in these shopping complexes. Shopping complexes are developed along all the sides of main roads.



## 7.6 INFORMAL SECTOR

Hawkers and vendors have long been a common feature of sidewalks and markets of urban centers. Hawkers contribute substantially in meeting the needs of the community. They indirectly support the local artisans and poorer sections of the community, by making available commodities at a comparatively cheaper rate. Even though their activities can be justified socially, it is conflicting with the management of traffic and pedestrian movement on street and in many cases affects the environmental quality.



Even though in a small scale, the informal sector activity is there in Erattupetta town also. There is no organized space for hawkers in the town and they are mainly utilizing road margins and footpaths.

## 7.7 BANKING

Details of different category of banks functioning in Erattupetta Municipal area is shown in table 7.2. 26 branches of various category banks are functioning in the town. Sufficient number of branches is available for the need of the people.



District co-operative bank at Muttom jn, Meenachil East urban co-operative Bank near KSRTC, Erattupetta block urban co-operative society near Central junction, Service co-operative bank near municipal office, Kerala gramin bank opposite Manakkal complex Federal bank near Aruvithura Pally, Union bank near Aruvithura College road, IOB near Kaduvamuzhy , South Indian bank and Catholic Syrian bank are the major banks functioning in Municipal area.

**Table 7.2 Details of banks functioning in Erattupetta Municipal area**

<b>Banks</b>	<b>SBI and Associates</b>	<b>Nationalized Commercial Banks</b>	<b>Scheduled Commercial Banks</b>	<b>District Co-operative Banks Branches</b>	<b>Service Co-operative Banks &amp; Credit Societies</b>	<b>Urban Co-operative Bank</b>
<b>No. of Branches</b>	2	2	4	1	2	1

## 7.8 CONCLUSION

*Commercial developments are mainly concentrated at town centre and along the major travel corridor sides. The natural rubber plantation is the major economic backbone of the town. Rubber marketing and trading has very much importance in Erattupetta. Activity of informal sector in small scale is there in the town. Sufficient numbers of banks are functioning in Erattupetta town.*



## 8. INDUSTRY

### 8.1 INTRODUCTION

Though Erattupetta is densely populated, industrial sector is not developed due to the lack of infrastructure and sufficient land. No major types of industrial units are functioning in the town and the industrial sector is limited to few industries in the category of MSME.

In this chapter the present scenario of industrial sector of the Erattupetta town is analyzing. No major types of industrial units are functioning in the town and the industrial sector is limited to few industries in the category of MSME. Industrial units in the manufacturing sector are very less and majority of units are in service sector. Secondary sector has no major role in the occupational sector or in the economy of the town. One of the main reasons for the slow economic growth of the town is lack of industrialization.

### 8.2 INDUSTRIAL LAND USE

As per the land use analysis, 6.4 hectares of land which is just 0.86% of total town area is coming under industrial land use. There are no major industries in the town. The industries based on carpentry or wood are located encroaching the Government lands and also haphazard development along the sides of major roads causes traffic congestion and unhygienic living condition in the town area.







1.31% Household industrial workers. High value of agriculture land, lack of availability of labours, high wages etc lead the agriculture sector unattractive.

Though majority of land is used for rubber cultivation, occupational potential is very limited. In this circumstance industrialization is a solution for the creation of the employment and economic development of the town.

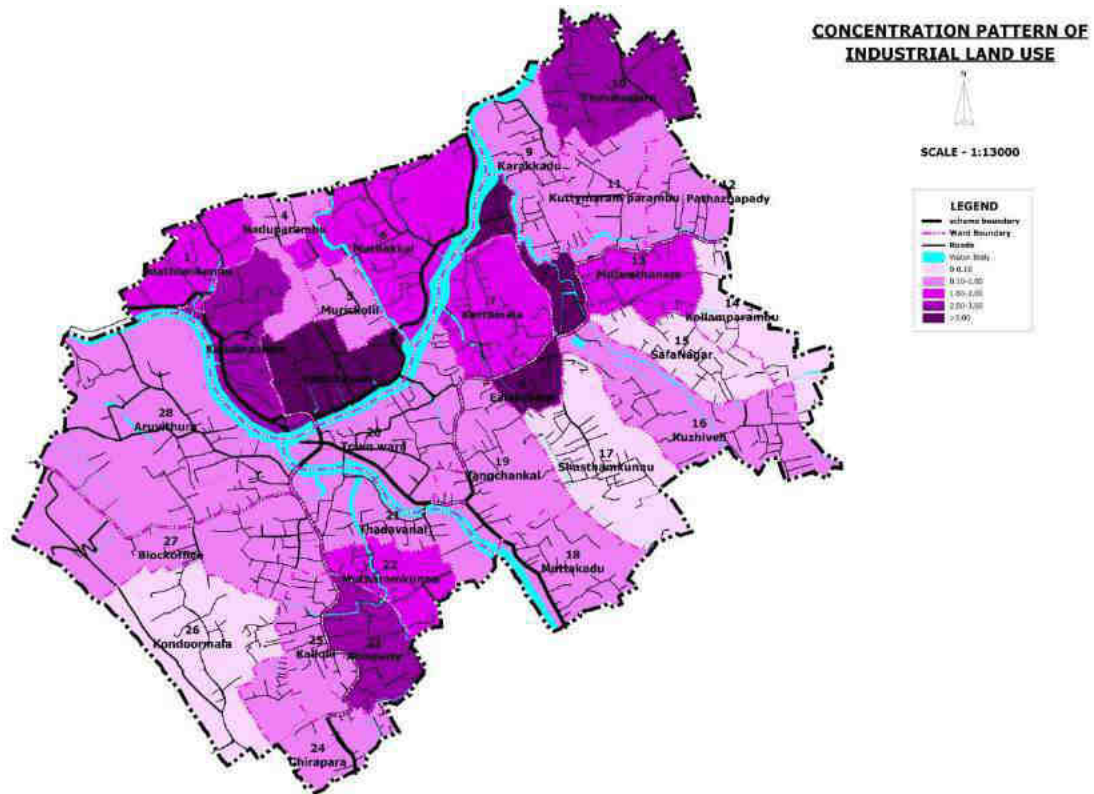
#### **8.4 RAW MATERIALS**

Agro based raw materials such as Nutmeg, Pepper, Cocco and Coffee are widely traded in Thekkekara market from Idukki and Kottayam region and people are mainly engaged in the business of these spice items, which can be utilized as industrial raw material. Pleasant Coffees and Exporters is one of the major unit in this sector. Latex which is a major industrial raw material available at Erattupetta is not fully utilized for industrial purpose. But no major industries utilizing the raw materials of the region is functioning in the town or in the adjacent Grama panchayats. There is ample scope for starting food processing units in the town.

#### **8.5 INDUSTRIAL UNITS**

A mini industrial park with 10 units including wooden furniture making unit, Aluminium vessel unit, Polythene sheet unit, Polymer pipe, glass painting etc is functioning on the Erattupetta – Theekoy road at Nadakkal. The industrial unit Parvin Pardhas & Hijab is a major textile unit with 88 labourers is established at Erattupetta – Thodupuzha road at Mathakkal ward. Another unit Meenachil Plywood situated at Thottumukk caters employment to 41 labourers . Pleasant Coffees and Exporters under CCM group is another unit making coffee powder which is supplied to major companies and sold locally in the brand name CCM coffees. Small scale wood furniture units of 20 numbers, sawmills -5 numbers , one metal crusher unit and 5 Hollow brick unit and some food processing units are functioning within the Municipal area .

No more traditional industries are existing in Erattupetta.



**Fig.8.2 Concentration pattern of Industrial land use**

## 8.6 CONCLUSION

Only SSI units are functioning within town limit and there are no major industries. Erattupetta has no specialization of particular category of industries. Non availability of land and comparatively high population density is a hindrance for industrial development of the town. Agro based raw materials like nutmeg, cocoa, rubber, coconut, coffee, pepper which can be utilized as industrial raw material. Industrial growth in Erattupetta town is very low whereas there is enough scope for the introduction of food processing and textile based industries. There is no much potential available in this sector, in the town, mainly due to the high population density, non availability of land and scarcity of local resources.

## 9. HERITAGE & TOURISM

### 9.1 INTRODUCTION

Changes accompanying urban growth causes the destruction of distinctive and meaningful built and natural elements, eradicating the physical expression of former indigenous ways of life that are very much part of the settlement culture. Since the architecture is a long-term and large scale physical witness to the past, future generations will continue to refer to it as a reflection of the spirit of the historic culture.

During the recent decades, the rehabilitation and regeneration of historic centers has been increasingly recognized as an efficient tool for urban development synthesizing cultural values with economic opportunities. Maintaining and enhancing historic buildings and historic areas can be economically rewarding, and in long term, increase the value of private and public property.

### 9.2 HERITAGE

Ninar Masjid is one of the oldest Muslim church. As far as Erattupetta town is concerned there are only a few religious buildings with heritage value. Detailed description of important buildings is given in the subsequent paragraphs.

#### **St. George Church, Aruvithura**

- The first edifice of the church at Irapeli (now Aruvuthura) was made of granite stones in the manner of Hindu temples. As it is traditionally believed that St. Thomas, the apostle of India who preached the Christian faith in the important and popular villages of Malabar. It is believed that St. Thomas visited Irapeli and converted a prominent Jewish trader family named "Thengummoottil" to Christianity



and laid a cross on the banks of the Meenachil River. Local traditions also support this belief. This is the first church in the Palai diocese and was built in the 1st century. St. Thomas founded seven and a half churches there.

### **Valiachan mala, Erattupetta**

- This is a very high place in Erattupetta town from where we can see all around of Erattupetta town including Aruvithura church. The cross in this place is about 2000 ft above sea level and about 107 ft high. It is growing as a pilgrim tourism place.



### **Illickal Kallu**

- This place is a major tourist attraction spot in Kottayam district near to Erattupetta town. Situated about 3400 feet above sea level, it is also one of the highest peaks in the Western Ghats. Illickal Kallu is a rock situated above Illickal Mala. The thing that makes this rock unique is that half of the rock has fallen off, and only the other half remains. This supplements the beautiful mountains which surrounds the rock. The nearest Panchayat is Teekoy. Ayyampara Hill is another tourist place which is located in Thalanadu Panchayat is also nearby to this municipality. Angalamman Kovil is one the Edathavalam for Sabarimala pilgrims.

### **Buildings of heritage value in the influence area of the town**

- Pilgrim centre of Blessed Alphonsa is located in Bharananganam Grama Panchayat about 8 Km from Erattupetta and it is located in Pala- Erattupettah Road (SH 32). It is believed that this church was constructed about 1000 years back and reconstructed about 90 years back. This is one of the largest churches in Kerala. The church has

ancillary structures such as Kalvilakku, Silalikhithangal etc. Blessed Sr. Alphonsa was buried here and in her name Bharananganam became a famous pilgrim centre.

Holly Cross Forane Church, Cherpunkal, Puliyanur Temple, Kadappattoor temple, Ramapuram church, St. George Church Aruvithura area the other important buildings with heritage value.

### **9.3 TOURISM**

At present tourism sector is not playing a substantial role in the economy of Erattupetta. Being a hill land and middle region of Kerala this municipality is beautifully arranged with hills and valleys. Valiachan mala hillsides and Earattupetta riversides are very beautiful for sightseeing.

### **9.4 GATE WAY TO TOURIST AND PILGRIM CENTERS**

Erattupetta is the ideal take-off point for visits to Bharananganam, Vagamon, Elaveezhaponchira, Peerumadu, Munnar, Idukki etc. Earattupetta is well linked by road to other prominent centers of the state. The nearest airport is Cochin International Airport which is about 80 kilometers away.

St. Alphonsamma, s Thomb Bharananganm, Vagamon hill station, Kurisumala Ashramam, Kolahalamedu, Elaveezhaponchira and Poonjar Palace are the stations with tourism potential and well connected with Erattupetta. Gramophone museum is 3 km from Erattupetta which is in Thalappalam Panchayat.

### **9.5 AESTHETICS**

The visual ill effects of parking due to the absence of off street parking areas are being experienced at many parts of the town. Numerous advertisement boards set up all along the streets, marks the beauty of the surrounding landscape.

The roads of the town and road junctions and road furniture do not have a geometry or uniform standard. In almost all roads, the buildings are abutting the road without adequate setback from the road margin. This together with the insufficient right of way of roads and poor road geometrics is degrading



the aesthetic beauty of the town. In addition to this there is the problem of road encroachment.

## **9.6 CONCLUSION**

*Buildings/precincts of heritage importance are very limited in the town. There is limited potential for tourism within the town. But utilizing the nearness to the tourist location is an advantage of the Erattupetta town, and it can be developed as a tourist transit center. The aesthetic appearance of the town is to be improved for attracting more Tourists.*

# 10. AGRICULTURE & ANIMAL HUSBANDRY

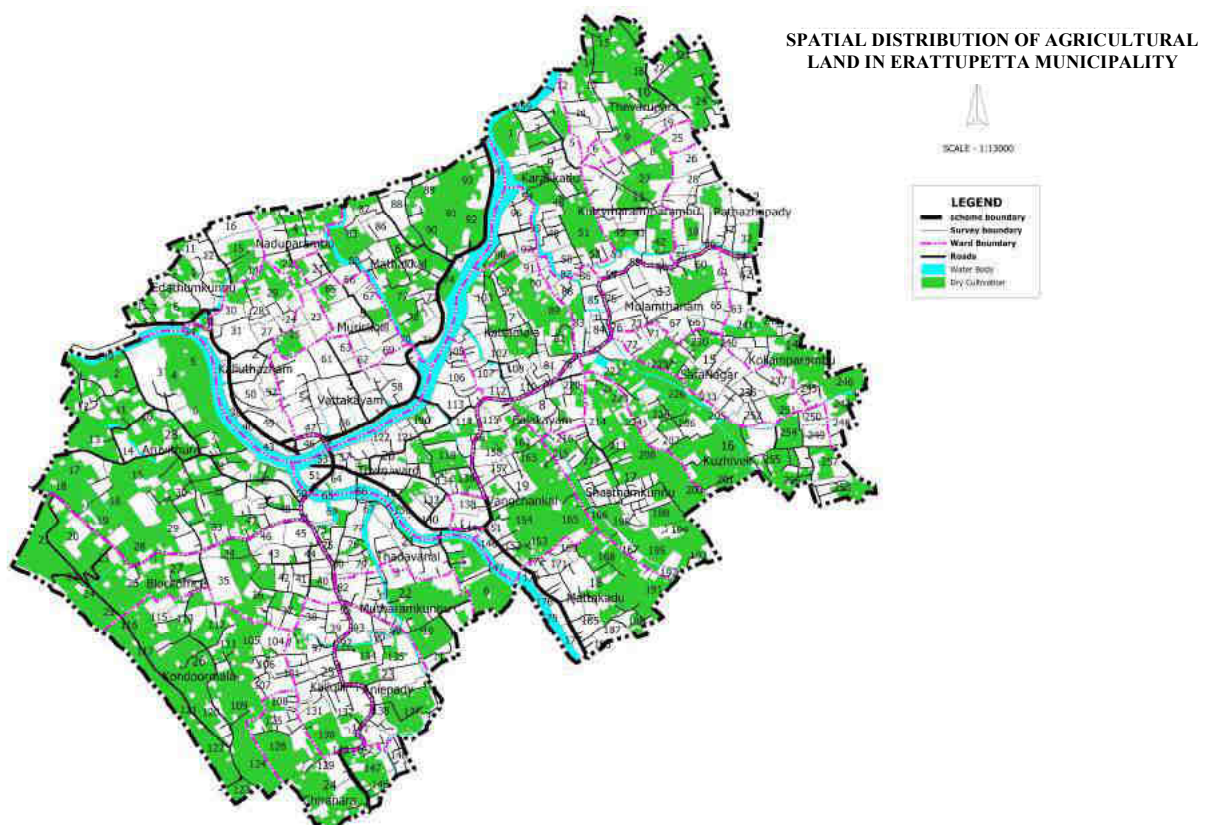
## 10.1 INTRODUCTION

Erattupetta municipality is mainly a residential predominant city. The topography, soil and climate of the town are more suitable for cultivation of rubber. Major crops of this municipality is Rubber, coconut, pepper, Tapioca etc. As this town is a combination of low lying and hilly area, any type of agriculture can be done here. . 03% of paddy land is available here but there is no paddy cultivation.

The Functional character of the town shows that out of 28 wards, 6 wards are rural and 8 wards are semi - rural. Only 5 wards are urban and the remaining 9 wards are Semi-urban.

## 10.2 AGRICULTURAL LAND USE

As per the land use survey 2016, dry agriculture land dominates in the Town and consists of 2.86 Sq. km. of land which is 38.26 % of total town area.



**Fig 10.1 Distribution of Agricultural land**



## 10.4 LAND UNDER DIFFERENT CROPS

Land under different crops is shown in Table 10.1. Rubber is the major crop of the town and 310 Hectares of land which is 64.98 % of total agriculture land is under rubber cultivation. Coconut is the second major agricultural production of this area.



**Table 10.1 Breakup of agriculture land**

Sl. No.	Crops	Area (in Ha)	% of Agriculture land
1	Banana plantain	25.00	5.26
2	Tapioca	18.00	3.77
3	Coconut	42.00	8.80
4	Other crops	82.00	17.19
5	Rubber	310.00	64.98
<b>TOTAL</b>		<b>477.00</b>	<b>100.00</b>

Source: Krishi Bhavan, Erattupetta

## 10.5 MAJOR CROPS OF THE TOWN

Major crops, their area of cultivation and productivity of Erattupetta town is shown in Table 10.1. Rubber is the major crop of the town as far as the area of cultivation concerned, followed by Coconut. Rubber cultivation covers an area of about 310 Ha and 42 Ha of land is cultivated with coconut. Most of the hilly land is under rubber cultivation. Vegetables, pepper, areca nut, pulses, fruits and spices are the other crops.

Availability of good quality and chemical free vegetables can be ensured only by promoting homestead cultivation of vegetables. Efficient and economic use of water is ensured with the implementation of schemes such as promotion of

micro irrigation. Drip and sprinkler irrigation systems can reduce the wastage of water through irrigation.

Poly houses and roof garden plantation are more encouraged here as there is shortage of availability of land for cultivation. Agriculture department is encouraging this type of cultivation and more funding are given for this purpose.

Increase in use of organic manures, compost, biological agents, bio fertilizers and bio pesticides can be utilized for increasing productivity in the available agriculture land.

**Table 10.2 Area of cultivation of Major crops per year**

Crops	Area of cultivation (in Ha)	Productivity	Crops	Area of cultivation (in hect)	Productivity
Coconut	42	4800 Nuts/ha	Pineapple	16	30T/ 1 Ha
Tapioca	18	25M T/1 Ha	Nutmeg	22	4.5T/ 1 Ha
Vegetables	4	12T/ 1 Ha	Coffee	6	400 T/ 1 Ha
Banana	25	10 MT/ 1 Ha	Spices	27	400Kg/1 Ha
Rubber	310	3.47T/ 1 Ha	Plantains	10	8T/ 1 Ha
Pepper	10	450 kg/ 1 Ha	Other crops	13	21T/Ha
Coco	5	1500Kg/ 1 Ha			

Source: Krishi Bhavan, Erattupetta

## 10.6 TRADING FACILITIES

Erattupetta municipality does not have modern organized market facilities for the trading of agriculture products. Even though there is a Karshaka Market, its facilities are limited.

## 10.7 ANIMAL HUSBANDRY

In olden days most of the people depends on agriculture as their main source of income. Hence cattle are reared for milk, ploughing in field, pulling the bullock carts and as a source of bio fertilizer. The decrease in area of paddy cultivating lands, modernization of cultivation methods, non-availability of



workers were resulted in the degradation of cattle rearing. Now cattle are used only for milk and meat. Animal husbandry sector provides milk, meat, egg, manure, hide and work force.

Table 10.3 gives the details of Livestock population in Erattupetta town. It is clearly seen that the livestock population is decreasing to great extent. Except Buffalo, Poultry and rabbit all other livestock are found to be reducing. This shows that the primary sector occupational structure is gradually changing to the service sector.

**Table:10.3 Livestock Population of Erattupetta**

Animals	2007	2012
Cattle	188	177
Buffalo	Nil	8
Pig	14	NIL
Poultry	3127	3888
Duck	61	30
Goat	428	407
Rabbit	56	91
Quail	54	19
Turkey	NIL	18

Source: Veterinary Polyclinic, Erattupetta

There is a slaughter house in Erattupetta municipality. Milk societies are functioning for collection of milk from local people. The production of milk and egg in the municipal area is negligible compared to the consumption. The Veterinary Polyclinic is the major institution in this sector functioning in the town. As this is a small municipality with high density of population, people of nearby Panchayats are getting the potential from here.

## **10.8 CONCLUSION**

*From the above studies it can be concluded that, the land under agricultural purposes and workers engaged in agriculture sector is consistently decreasing. The conversion of agriculture land for development purpose, high land value is the main reason behind this. Kerala a food deficient state is vulnerable to food scarcity and faces sporadic price rise since we are depending on other states. Animal Husbandry sector has a vital role to play in this scenario. Livestock production has to be improved as a step of food security. AH sector now encompasses not only food security but also nutritional security and income security. This sector is important in alleviating rural poverty and unemployment. With the introduction of students poultry club in the municipal area, self sufficiency in egg production can be achieved. Decline in the cultivation of paddy and, increased production cost etc are the major hindrances in growth of milk production sector.*

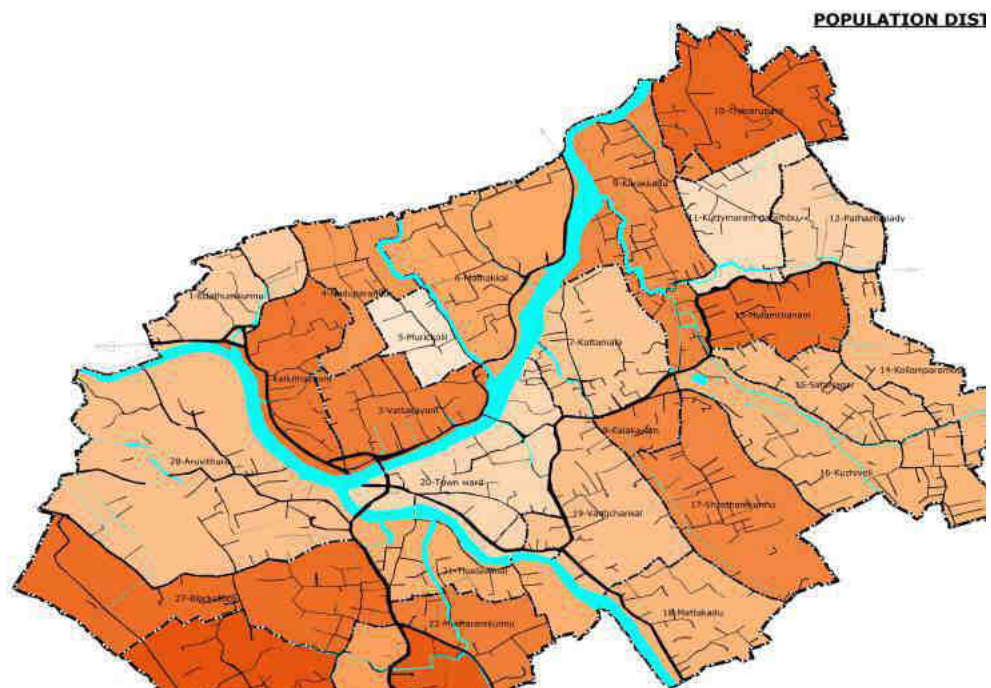
## 11. HOUSING

### 11.1 INTRODUCTION

Kerala has an urban population of 47% according to 2011 census. As per 2011 census there is an estimated shortage of houses. Housing is one of the basic needs of human being and it is important next to food and clothing. The quality of housing reflects the quality of life. When compared to other towns in the neighboring areas Erattupetta municipality is experiencing highest population growth rate and the assessment of housing need is essential as far as Erattupetta is concerned.

### 11.2 RESIDENTIAL AREAS

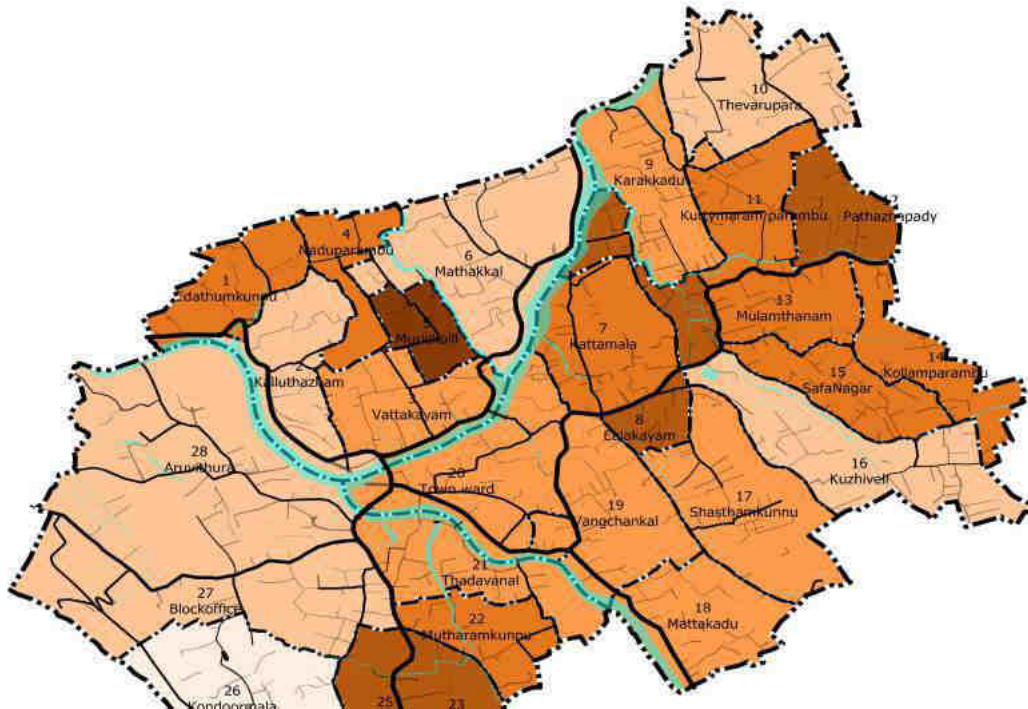
Erattupetta town has concentrated residential developments and presently there is no multi storied residential apartments in the town. Residential areas in the municipal limit are scattered in all part of the town. But the density of population is varying and residential areas are concentrated more along the sides of major travel corridors of the town. The ward wise population density of Erattupetta town is shown in Figure 11.1 and residential concentration is shown in Figure 11.2.



**Figure 11.1 Ward wise Population density**

### 11.3 HOUSING STOCK

The number of households and number of houses available from 1981 onwards is shown in Table 11.1. The analysis shows that the deficiency of house is high in the town and measures are to be taken to provide houses to houseless people.



**Figure 11.2 Concentration Index of Residential Land use**

**Table 11.1 Variation in number of houses and households**

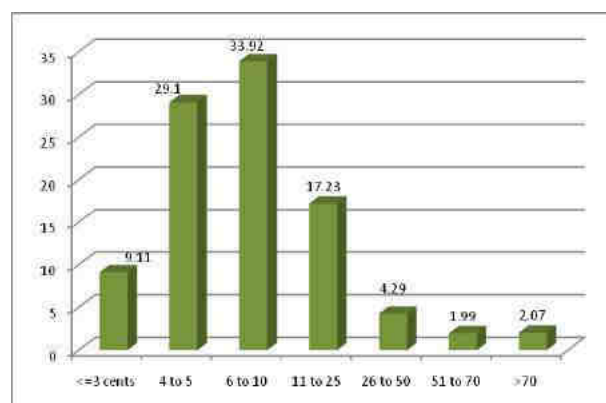
Sl. No	Year	Population	Number of houses	Number of households
1	1991	21226	3545	3604
2	2001	25103	7435	4769

\*\*Source: Census reports, Panchayat level statistics

### 11.4 RESIDENTIAL PLOTS

#### 11.4.1 Plot size

Details regarding the size of plots and ownership of plots have been collected from the Socio Economic survey 2016. As per the survey average size of residential plots in



**Figure 11.3 Average plot size**

Erattupetta Municipality 11.7 cents. In ward 11 (Kuttimaramparambu) average plot size is 6.67 cent and in ward 28 (Aruvithara) it is 24.58 cent. The percentage of plot in different ranges of plot size as per Socio-economic survey (2016) is shown in figure 11.3. It shows that comparatively small size plots are more in the town. 33.92 % of the plots are in the range of 6 to 10 cents and 29.1 % of plots are in the range of 4 to 5 cents.

**11.4.2 Ownership of plot**

In the Socio Economic Survey it is revealed that majority of households in the town, i.e. 87.83% have their own land, 0.61% of household have lease land and the remaining 9.57% have other type of land ownership. It is shown in Figure 11.4 and Table 11.2

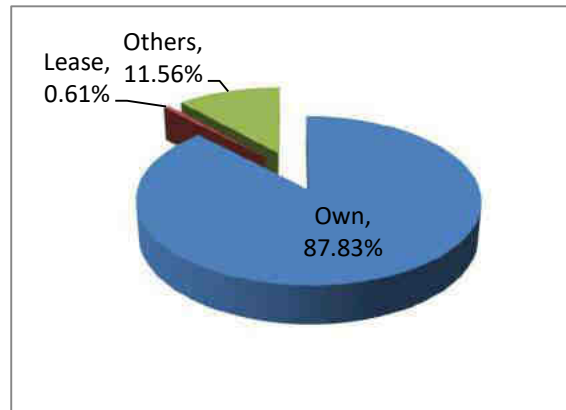


Figure 11.4 Land Ownership Details

Table 11.2 Land Ownership details

Land Owner ship	Own	Lease	Others
Average % for the LSGI	87.83	0.61	11.56

**11.5 SIZE AND STRUCTURAL CONDITION OF HOUSES**

Average plinth area of building with in the Municipality is 94.24 sqm and majority of building (63%) belongs to 50-150 sqm range. In Erattupetta Town, more houses (31.78%) have plinth area in the range of 75-150 sqm, followed by 30.86% houses are in the range of 50-75 sqm plinth area. The houses having plinth area 150-250 sq.m is 12.79%. It is shown in the Table 11.3 and Figure 11.5. It indicates that houses in Erattupetta Municipality have only average building area.

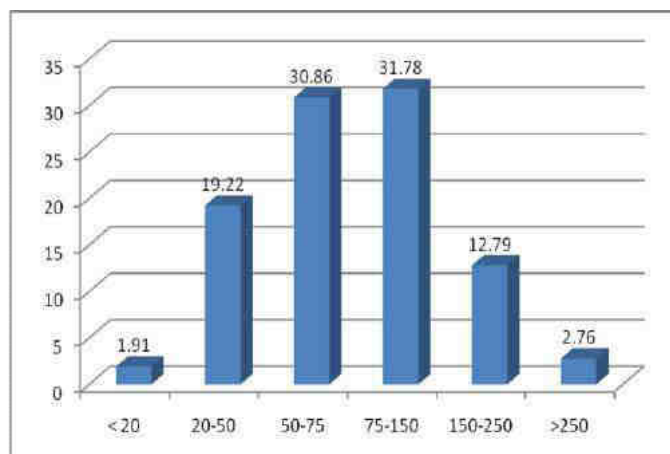


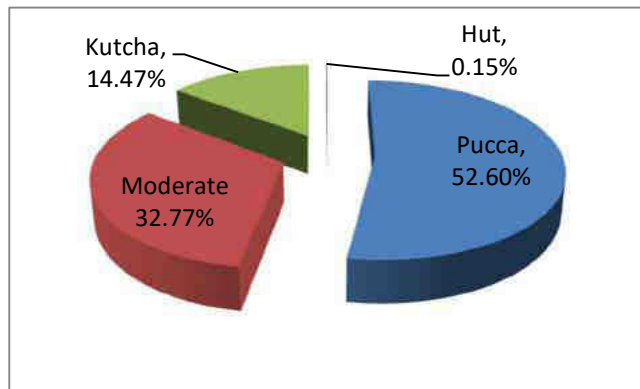
Figure 11.5 Variation of houses in each range of plinth area



**Table 11.3 Percentage of House in each range of plinth area**

Range of plinth area	< 20	20-50	50-75	75-150	150-250	>250
Percentage	1.91	19.22	30.86	31.78	12.79	2.76

The structural condition of houses shows that 52.45% of houses are pucca building, 31.24% of buildings are moderate buildings, 14.47% of buildings are kutcha buildings and 0.15% of buildings are huts. It is represented in Table 11.4 and Figure 11.6.

**Figure 11.6 Structural conditions of houses****Table 11.4 Structural condition of Building**

Type of Building	Pucca	Moderate	Kutcha	Hut
Percentage	52.45	31.24	14.47	0.15

Distribution of houses with different types of floor material, different types of walls and different types of roof are shown in figures 11.7, 11.8 and 11.9 respectively. It indicates that structural condition of houses in Erattupetta Town is much better for nearly 80% housing.

Study results of different types of flooring used in the houses are given in the Table 11.5 and Figure 11.7. From the figure 11.7 it can be seen that 43.72% of houses are with ordinary tiles and 21.90% of houses are with Mosaic and Marble tiles and 32.62% of houses are with other flooring materials.

**Table 11.5 Percentage Variation for Different Types of Floor**

Type of floor	Ordinary tiles and cement	Mosaic and Marble	Others
Percentage	43.72	21.90	32.62

The different type of materials used for the construction of the wall has been studied. The results are shown in Table 11.6 and Figure 11.8. It can be seen that 25.27% of houses are constructed with brick wall and 71.29%

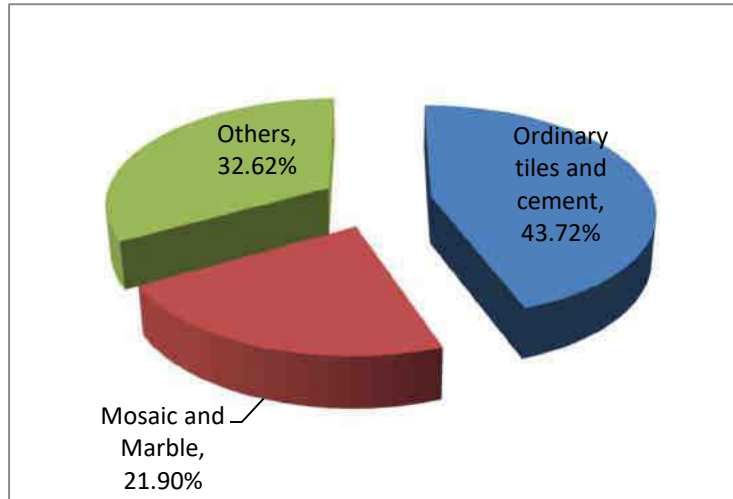


Figure 11.7 Condition of floors of houses

of houses are constructed with brick plastered walls. The remaining buildings are with other type wall materials like coconut leaves, earth blocks etc and its percentage are very less.

Table 11.6 Percentage Variation for Different Types of Wall

Type of wall	Coconut Leaves	Earth blocks	Earth blocks plastered	Brick	Brick plastered
Percentage	0.08	0.38	0.38	25.27	71.29

The Table 11.7 and Figure 11.9 show the percentage of different types of roof. From the Figure 11.9, it can be observed that 59.80% of houses are with concrete roof, 38.21% of houses are with moderate quality roofing materials like tin sheet, asbestos sheet and tiled roof. Only 0.31% of houses are with plastic and perishable materials like grass, coconut leaves etc.

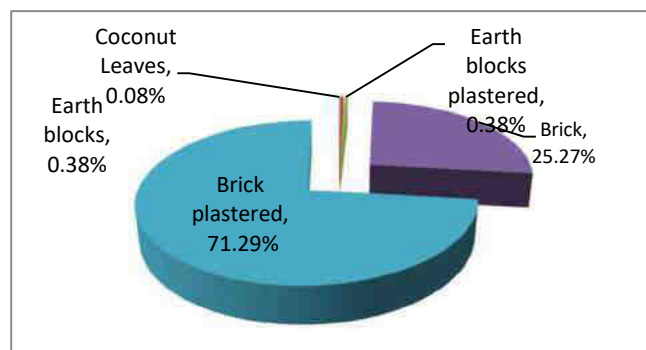


Figure 11.8 Materials used for walls

Table 11.7 Percentage Variation for Different Types of Roof

Type of roof	Plastic, Grass and coconut leaves	Tin, Asbestos and Tiles	Concrete
Percentage	0.31	38.21	59.80

Table 11.7 and figure 11.9 reveals that only 0.31% of houses are to be made safe and secure as well as the quality of life has to improve.

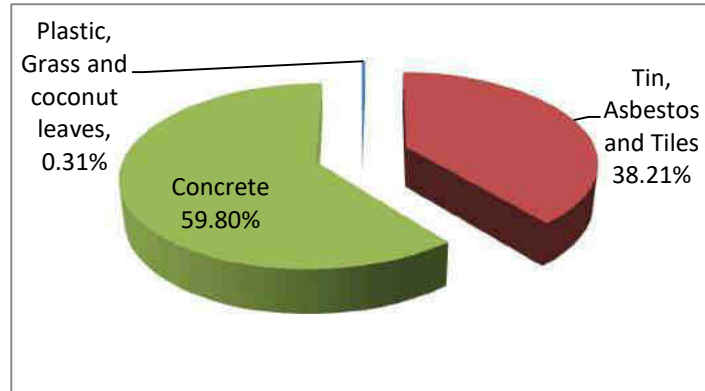


Figure 11.9 Type of roofing materials

### 11.6 SANITARY SYSTEM AND SOLID WASTE DISPOSAL SYSTEM

In Kerala all the houses have its own sanitary system. But solid waste disposal system of commercial and other vicinities have to be considered for further development. As per the Socio-Economic Survey 2016, almost 100% of houses in Erattupetta Town area have some sort of sanitary system. No public sewerage system is there in the Town. Pit latrine is the major form of sanitary waste disposal system and it is followed by septic tank. Percentage wise usage of different sanitary waste disposal systems of the town is shown in Figure 11.10. Survey reveals that 2.0% of houses in Kondoormala ward and Edathmkunnu ward are existing without any mode of sanitation. In Natackal,

Safanagar, Kalluthazham and Aruvithura wards some houses are reported without any mode of sanitation which is to be reported before the Health Department.

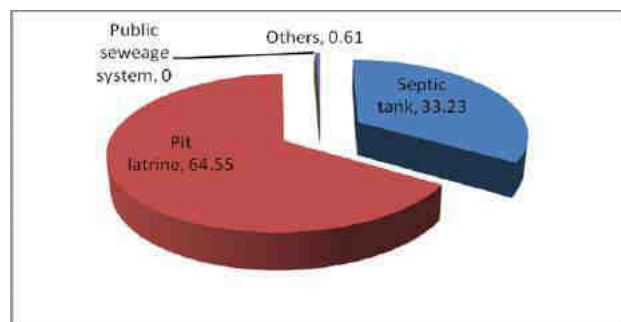


Fig.11.10 Method of sanitary waste disposal

Socio-economic survey also reveals that 82.16% of wastes from the houses are disposed in their own compound. Streets, garbage bin etc are the other places of disposal. The percentage of disposal at different places is shown in Figure 11.11. In

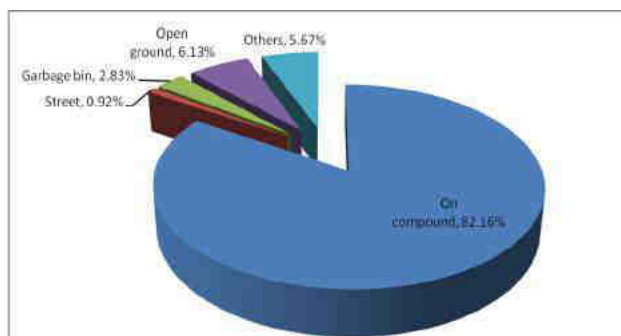


Fig. 11.11 Method of Solid Waste Disposal

Thadavanal ward nearly 50% houses disposes solid waste in other category and survey indicates the probabilities to dump waste in to the meenachil river which is flowing through the entire municipal area.

Better Sanitation system is available for the houses in the town and nearly 33.23 % of houses have septic tanks. But the system for collection of wastes from the houses are very poor. A system for collection of wastes from the houses has to be evolved especially in high density wards.

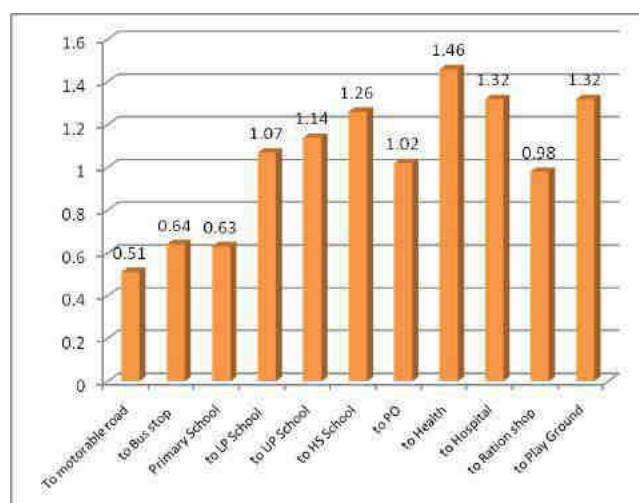
### 11.7 ELECTRIFICATION OF HOUSES

As per the Socio-economic survey (2016) conducted by the Town and Country Planning Department shows that 100% electrification is achieved in Erattupetta town. This shows the improvement of life style in this sector, but complaints of variation in voltage used to occur rarely.

### 11.8 AVAILABILITY OF SERVICES

The average distance in kilometer as per the Socio-Economic survey 2016 from houses to facilities like motorable roads, bus stops, schools, Post offices, health facilities, hospitals, ration shops, play grounds etc are shown in Figure 11.12. The Socio-Economic survey data is also analyzed by comparing the distance to various facilities with certain standard. The average distance to various services and comparison with adopted standards are shown in Table 11.8.

The analysis shows that when compare with the adopted standards, the facilities like motorable roads, high school, Post office, health facilities, ration shops, play ground are available at a close distance to the residential areas. But more distance has to travel for the facilities like bus stops and schools other than primary schools. The distance to LP school seems to be higher than 0.5km for about 68% of the people which



**Figure 11.12 Average distance to various services**

shows that the small children has to travel more distance for reaching the primary education facility.

**Table 11.8 Distance to facilities and comparison with standards**

Sl.No	Facilities and standard	percentage of people having distance to facilities higher than standard
1	Distance to motorable road greater than 0.5 km	1.38
2	Distance to bus stop greater than 0.5 km	35.6
3	Distance to Primary school greater than 0.5 km	35.15
4	Distance to LP school greater than 0.5 km	68.84
5	Distance to UP school greater than 1 km	32.16
6	Distance to HS school greater than 3 km	5.21
7	Distance to Post Office is greater than 3 km	0.61
8	Distance to Health greater than 5 km	0.54
9	Distance to Hospital greater than 5 km	0.61
10	Distance to Ration shop greater than 5 km	0.46
11	Distance to Play Ground greater than 5 km	0.92

Source: Socio –Economic Survey 2016

## 11.9 SQUATTER SETTLEMENTS

There are no approved slums in Erattupetta Town.

## 11.10 CONCLUSION

*Erattupetta town has comparatively better housing condition. The residential density is high and the average size of the plot is comparatively less and 87.83% of people have their own houses. The size of the residences belongs to medium range also high and its structural condition is fairly good. Better sanitary system is available but a few numbers of houses of certain wards are seen without any sanitation methods and necessary measures are to be taken for providing the same. Waste disposal to river bank and also to the river itself is noted at many points and remedial measures are to be suggested for saving the major water source of Kottayam district from pollution. The facilities are available at a reasonable distance when compare with adopted standards.*



## 12. DRINKING WATER

### 12.1 INTRODUCTION

Water has always been an important and life sustainable drink to human being and is essential to the survival of all organisms. But only less than 1% of the whole water on earth is accessible to man and other living beings in the form of fresh water formed in lakes, rivers and underground aquifers. Erattupetta town has got good water resources. The town is divided in to three parts by the waterbodies mainly Meenachil river and the tributaries. The details like water supply scheme, consumption of water, source of water, scarcity of water etc are discussed in the subsequent paragraphs.

### 12.2 WATER SUPPLY SCHEME

Various schemes are provided for supply of Drinking water to Erattupetta and adjacent Grama Panchayats. Nearly 23 water supply schemes are there in the Municipality. Water authority has provided three schemes and the balance 20 schemes are provided by municipality which is maintained by different societies. The three Water supply schemes by Water authority was established in the year 1967, 1968 and 1974. They are namely Erattupetta water supply scheme, Thidanadu water supply scheme and Thevarupara water supply scheme.



**Table 12.1 Details of water supply schemes by KWA**

Sl. No	Name of the scheme	Year of establishment	Location/ Ward No	Established by	maintained by	Source of water	Yield (in MLD/day)
1	<b>Erattupetta Water Supply Scheme</b>	1967	Near Town Check Dam	KWA	KWA	Well	0.46
2	<b>Thevarupara Water Supply Scheme</b>	1974	Near Eettillakayam	KWA	KWA	Well	0.14
3	<b>Thidanadu Water Supply Scheme</b>	1968	Thidanadu	KWA	KWA	Bore well	0.04

Source: Primary survey 2016

The source of water is open well and bore well. Open wells are located on the bank of Meenachil River. The distribution to various part of the town is made from the over head storage reservoir tanks located at various locations. All the 28 wards of Erattupetta municipality have water supply schemes. Name of the scheme, year of establishment, location, and agency established the scheme, agency maintaining the scheme, source of water, yield from source etc are given in Table 12.1.and 12.2



**Table 12.2 Details of water supply schemes by Janakeeya Jalasechana Padthathi (J.J.P)**

Sl.No	Name of the scheme	Year of establishment	Location/ Ward No	Established by	maintained by	Source of water	Number of Households	Yield (in Liters/ day)
1	SULABHA J.J.P	2012	2, 3	PANCHAYATH	SOCIETY	RIVER SIDE WELL (town chek dam)	100	50,000
2	KATTAMALA-SHASTHAM KUNNU J.J.P	2002	7, 8, 16,17	PANCHAYATH	SOCIETY	RIVER SIDE WELL (Eettalakayam)	158	85,000
3	KUTTIMARAM PARAMBU J.J.P	-	9, 11	PANCHAYATH	SOCIETY	RIVER SIDE WELL varavalachik ayam	202	1,00,000
4	KARACKADU J.J.P	-	9, 10,11	PANCHAYATH	SOCIETY	RIVER SIDE WELL varavalachik ayam	161	85,000
5	KOLLAMPARAMBU J.J.P	2003	13,14	PANCHAYATH	SOCIETY	RIVER SIDE WELL (Eettalakayam)	190	1,00,000
6	CHIRAPPARA J.J.P	2008	23,24, 25	PANCHAYATH	SOCIETY	BORE WELL (Road side)	110	55,000
7	MAHATHMA J.J.P	2003	26,27	PANCHAYATH	SOCIETY	BORE WELL (Near Stadium)	140	70,000

8	THEKKEKAR A J.J.P	1996	24,25 ,26	PANCHAYATH	SOCIETY	BORE WELL (Road side)	240	1,00,000
9	MATTACKAD U J.J.P	2001	18 & Poonj ar panch ayat	PANCHAYATH	SOCIETY	RIVER SIDE WELL (MunicipalBo unary)	106	60,000
10	THEVARUPA RA J.J.P	2000	11, 12& Teeko y Panch .	PANCHAYATH	SOCIETY	BORE WELL (Valavanarku zhy)	150	50,000
11	PATHAZHAP ADI- THEVARUPA RA- VALAVANAR KUZHY J.J.P	2004	10,11 ,12	PANCHAYATH	SOCIETY	RIVER SIDE WELL (Opp.elappu nkal Masjid)	350	1,50,000
12	MALIACKAL J.J.P	-	18,19	PANCHAYATH	SOCIETY	RIVER SIDE WELL (Nedunkeethi kayam)	206	1,00,000
13	PALLIPARA J.J.P	-	19,20	PANCHAYATH	SOCIETY	RIVER SIDE WELL (Kunnappalli kadavu)	210	1,00,000
14	KADUVAMUZ HY J.J.P	-	2,4,5	PANCHAYATH	SOCIETY	BORE WELL (Vazhamatta m road side)	120	30,000
15	KEERiyATH OTTAM J.J.P	-	13,14 ,15	PANCHAYATH	SOCIETY	RIVER SIDE WELL (Eettilakaya m)	280	1,25,000
16	MULLOOPAR A J.J.P	2008	14,15 ,16	PANCHAYATH	SOCIETY	BORE WELL (Old paddy land Nadackal)	170	1,00,000
17	PEZHUMKAD U- MATHACKAL J.J.P	2004	2,3,4, 5,6	PANCHAYATH	SOCIETY	RIVER SIDE WELL (Eettilakaya m)	108	55,000
18	ZAM ZAM J.J.P	1998	1,2,3, 4	PANCHAYATH	SOCIETY	RIVER SIDE WELL (Opp:Aruvith ura collage)	350	1,75,000
19	THADAVANA L J.J.P	2006	21,22	PANCHAYATH	SOCIETY	RIVER SIDE WELL (Puthenpally kayam)	158+22 well recharge	1,00,000
20	ARUVITHUR A J.J.P	2008	26,27 ,28	PANCHAYATH	SOCIETY	RIVER SIDE WELL (Near Town check dam)	200	Maintena ce,progre ssing

Source:Primary survey 2016

### 12.3 CONSUMPTION OF WATER

The water supply for the municipality is made by Jankeeya Jalasechana Padthathi (JJP) schemes and KWA. Major portion of the water supply is made by JJP through domestic connection and that of KWA is by public tap, domestic connection and non domestic connection.



KWA Water Tank

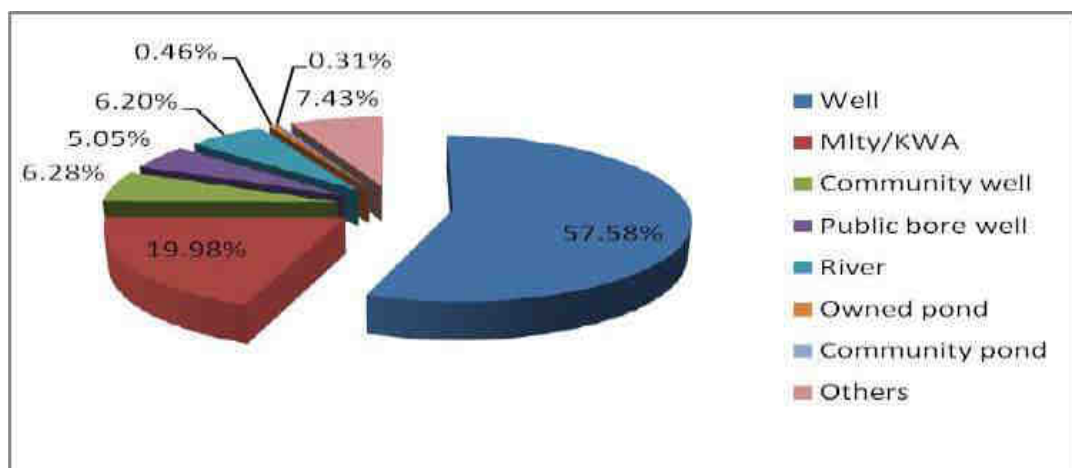
### 12.4 SOURCE OF WATER

In the Socio-Economic survey 2016, 57.58% of people reported that well is the major source of water and 19.98% of people reported that water supplied by KWA is the main source of water. Community well (6.28%), Public bore well (5.05%), River (6.2%) other sources (7.43%) is the other sources of water as per the socio-economic survey. It is shown in Table 12.3 and also in Figure 12.1.

**Table 12.3 Source of Drinking Water**

Source of water	Well	Mity/KWA	Community well	Public bore well	River	Owned pond	Community pond	Others
Average % for the LSGI	57.58	19.98	6.28	5.05	6.2	0.46	0.31	7.43

Source: Socio Economic Survey 2016



**Figure 12.1 Source of Water**

### 12.5 SCARCITY OF WATER

As per the socio-economic Survey (2016) conducted by Town and Country Planning Department, 64.85% of the households reported that there is no scarcity of water, 8.65% reported that there is scarcity for 1-2 months, 16.39% reported that there is scarcity for 2-3 months, 7.2% reported that there is scarcity for 3-6 months and 2.68% reported that there is scarcity for more than 6 months. The scarcity details are shown in Figure 12.2 and Table 12.4

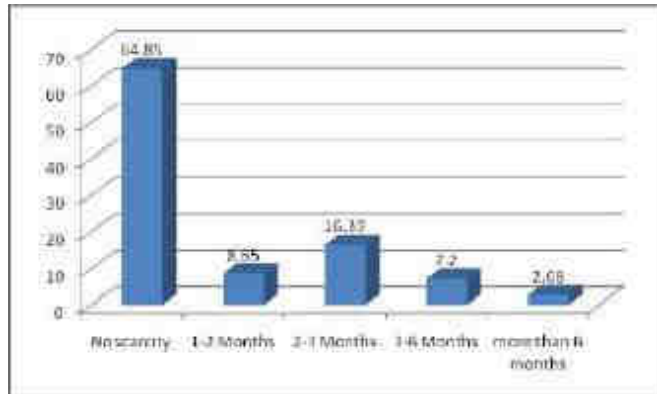


Figure 12.2 Scarcity of water

Table 12.4 Availability of Drinking Water

Category of scarcity	No scarcity	1-2 Months	2-3 Months	3-6 Months	more than 6 months
Percentage	64.85	8.65	16.39	7.2	2.68

Source: Socio Economic Survey 2016

### 12.6 WATER CONSERVATION

The major source of drinking water in Erattupetta Town is River Meenachil and its tributaries. Even though there is sufficient quantity of water in the river and flooding during rainy season, the river will be dried up suddenly with the beginning of summer. The depth of river has been lowered due to



Meenachil River

collection of sand from the river and the available water is also contaminated by draining out waste water and by the deposition of waste into the river. Effort has to be made to prevent contamination of water and also to improve the storage of



water. More number of check dams are to be constructed to improve the availability of water during summer. Protection of Meenachil River has to be done at regional level. The town has an undulating terrain and the rain water drains out immediately after the rain and recharging of ground water is not taking place properly. Efforts are to be made for ground water recharging.

## **12.7 CONCLUSION**

*Water supply schemes are provided in all wards of the town which provides enough water supply for the town. 64.85% of the households reported that there is no scarcity of water (as per Socio-Economic Survey 2016). Undulating topography is a major hurdle in providing piped water supply. For 58% of the households, well is the main source of water. Certain areas of the town needed special attention as there is more scarcity of water. More attention is required to preserve river water and to protect the rivers. Existing water resources have to be protected from pollution so that water can be available for the future needs. The encroachment of water bodies for other uses has to be strictly prohibited and it can be protected providing green strip around them. Authorities must ensure that water bodies are not affected by any form of construction in an area so that encroachment is reduced.*

## **13. TRANSPORTATION**

### **13.1 INTRODUCTION**

For the balanced development of an urban centre planned growth of spatial activities, coupled with provision of adequate infrastructural facilities like transport system, a well defined hierarchy of road network, drainage, water supply, power supply etc are required. But in most of the cities and towns the available road system is not able to cater to the present traffic. The fast development of socio-economic and commercial activities coupled with inadequate supporting facilities and ever increasing demand due to centralization of employment centres in C.B.D area caused a perpetual vicious circle of traffic problems.

Among the various urban infrastructure facilities transportation is the one, which shapes the structure and growth of the city. A workable circulation plan ensuring efficient operation of the transportation system facilitates economic growth of the town. With progressive urbanization travel demand in towns has increased tremendously. This is evident from the long delays and traffic congestion observed on urban roads in most of the towns. In order to make the transport system efficient, there is a continuous need to maintain a balance between demand and supply of facilities within the town and its environs.

As part of preparation of Master Plan for ErattupettaTown various studies related to Traffic and Transportation have been conducted. Study about vehicle population, road network, speed and delay, traffic volume, parking, pedestrian movement etc were carried out.

### **13.2 TRANSPORTATION SYSTEM**

The transportation system of Erattupetta town is road ways. No railway or water way is passing through the town. The road network plays most vital role in the all round development of any area. The existing road network of Erattupetta consist of SH, MDR under Kerala Public Work Department and other roads under Municipality.

The town is located 40 km east of Kottayam, the district head quarters and is well connected to other major centres of the state by a network of State High ways and other PWD roads. Eattumanoor – Poonjar (SH-32), Erattupetta – Wagamon- Peerumed (SH-14), Kanjirappally- Muttam (SH-44) are the State High ways passing through the town.



No railway linkage to Erattupetta Town, Eattumanoor and Kottayam are the nearest railway stations and these stations are located at a distance of 28km and 40km respectively from Erattupetta town. As per the preliminary alignment of this railway line, the proposed Angamali-Azhutha Sabari Railway line is passing adjacent to Erattupetta town.

Nearest airport is Cochin International Airport located at a distance of 75 Km from Erattupetta Town. Another International Airport Thiruvananthapuram is 151 Km away from the town. The propose new airport at Erumely is about 25km near to Erattupetta.

### Road Transport

Road transport is the most important mode of transport in Erattupetta. Public transport in the town is largely dependent on buses, run by both private operators and the Kerala State Road Transport Corporation (KSRTC) buses.

There are three bus stations serving Erattupetta town and out of that two of them are used for the operation of private buses and the third one is exclusively for KSRTC buses which is located at Erattupetta -Kanjirappally road. The Townbus stand located on the Poonjar road is the major operating centre of private buses and the second bus stand is located at Kaduvamuzhy on the Pala road.



Erattupetta is well-connected to the rest of Kerala through the services operated by KSRTC.

### 13.3 ROAD NETWORK

Erattupetta is accessible from North Kerala through Angamaly-Muvattupuzha-Thodupuzha-Muttom route. It is well connected to Tamil Nadu through Kottayam-Kumaly Road to Madurai, via Kanjirappally, which is 16km from Erattupetta. Erattupetta lies in an ancient route from Athirampuzha to Tamil Nadu.

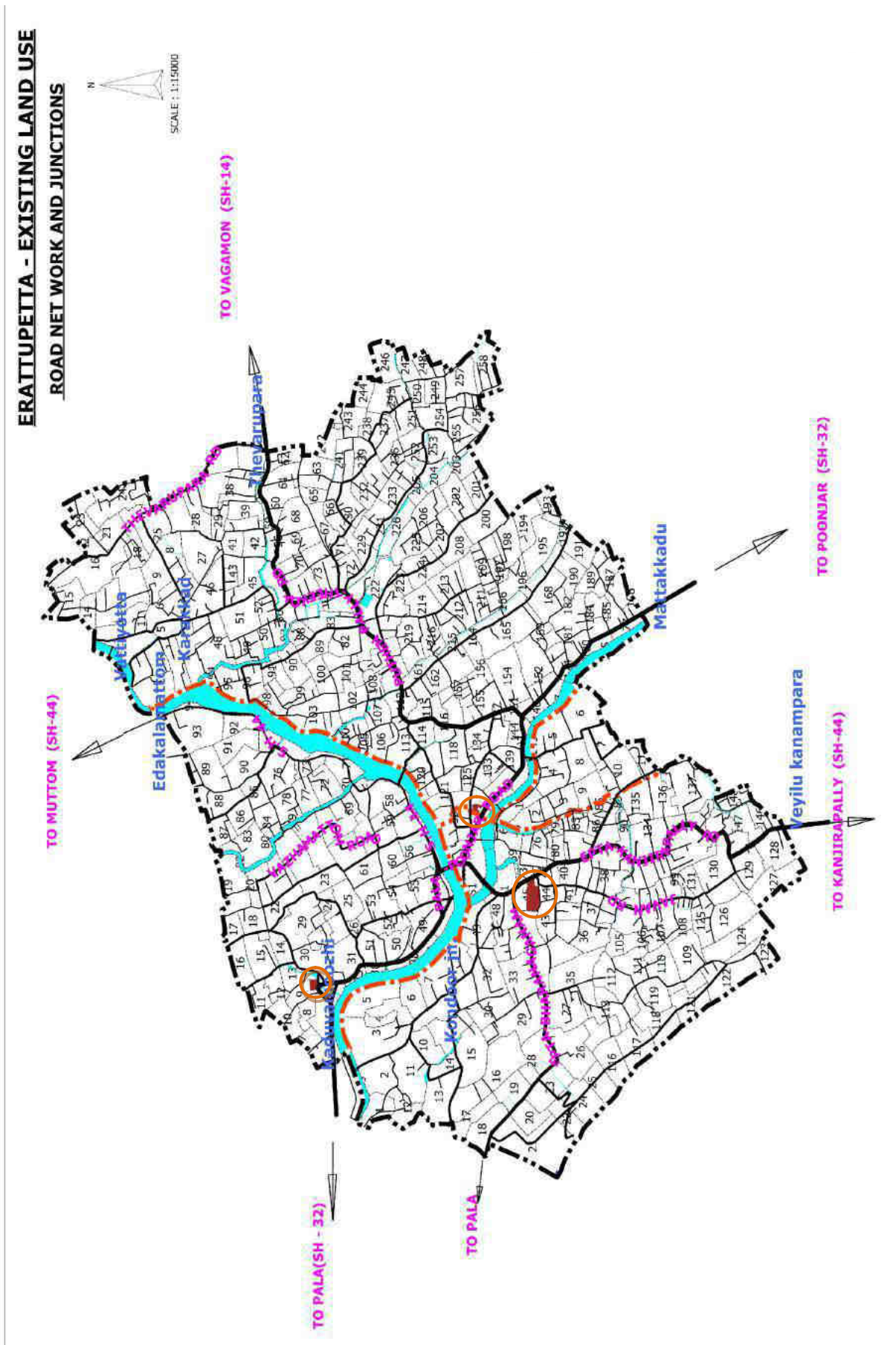
Erattupetta town has good network of roads, maintained by both PWD and Erattupetta Municipality. Road network of Erattupetta town comprises of State Highways, Major District Roads, other PWD and municipal roads. Roads in the study area are congested due to narrow width, narrow bridges, unauthorized parking, absence of segregated bus bays etc. Poor enforcement and road user behavior deteriorates the road safety scenario of the town. Meenachil River passes through the centre of the town and in the earlier days this river was used for water transportation. Major roads passing through and within Erattupetta town consists of the following:

- i. Erattupetta-Peermadu Road (State Highway 14)
- ii. Ettumanoor - Erattupetta-Poonjar Road (State Highway 32)
- iii. Kanjirapally - Erattupetta-Muttom Road (State Highway 44)
- iv. Aruvithura college road (Major District Road)
- v. Chennad Road (Major District Road)

Ettumanoor - Poonjar Road (SH 32) has a length of nearly 2.8km within the municipal area connecting Panackapalam and Mattackadu. Carriageway width of the SH-32 in Erattupetta varies between 7m and 10.5m.

Kanjirappally - Thodupuzha Road (SH 44) has a length of nearly 4.0 km within the municipal area passing through hilly-rolling terrain conditions connecting Ilappunirappu and Velikanampara. Carriageway width of the SH - 44 in Erattupetta varies between 5.5m and 11.5m.

Traffic and Transportation Study for Erattupetta town in Kottayam district Erattupetta - Peermadu Road, commonly known as Wagon Road (SH 14), originating from Erattupetta has a length of 2.3km within the municipal limits connecting MES junction and Aniyilappu. Width of carriageway in Erattupetta is 6.8m.



**Figure 13.1 Existing Road Network of Erattupetta**



### 13.4 ROAD INVENTORY

An understanding of the extent and quality of road network is very important to formulate plans for the future. Road inventory survey was carried out on all the major roads of the study area to obtain information like road length, cross-sections, hierarchical pattern of roads, surface condition, intersections, street furniture, parking area, bus bays etc.

### 13.5 ROAD NETWORK CHARACTERISTICS

Major arterial roads in Erattupetta study region are;

- (i) State Highway 14 (Erattupetta – Wagamon – Peerumedu road) between MES Junction and Aniyilappu (2.3km)
- (ii) State Highway 32 (Ettumanoor – Erattupetta – Poonjar road) between Panackapalam and Mattackadu (2.8km)
- (iii) State Highway 44 (Kanjirappally – Erattupetta – Thodupuzha road) between Ilappunirappu and Velikanampara (4.0km)

Ettumanoor - Poonjar Road (SH 32) has a length of nearly 2.8km within the municipal area connecting Panackapalam and Mattackadu. Carriageway width of the SH-32 in Erattupetta varies between 7m and 10.5m.

Kanjirappally - Thodupuzha Road (SH 44) has a length of nearly 4.0 km within the municipal area passing through hilly-rolling terrain conditions connecting Ilappunirappu and Velikanampara. Carriageway width of the SH -44 in Erattupetta varies between 5.5m and 11.5m.



Erattupetta - Peermadu Road, commonly known as Wagamon Road (SH 14), originating from Erattupetta has a length of 2.3km within the municipal limits connecting MES junction and Aniyilappu. Width of carriageway in Erattupetta is 6.8m.

Major sub-arterial roads in the study region are the

- (i) Aruvithura to College Road (1.2km)
- (ii) Aruvithura to Poovathodu Road (1.6km)
- (iii) Erattupetta to Chennad Road (0.5km)

These roads have their carriageway ranging between 5m and 7.5m. There are many other roads in the town, which provide inter connectivity to these major roads and growth centers in the town. These roads together have a length of around 4.1km with the CW width ranging between 4m and 6m.

### 13.6 VEHICLE POPULATION

Details regarding the number of registered motor vehicles in planning area are difficult to delineate as there is very high level of integration with regard to vehicle flow and traffic from adjoining areas. But the data regarding the number of motor vehicles at district level is available and it is considered for the analysis. Vehicle population growth of Kottayam district has shown a robust growth of 1.6 times during the last decade. The growth of motor vehicles in Kottayam district during the period from 2008 to 2015 is given in Table 13.1.

**Table 13.1: Growth of Motor Vehicles in Kottayam District**

Year	No. of vehicles	Growth index
2008-09	371203	100.00
2009-10	404109	108.87
2010-11	445940	120.14
2011-12	497638	134.07
2012-13	551517	148.58
2013-14	550237	148.24
2014-15	606121	163.29

Source: Economic Review

The number of motor vehicles having valid registration in Kottayam district as on 2015 is given in Table 13.3. An analysis of the existing vehicle population shows that the major share of 58.4 per cent of the total vehicle population in the district continued to be two-wheelers (3,53,944) followed by 18.20 per cent of cars/Taxis/Jeeps (1,10,340).

**Table 13.2: Number of Vehicles having Registration as on 31.03.2015 in Kottayam Dist.**

<b>Sl. No.</b>	<b>Type of Vehicle</b>	<b>Number</b>
<b>1</b>	<b>Goods Vehicles</b>	
	i. Four wheelers and above	31010
	ii. Three wheelers and Tempos	12263
<b>2</b>	<b>Buses</b>	
	i. Stage carriages	1793
	ii. Contract carriages/Omni-buses	14565
<b>3</b>	<b>Four wheelers</b>	
	i. Cars	84588
	ii. Taxis	19996
	iii. Jeeps	5756
<b>4</b>	<b>Three wheelers</b>	
	i. Auto rickshaws	80149
	ii. Motorised cycle rickshaws	0
<b>5</b>	<b>Two wheelers</b>	
	i. Scooters and Motor cycles	353944
<b>6</b>	<b>Tractors</b>	
	i. Tractors	524
	ii. Tillers	609
	iii. Trailers	226
	iv. Others	698
	<b>Total</b>	<b>606121</b>

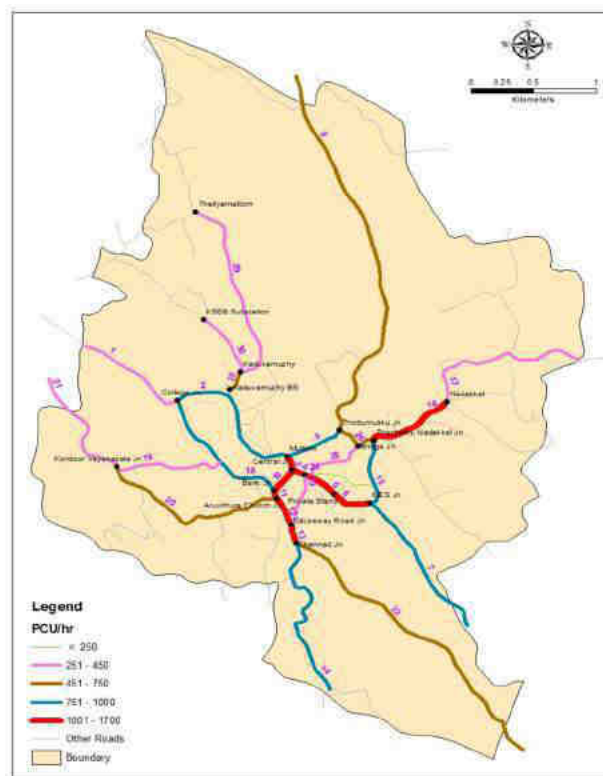
### 13.7 LINK VOLUME AND CAPACITY UTILIZATION

Knowledge of the traffic volume using a particular road network is important to understand the efficiency at which the system works and the general quality of service offered to road users. Data pertaining to traffic volume and its composition was collected for all major roads through link volume survey. Link volume survey was conducted at identified mid block sections by manual traffic volume count classified by the type of vehicle moving in opposite direction. Roads carrying very low traffic were not considered for this survey.

Data collected from the field has been scrutinized and was converted to Passenger Car Units (PCU) by adopting equivalent PCUs.

On Ettumanoor - Poonjar Road (SH 32), the peak hour traffic on the links varied from 400 PCUs to 1,600 PCUs. Ahmed Kurickal to Private Stand recorded 1,600 PCU/hr with significant bus traffic due to the presence of Private Bus Stand. This is followed by Central Junction to Ahmed Kurickal Junction which has recorded of 1568 PCUs/hr and Muttom to Central Junction with 1520 PCUs/hr.

On SH-44, the peak hour traffic on the links varied between 600 PCUs to 1,600 PCUs. Aruvithura Bank Junction to Aruvithura Church Junction arm recorded 1561 PCUs/hr with considerable bus traffic due to KSRTC Bus Terminal. This is followed by Causeway Road Junction to Chennad Junction arm, which recorded around 1,451 PCU/hr and Central to Bank Junction arm with 1393 PCU/hr.



**Figure 13.2: Map showing density of traffic in Erattupetta study area**

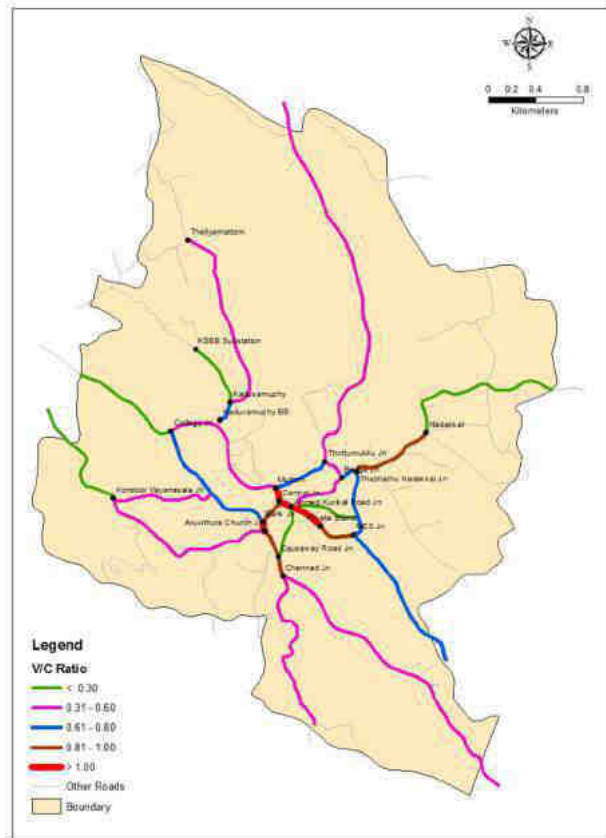
On Wagamon Road (SH-14), the intensity of peak hour traffic varied between 300 PCUs to 1400 PCUs. Link Volume between MES Junction to Thazhathu Nadakkal and Thazhathu Nadakkal to Nadakkal recorded around 978 PCU/hr and 1350 PCU/hr respectively.

Peak hour Traffic on the MDR varied from 250 PCUs to 900 PCUs, whereas on Other Roads, peak traffic varied in between 150 PCUs to 800 PCUs.

**Capacity utilization**

Capacity utilization of the road stretches was measured by volume-to-capacity ratio (V/C Ratio). It is the ratio of volume of peak hour traffic plying on the road stretch to the capacity of the road stretch.

For working out the capacity of different road sections, the information compiled during the road inventory survey was compared with the specifications of IRC-106-1990(Guidelines for capacity on urban roads). While working out the capacities due consideration was given to carriage- way width, junctions, parking, lateral clearance, shoulder, surface condition etc. The traffic volume observed at different road stretches were compared with the capacity of road sections, to calculate the volume - capacity ratio (V/C ratio) of different road sections within the study area. Road stretches within the study area were over-utilized to the extent of more than their carrying capacity. Major road stretches which had their volume exceeded their capacity are given in Table 13.3.



**Figure 13.3: Map showing capacity utilization of roads in Erattupetta**

Road stretches within the study area were over-utilized to the extent of more than their carrying capacity. Major road stretches which had their volume exceeded their capacity are given in Table 13.3.

**Table 13.3 Volume – Capacity Ratio on Major Road Links in Erattupetta**

No.	Name of Road	Road Link	Volume-Capacity Ratio
1	SH-32	Ahammed Kurickal- Private Buststand	1.07
2	SH-32	Central Jn- Ahammed Kurickal Jn	1.05
3	SH-44	Bank Jn – Aruvithura church	1.04
4	SH-32	Muttom Jn - Central Jn	1.01



Source: NATPAC Study Report 2017

### 13.8 TRAFFIC VOLUME AT MAJOR INTERSECTIONS

Based on the reconnaissance survey, turning movement surveys at 11 major/minor intersections in the study area were conducted to ascertain the peak hour demands. Major intersections selected for volume count survey are given in Table 13.4.



The summarized traffic flow in PCU at these intersections is given in Table 5.9. It could be seen that Muttom Junction witnessed the highest peak hour traffic flow of 2,716 PCU, closely followed by Ahmed Kurickal Junction of 2,691 PCUs. Aruvithura Bank Junction, Central junction and Aruvithura Church junction handled peak hour traffic flow above 2,000 PCU during peak hours. At Causeway road junction, MES junction, Chennad junction, Thazhathu Nadakkal Junction, Thottamukku junction and College junction, the traffic flow during peak hours varied between 1,000 to 2,000 PCU.

**Table 13.4: List of intersections selected for turning movement**

Sl. No.	Name of road	Name of Intersection
1	Ettumanoor - Erattupetta - Poonjar Road (SH - 32)	College Junction
		Muttom Junction
		Central Junction
		Ahmed Kurickal Junction
		MES Junction
2	Kanjirapally - Erattupetta - Muttom Road (SH - 44)	Chennad Junction
		Causeway Road Junction
		Aruvithura Church Junction
		Aruvithura Bank Junction
		Thottumukku Junction

3	Erattupetta - Peermadu Road (SH-14)	Thazhathu Nadakkal Junction
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### 13.9 PARKING CHARACTERISTICS

Parking surveys were carried out on major road sections of Erattupetta town to obtain the peak parking demand and parking duration of various categories of vehicles on these road sections. The parking area near the Aruvithura church is the major off-street parking place for both two wheelers and four wheelers.



Of the four major parking corridors where parking accumulation survey was conducted, it was found that the road stretch between Muttom Junction and Kaduvamuzhy Bus Station had the highest parking accumulation of 164 vehicles parked at a time on a normal working day. 46% of the vehicles were found to be two wheelers, followed by cars (28%) and passenger autos (23%). Central Junction - Chennad Junction had peak parking accumulation of 128 vehicles at a time whereas Central Junction - MES Junction had 109 vehicles.



**Figure 13.4: Map showing road stretches selected for parking surveys**

Majority of the vehicles parked at most of parking corridors were found to be for short duration of less than 30 minutes. About 74 per cent of the vehicles parked on selected parking corridors were found to be parked for duration of less than 30 minutes. 15 percent of these vehicles were parked for a period

ranging between 30 minutes and one hour. Around 11 percent of the vehicles parked for more than one hour in the selected corridors.

### 13.10 PEDESTRIAN VOLUME

Pedestrian survey were conducted at important intersections and road sections where the lateral and cross movements of pedestrians were found to be substantial. List of road sections identified for this survey are given in Table 13.5.

Analysis of the pedestrian cross movement at major activity/traffic generation areas within Erattupetta town revealed that a high volume of pedestrian cross movements of 1050 pedestrians/hour were recorded on Ahmed Kurikal Junction - Central Junction arm on SH-32. Peak hour pedestrian cross movement at Muttom Junction towards Kaduvamuzhy on SH 32 recorded 785 pedestrians followed by Aruvithura Church Junction towards Chennad Junction armon SH 44 which recorded 691 pedestrians.



**Figure 13.5: Map showing Pedestrian survey locations**

**Table 13.5 Road stretches identified for Pedestrian Survey**

Sl.No.	Name of Road	Name of Road stretch
1	Ettumanoor - Erattupetta - Poonjar Road (SH – 32)	Muttam Junction - Kaduvamuzhy
		Central Junction - Private Bus Stand
		Private Bus Stand – MES Junction
2	Kanjirapally - Erattupetta - Muttom Road (SH – 44)	KSRTC Bus Station - Central Junction
		Muttam Junction - Thottamukku

3	Erattupetta-Peermadu Road (SH-14)	MES Junction - Thazhathu Nadakkal Junction
---	-----------------------------------	--

High est peak hour pedestrian lateral movements of 1197 pedestrians were observed at Ahmed Kurickal - Private Stand arm on SH 321, followed by Thottamukku - Muttom Junction (810) on SH-44 and Central Junction towards Muttom Junction (802).

### 13.11 TRANSPORT TERMINALS

Erattupetta town has three bus terminals, one at town center on Poonjar road where Private buses are halting and starting the trips, new bus stand at Kaduvamoozhi which is not functioning properly. The KSRTC bus stand and depot is located on the Kanjirappally road near



Aruvithura church Jn. At present there is no terminal for goods vehicles in the town.

### 13.12 CONCLUSION

*The configuration of the existing road network within Erattupetta town does not reflect any regular form, although it resembles more or less like ring and radial type having radial roads connected with partial ring roads. The road inventory shows that majority of roads are with inadequate right of way and carriage way width. The local road network system is needed to be improved.*

*Traffic congestion, location of bus stops, narrow road, on-street parking and bad road conditions were the major causes of delay for traffic flow on major roads in Erattupetta town. It could be seen that the major causes of delay on the SH 32 was traffic congestion, narrow bridge, inadequate road width, unscientific design of junctions, pedestrian movement, on-street parking and locations of bus stops. Road stretches within Erattupetta town area were over-*

*utilized to the extent of more than their carrying capacity. The road stretch “Muttom junction-Central junction - Ahammed Kurukkal junction - Private bus stand” is the major road stretches which had their volume exceeded their capacity.*

*rom parking survey it is found that the road stretch between Muttom Junction and Kaduvamuzhy Bus Station had the highest parking accumulation of vehicles parked at a time on a normal working day. The pedestrian cross movement at major activity/traffic generation areas within Erattupetta town revealed that a high volume of pedestrian cross movements occurs at Ahmed Kurikal Junction - Central Junction arm on SH-32.*



## 14. ENERGY

### 14.1 INTRODUCTION

Electricity is a basic part of nature and one of the most widely used forms of energy. Electric supplies to Erattupetta town and nearby places are under KSEB Erattupetta sub divisional office. The Circle office and Division office are functioning at Pala. Erattupetta, Pala and Ramapuram sub divisional offices are coming under Pala divisional office. Erattupetta, Pinnakkanadu, Theekoy, and Poonjar section offices are coming under Erattupetta



*KSEB office Erattupetta*

subdivision office. Erattupetta 110KV substation is providing the electric supply for the municipal area and nearby places.

### 14.2 POWER DISTRIBUTION

Power distribution is the final stage in the delivery of electric power, it carries electricity from the transmission system to individual consumers. Electric power to Erattupetta subdivision is distributed from Erattupetta 110 KV Sub-Station located at Erattupetta - Thalappalam road. Three transformers are installed in the Sub-Station,



*110 KV Substation Erattupetta*

12.5 Mega Volt Ampere transformer (2nos) and 250KVA transformer (1 no) which makes the smooth functioning of the substation.

Supply to Erattupetta substation is coming from Pala and Udumbannoor substations. Line in- line out method is followed at Erattupetta substation, if there is any power failure occurs at Pala substation or Udumbannoor substation supply will be given via Erattupetta substation. Electric supply to Erattupetta Town, Bharananganam, Vellikkulam, Adivaram and Moonnilavu sections are given form Erattupetta substation via 5 feeder lines of 11KV. Also one feeder line is used for the auxiliary purpose of the substation. Power supply to Thidanadu, Theekoy, Poonjar, Poonjar Thekkekkara, Moonilavu, Bharananganam, Thalappalam panchayath are given from Erattupetta.

Erattupetta town is coming under the Electrical Section Erattupetta and Teekoy. Teekoy section is providing supply to the municipality as well as to the panchayath. So the total of both sections are collected for calculating the category wise consumption details. So category wise consumption details of Erattupetta and Teekoy Electrical Sections are discussed here.

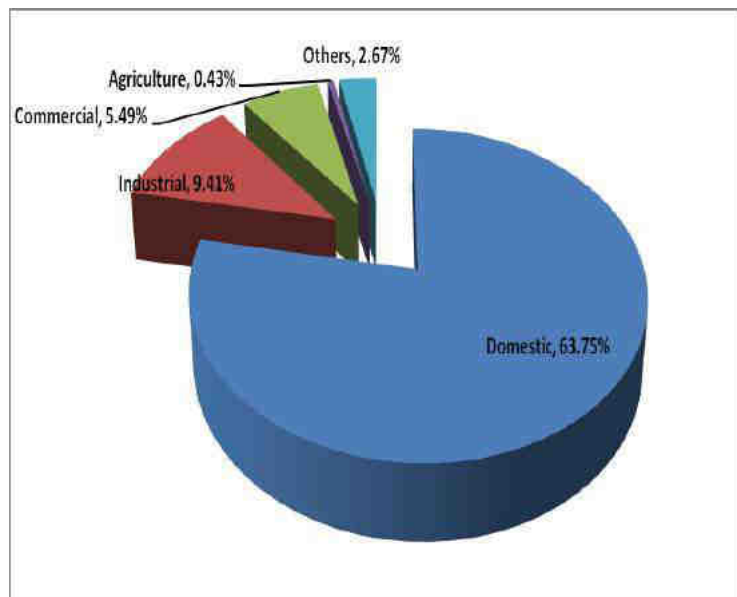


Figure 14.1 Category wise electricity Consumption

Table 14.1 Category wise electricity Consumption (in KWH) details/Month

Sl. No.	Name of office	Domestic	Industrial	Commercial	Agriculture	Others	Total KWA
1.	Erattupetta	1843539	367561	83711	13153	101551	3162915
2	Theekoy	787412	20969	142742	4489	8543	964155

Source:KSEB

More percentage of electric power is used for domestic purpose. Consumption for Industrials is coming next at Erattupetta section but consumption for commercial purpose is coming at Theekoy section. Commercial consumption is very less compared to domestic usage. We can see that for Agriculture purpose the consumption is also very less. The agricultural usage is very less compared to others.

A small Hydro electric project is started near the town, which is located at one of the main branch of Meenachil river. A mini gravity dam of 12m height is proposed to construct at Marmala waterfalls near the boundary of Theekoy and Thalanadu Panchayath. About 7 Mega Watt electric power can be generated from Marmala Hydro electric



**Hydro electric project Office**

project. 7.5 Hecter land is accured for the project. Construction works are allready started and the survey works for the catchment area is completed. The cost of the project is about 70.18 crores and will be completed by the year 2020. Approximately 23.02 million unit power can be generated in a year by the completion of the project.

### **14.3 CONCLUSION**

*After the installation of the 110 KV substations there is no voltage problem in the municipality. Since the feeder lines are passing through the rubber plantations, in monsoon season the electric failure is a main problem which is caused by the heavy wind and rain. By clearing the branches of trees regularly and by providing electric posts having more height the power failure can be controlled. For the better power supply at town centre Aerial Bunched Cable (ABC Cable) system is implementing at 7.5km town center roads. Also Street*

*light should be provided at all municipal roads. Similar steps should be taken to minimize the non- conventional energy sources to generate electricity such as from bio- waste, wind energy where ever it is feasible and solar energy. Effective utilization of available resources could build up a better environment to cater the future demand.*

# 15. SOLID WASTE MANAGEMENT AND SANITATION

## 15.1 INTRODUCTION

Better hygienic and health conditions for any society can be achieved by proper sanitation facilities. Households generate a major share of Municipal solid waste. Efforts of Municipalities for managing solid wastes frequently meet with failure, which is one of the major problems faced by all Municipalities. Many households in Municipal areas seem to throw away waste without any concern for the consequences. Increase in the volume of urban waste is primarily due to increasingly prosperous life style, rather than urban growth. Responsible behavior towards management of depleting natural resources with care increased productivity and sustainability are indeed important for keeping the environment unaffected and safe for the future generation. Unprocessed solid waste pollutes air, water and other natural resources. Efforts are needed to make people realize that 'waste is wealth'. It is high time that authorities formulated and implemented planned procedures to handle the ever-increasing solid waste issues.

## 15.2 SOLID WASTE COLLECTION SYSTEM

Erattupetta municipality have a dumping yard in the municipal boundary located at Thevarupara. Presently there is no permanent employee for Health wing. The solid wastes are collected by employees working under contract basis. No proper systems are implemented for collecting the



*Dumping yard at Thevarupara*

wastes. Presently the solid wastes are dumped at different locations of the main roads which is collected in tractor and shifted to the dumping yard by the contract staff. These solid wastes are burned at the dumping yard. There is no arrangements for proper disposal of solid waste in the dumping yard.



### 15.3 WASTE DISPOSAL SYSTEM

The waste disposal yard is located at Thevarupara. Presently there is no solid waste disposal system for Erattupetta Municipality. The solid waste collected from different locations of the town are collected in vehicle and dumped at this yard. All types of wastes are dumped here. Segregation of waste is not done anywhere of the collection point or at disposal site. The present dumping system is making many problems for the people residing nearby places. Since the yard is located on the top of hill in rainy season the waste water coming from the dumping yard will flow to the river and wells near the place. Since most of the drinking water sources are located on the bank of the Meenachil River it pollutes the water in that area which makes serious health issues.

In the Socio-Economic Survey (2016) conducted by the Town and Country Planning Department, 82.16% households reported that they are disposing the solid waste in their own compound, 6.13% disposing in open ground, 2.83% at garbage bin and 0.62% at street. It is shown in Figure 15.1. Nearly 72% of the residential buildings are situated in

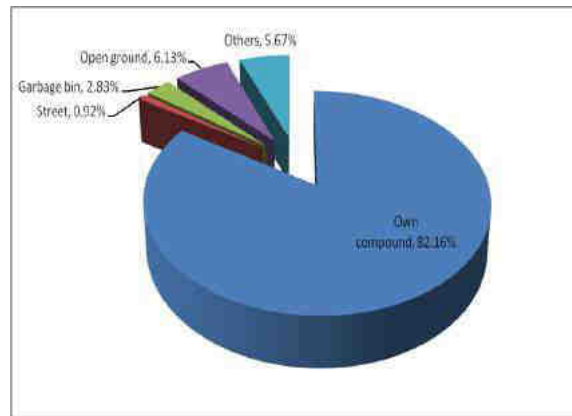


Figure 15.1 Place of disposal of Solid Waste

plots of area less than 10 cents. Proper waste collection system has to be provided by the municipality. More facility is needed for the solid waste management. The present system of sewage disposal and treatment is septic tank, which is a cost effective solution. De-sledging of septic tanks is not carried out on a regular basis.

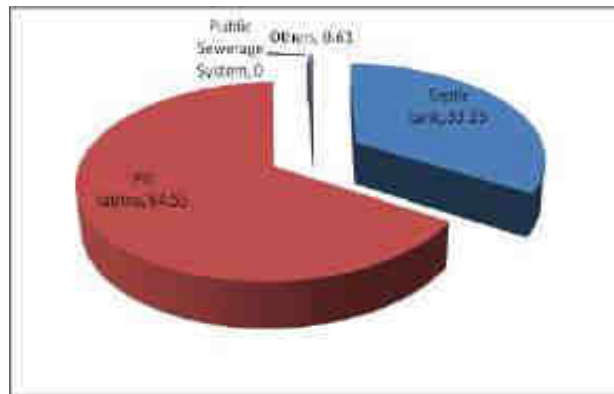
### 15.4 DISPOSAL OF BIO MEDICAL WASTES

No system managed by the Municipality is there for collection and disposal of bio-medical wastes from the Hospitals functioning in the town.

### 15.5 SANITARY WASTES

Presently there is no sewage system for Erattupetta Municipality. As per the Socio-economic survey conducted by the Town and Country Planning Department (2016) almost all houses have some sort of sanitation system. In

the survey it is also inferred that 33.23% of houses have septic tank, 64.55% of houses have pit latrine. It is represented in Figure 15.2 and the analysis shows that better Sanitation system is available for the houses in the town



**Figure 15.2 Disposal of Sanitary wastes**

### 15.6 DRAINS

Thekkanaar and Vadakkanar forms Meenachil River which flows through the town and these natural drains divide the town into three parts. The town has a natural slope towards these drains and major portion of surface run off drains into these rivers and its tributaries. For tracking the surface run off, no proper drainage systems are available along the major roads. Proper drainage system is required for the surface run off. The topographical features of the Erattupetta town suggest that the peripheral elevated points converge to valley which is located at the town centre. Polluting the river by dumping wastes and also by encroaching its banks creates the core as a nastiest area of the Municipal area. Sloping terrain and the existing water channels facilitates natural drainage of storm water runoff from the city. However unplanned encroachment of river sides for various purposes and creeping of wastes results in water logging in certain areas of the river during monsoon.

### 15.7 MEENACHIL RIVER

Meenachil River which is formed by intersecting the Vadakkanar and Thekkanaar is the major source of drinking water for major portion of Kottayam district is starting from Erattupetta town. During the rainy season the river is flooded with water. But during the summer season sufficient



Meenachil River

quantity of water is not available from the river. The drainage pattern of the town and the other settlements on the bank of the river is such a way that the waste water is disposing into the river. In addition to that service stations, workshops and hotels are also depositing waste materials and water in to the river making the river polluted. The river is bifurcated in to two parts at town centre Pollution of river is one of the major issues in the town.



### 15.8 PUBLIC COMFORT STATIONS

Presently there is only 3 number of public Toilet/comfort stations at Erattupetta municipality. At Private bus stand an old comfort station is functioning. Another one is functioning at Thodupuzha road on the bank of Meenachil River. KSRTC bus station does not have a good comfort station facility. More number of public Comfort Stations is to be provided at different parts of the town. Public comfort stations have to be installed at major public places.

### 15.9 CONCLUSION

*The existing city drainage system lacks proper maintenance and connectivity for a free flow of polluted water. Lack of public sense is also a factor for poor functioning of the existing drains. Citizens should be made aware of the fact that indiscriminate disposal of wastes in to water way not only create drainage problems, but also detriment to their health and hygiene. Solid wastes are depositing at open land which is creating hygienic problems for the people. There is no proper waste management system for the town, so a good waste disposing system should be provided in the municipality. Facilities for disposing the bio medical wastes should be provided. From the socio economic survey it is found that about 98% of the houses is having some sort of sanitation disposal system in their own property. Proper drainage system should be provided in town. The contamination of Meenachil River is another issue to be considered. More number of public comfort stations should be provided in the town.*

## 16 EDUCATION

### 16.1 INTRODUCTION

The general education status is assessed based on literacy rate, number of educational institutions per 1 lakhs population and educational status. The literacy rate of Erattupetta town as per 2011 census is 82.60 %. The literacy rate of Kottayam district and Kerala state are 96.40% and 93.99 %. The literacy rate of the town is less than that of the district and the state. As per the socio economic survey the number of primary educational institutions existing within the town is adequate and higher order educational facilities available are not satisfactory

### 16.2 GENERAL EDUCATION STATUS

Aruvithura St. George College and some other educational institutions are available in Erattupetta town. Aruvithura St. George College was established in the year 1965 and in 1978 it was upgraded as senior college. Another B.Ed college was established in the year 1993. A



A few number of Higher secondary schools and high schools were also present here. The Govt. UP school established in Kuttippara in 1910 was later upgraded as Higher Secondary School in 1997 and now situated at Thekkekara. St. George Higher Secondary School established in 1952 as high school was upgraded in 1997. Muslim Girls Higher Secondary School established Erattupetta in 1964 was upgraded in 1991. MES College situated in the outskirts of town serves as a higher order educational institution. Higher order



educational institutions were very limited in number comparing to surrounding towns.

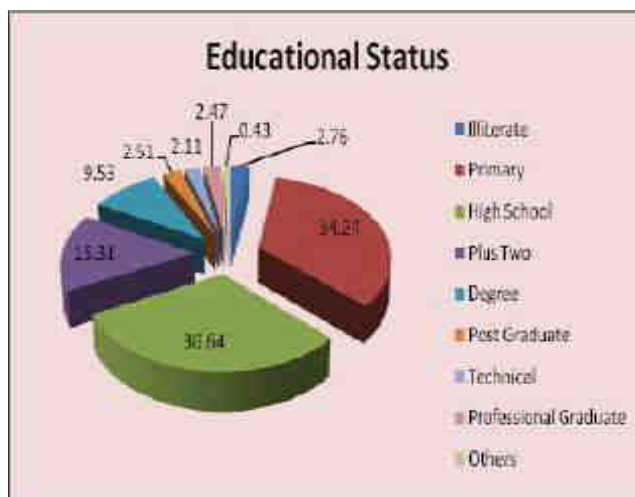
The educational status of the town is assessed by comparing the percentage qualification of the people recorded as per the socio economic survey 2016. It is shown in table16.1 and Figure16.1

**Table 16.1 Educational status of town**

Type	Illiterate	Primary	High School	Plus Two	Degree	Post Graduate	Technical	Professional Graduate	Others
Percentage	2.76	34.24	30.64	15.31	9.53	2.51	2.11	2.47	0.43

Source: Socio Economic Survey 2016

The above figure shows that 34.24% of people have only Primary Education, 30.64% of people have high school education and 15.31 % people have Plus Two qualification. The remaining 9.53% possess degree and 2.51% post graduate qualification. The above analysis shows that Erattupetta has comparatively less literacy rate



**Figure 16.1- Educational Status**

and the educational qualification of the people is very low. Overall educational status of the town is very low comparing to other towns.

**16.3 SCHOOL EDUCATION**

The details of schools in the town, i.e. number of students, number of teachers, syllabus, Category like Government, aided, unaided, unrecognized etc, facilities available, medium of instruction, established year etc are taken There are 13 schools functioning in Erattupetta town limit. The number of schools in various categories is shown in table16.2



**Table 16.2 Number of schools in various categories**

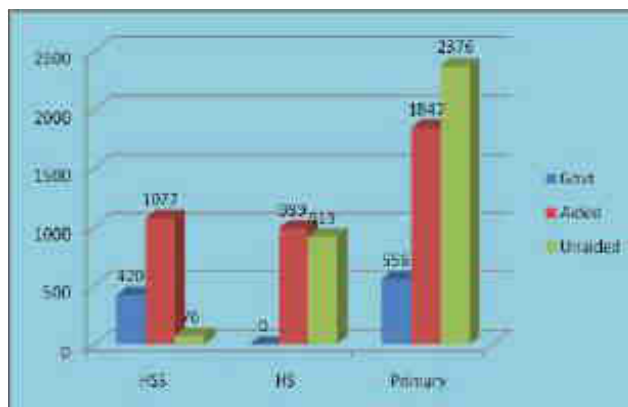
category	Govt	Aided	Unaided	Total
Primary	1	3	1	5
High School	0	1	2	3
Higher Secondary	1	2	2	5
VHSS	0	0	0	0
ITI	0	0	0	0

Source: Primary Survey 2016

**Table 16.3 Details of schools in various categories**

SL. NO.	NAME OF SCHOOL	Number of Students				Number of Teachers				Students_Teachers ratio				SYLLABUS(up to HS)	Gov/Aided/Unaided /Unrecognised	
		CATEGORY	PRE-PRIMARY	PRIMARY	HIGH SCHOOL	HSS	PRE-PRIMARY	PRIMARY	HIGH SCHOOL	HSS	PRE-PRIMARY	PRIMARY	HIGH SCHOOL			H.S.S
1	St.George H.S	3	-	119	216	-	6	12	-	-	20;1	18;1	-	Kerala	Aided	
2	St.George H.S.S	4	-	-	-	315	-	-	16	-	-	-	20;1	Kerala	Aided	
3	Gov. H.S.S	4	-	64	63	420	-	7	6	23	-	9;1	11;1	18;1	Kerala	Gov.
4	Muslim Girls, H.S.S	4	-	452	710	762	-	20	27	29	-	23;1	26;1	26;1	Kerala	Aided
5	St.Marys L.P.S	1	-	322	-	-	-	13	-	16	-	25;1	-	-	Kerala	Aided
6	M.M.M.M.U.P.S	2	126	786	-	-	4	31	-	-	32;1	25;1	-	-	Kerala	Aided
7	Gov.Muslim.L.P.S	1	181	311	-	-	4	14	-	-	45;1	22;1	-	-	Kerala	Gov.
8	P.M.S.A.P.T.M.L.P.S	1	14	28	-	-	1	5	-	-	14;1	6;1	-	-	Kerala	Aided
9	Karimsahib boysH.S	3	-	-	171	-	-	9	-	-	-	19;1	-	-	Kerala	Unaided
10	St.Alphonsa H.S.S	4	294	508	287	26	9	23	12	H.S T	33;1	22;1	24;1	-	C.B.S.E	Unaided
11	AL Manar H.S.S	4	229	410	418	50	9	22	16	4	33;1	22;1	24;1	-	C.B.S.E	Unaided
12	Hayathudeen H.S	3	195	503	43	-	5	18	5	-	39;1	28;1	9;1	-	Kerala	Unaided
13	Thanmiya School	1	91	146	-	-	5	7	-	-	18;1	21;1	-	-	C.B.S.E	Un recognised

The ownership of schools i.e. in Government sector or private sector of various category is shown in table 16.2. All schools in High School level in municipal limit are functioning in private sector. But in the case of Higher Secondary one school in Government sector and four schools in private sector. Only one UP school is functioning in private sector. In the case of L.P School, one school functioning in government and two in



**Fig 16.2 Number of Students in various categories of Schools**

private sector. This shows the predominance of private sector in the school education of town.

In High school and Higher secondary section, one Government school is available and nearly 500 students got admission there. Maximum number of students engaged in aided sector nearly 4000 and second position for unaided sector 3371 and only 1000 students got admission in Government sector which is not at all satisfactory. Number of students in three categories of school in primary, High school and Higher Secondary categories is shown in Figure 16.3. CBSE syllabus is followed in three schools and Kerala syllabus is followed in all other institutions.

The student –teacher ratio of Government Schools, Aided schools and unaided schools of the town in Higher Secondary school, High school and primary school is shown in figure 16.4. It can be observed that the ratio is almost same in aided school and unaided school level. But in higher secondary school level the ratio for unaided school is half that of aided school. In High school level the ratio for Government school is half that of Aided and unaided schools.

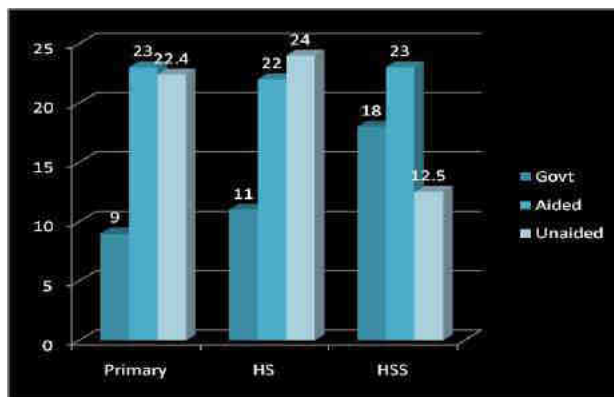


Fig 16.3 Students Teacher Ratio of schools

Regarding facilities available at school, the parameters like play ground, separate toilets for girls, computer labs, internet facilities, drinking water, good road etc were considered. It shows that except internet facilities and transportation facilities (school vehicles) most of the facilities are available in all schools. Almost all the facilities are available in Government school. Basic facilities and advance facilities especially computer lab and

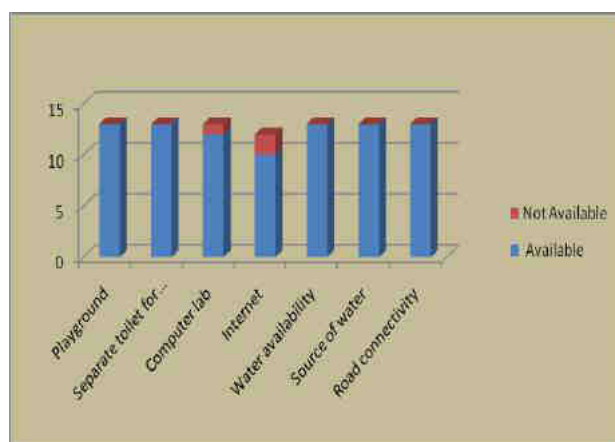
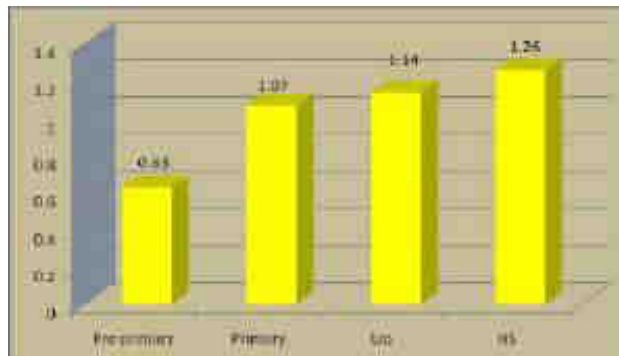


Figure 16.4 Facilities available at schools

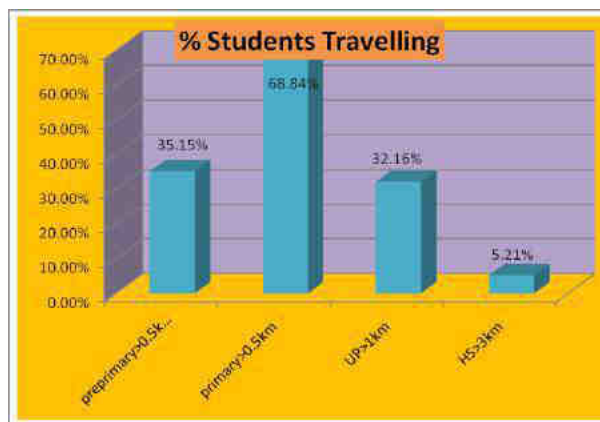
Internet facilities are available in almost all the schools. Vehicle conveyance is not available in most of the school.

The availability of institutions (distance to educational institutions) various category of schools has been analyzed. As per the socio-economic survey of 2016, the average distances to Pre-primary school, primary school, UP school and high school are 0.63km,1.07km, 1.14km, and 1.26km respectively. It is represented in Figure16.6. It is realized that educational institutions are available at a reasonable distance for the inhabitants of the town.



**Figure 16.5 Average distance to schools**

Certain standards are adopted for comparing the travelling distance to different schools. The adopted standards based on studies related to preparation of IDDP and LDPs in Kollam district, are the pre primary school, primary schools upper primary schools and high schools shall be available within a distance of 0.50, 0.50, 1.00 and 3.00Km respectively. The percentage of people saying that distance to different category of schools greater than the standard is shown in Figure16.7. The figure shows that in the case of primary schools 68.84% of students travel more than 0.5km distance and for primary school, 35.15%of students travel more than 0.5km distance. Even though there are sufficient number of schools in the town there is concentration in certain part of the town and it implies that primary schools are not evenly distributed. The selection of school by the society is based on the standard and the syllabus followed in the schools. This may the reason for increase in travelling



**Figure 16.6 Percentage of Students**

is shown in Figure16.7. The figure shows that in the case of primary schools 68.84% of students travel more than 0.5km distance and for primary school, 35.15%of students travel more than 0.5km distance. Even though there are sufficient number of schools in the town there is concentration in certain part of the town and it implies that primary schools are not evenly distributed. The selection of school by the society is based on the standard and the syllabus followed in the schools. This may the reason for increase in travelling

distance. Survey reveals that high schools are available at a reasonable distance.

#### 16.4 HIGHER EDUCATION

St. George College Aruvithura situated on the strands of the river Meenachil, was established in 1965 under the auspices of St. George Forane Church, Aruvithura. St. George's College is an educational institution affiliated to Mahatma Gandhi University, Kottayam. It started as a Junior College in 1965 with five batches of students in the first pre-degree class. The college was upgraded to the status of a fully-fledged degree college in 1978 with a significant increase in the number of students and faculty. B.Sc Computer Science, Microbiology, Biotechnology, BioChemistry, Chemistry, Zoology and BA are the courses offered here. A total of 16 UG courses and 7 PG courses are undergoing there.



**Fig. 16.7 St. George College**

MES College Erattupetta situated on the outskirts of municipality provides better educational facilities to the natives of high range region. The prime objective of the institution is to equip the youth with the skills necessary for meeting every challenge in the technological age. The college has been shifted from Erattupetta to its own campus at Vettikulam, Thidanadu. B.Com Computer Application, B.Com Finance and Taxation, BBA and BCA are the courses offered here.

Georgian College is another institution situated at Thadavanal ward established in 1974. Higher secondary and UG courses are undergoing and it is an unaided institution with MG University affiliation. Manbaul – Khairath Arabic College established in 1923 was situated at Nainar juma masjid with a total of 16 students and 3 teachers.

## 16.5 TECHNICAL EDUCATION

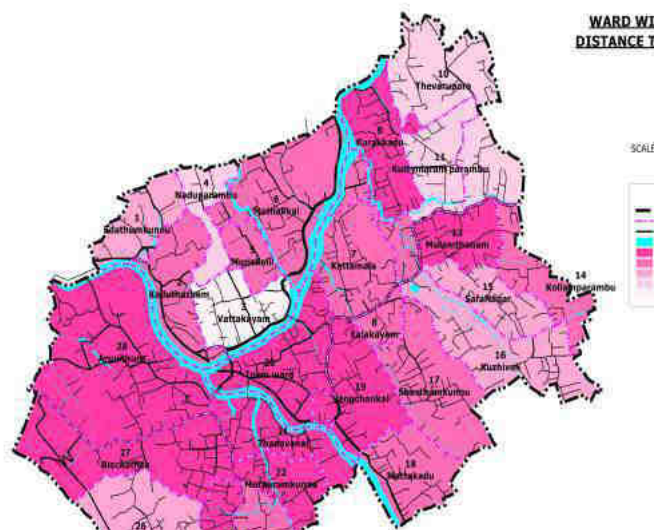
One B.Ed centre of MG University is functioning within the campus of Govt. Higher Secondary School which is the only technical institution available at Erattupetta. One BUDS School first one in Kerala established as a special school was situated in Erattupetta. School was functioning at Nadackal in Municipal building. Out of 43 students studying, 15 were in prevocational class with technical training.



**Fig. 16.8 B. Ed Centre**

## 16.6 SPATIAL DISTRIBUTION OF SCHOOLS

The ward wise average distance to L.P.School, U.P.School and High School and its comparison with the adopted standards were taken. The average distance to L.P.School varies from 0.51 to 4 Km, the average distance to U.P.School varies from 0.50 to 4Km and for High School it varies from 0.50 to 3.93 Km. The average distance to L.P.School and U.P.School is more



**Fig. 16.9 Average Distance to LP School**

in Vattakayam, Thevarupara, Kuttimaramparambu, Safanagar, Kuzhiveli, Naduparambu and Kondoormala wards. In the case of High Schools the average distance to school is more in Vattakayam, Thevarupara and Naduparambu wards. The average distance to L.P.School, U.P.School and High School is shown in Figures 16.10, 16.11 and 16.12 respectively.





**Fig. 16.10 Ave. Distance to UP School**



**Fig. 16.11 Ave. Distance to High School**

## 16.7 CONCLUSION

The town has average literacy rate and educational standard. Kaduvamoozhi PTM LP School provided with sufficient building facilities is nearing closure as the number of students very less. The land and infrastructure available can be utilized for starting new generation education institutions there. Up to high school section number of students is very less in Government Higher secondary school and the Higher secondary section is engaged with 420 students. Infrastructure facilities are not satisfactory at Government HSS. More number of students are studying in Aided school and unaided schools. Travel distance to the schools in primary level is higher than standards. Skill development programmes should be introduced in Government schools so that educationally backward students can attain better job opportunities and thereby attracting more number of students to Government schools. BUDS School needs upgradation and better facilities to be provided.

## 17 HEALTH

### 17.1 INTRODUCTION

Kerala's achievement in the field of health care is well appreciated, as its health standards are almost comparable to those of the developed countries in the World. Kerala is considered as a model to be emulated not only by the rest of the country but also by other developing countries of the world for maintaining high health standards with low levels of per capita income. Kerala's high health status is reflected through low birth, death and infant mortality rates, and the long life expectancy.

The Government of Kerala has recognized and institutionalized the three major systems of Medicine that are popular in the state-Allopathic, Ayurveda and Homeopathy. The three systems are under three parallel organizational structures in terms of training, research or functioning. The allopathic system of medicine under the government encompasses both the rural and the urban areas. The rural public health care sector provides preventive and curative care. Hospitals at the urban areas comprise Medical College Hospitals, district/general hospitals and taluk hospitals which provide outpatient and in-patient treatment. Rural health services are provided through Primary Health Care Centers, Sub-Health Centers, Maternal and Child Welfare Centers, Maternity Homes, Community Welfare Centers and Family Planning Centers. The Ayurveda and Homeosystems of medicines under the Government consist of dispensaries at the primary level and hospitals at the secondary level.

### 17.2 EXISTING SCENARIO

Institutions in Allopathic and Homeo are functioning in Erattupetta town. The existing status of medical facilities, spatial distribution of medical facilities, major diseases reported in the town etc. are discussed below. Erattupetta Municipality has health institutions in government sector and hospitals in private sector.

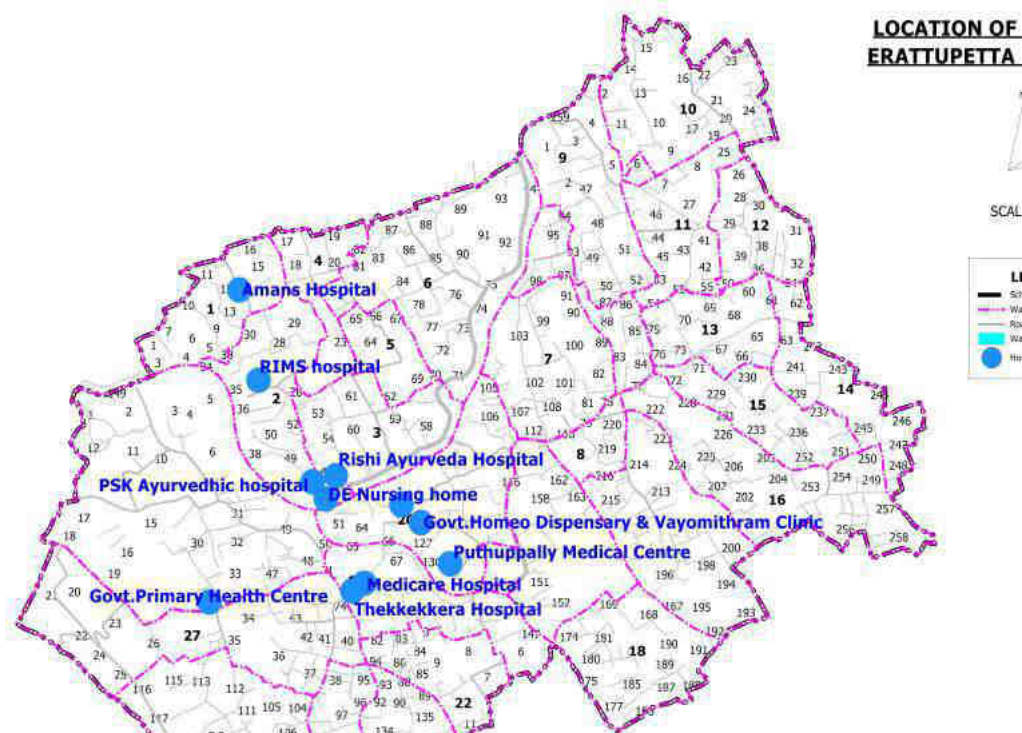


Figure 17.1 Locations of Hospitals

### 17.2.1 ALLOPATHIC SYSTEM OF MEDICINE

List of hospitals in allopathic system of medicine functioning in the town is shown in Table 17.1. Allopathic hospitals are functioning both in government and private sector. In public sector only a primary health centre is functioning which is



located at Ambaranirappel - Bharananganam road with two permanent doctors and two temporary doctors. On an average 350 outpatients and 12 inpatients are admitted here. Higher order infrastructure facilities are not available proportionate to the population density of the town. Primary Health Centers are multipurpose units established at the peripheral level to render preventive and curative medical facilities to the rural population.

**Table 17.1 Details of Allopathic Hospitals**

Sl:No	Hospitals	No. of beds	No. of Doctors
1	Govt. Primary Health centre	12	4
2	Raihan Institute of Medical sciences	110	38
3	Medicare Hospital	18	2
4	Puthupally Medical centre	150	2
5	D E Nursing Home	-	3
6	Thekkekara Hospital	-	1
7	Amans Hospital	-	1

Six hospitals are established in private sector of which Raihan Institute of Medical sciences established in 2014 at Kaduvamoozhi is a Super speciality Hospital with almost all medical units which caters the need of Erattupetta

and surrounding panchayats .Units like General surgery, Gastro-entriology, Nephrology, Cardiology, Neurology and Radiology with modern lab facility and scanning facilities are available. 600 outpatients and 110 inpatients are reported daily. Raihanis functioning with higher order medical facilities.



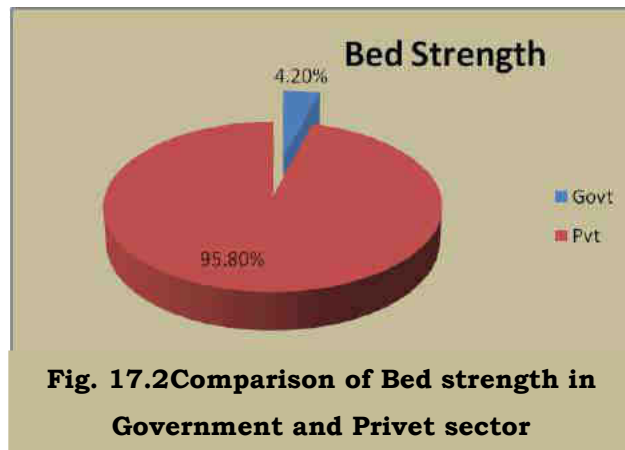
Puthupally medical centre situated near Poonjar highway deals with 100 inpatients and 120 outpatients. Another one DE Nursing home situated near Muttom junction accommodates 75 outpatients daily and General Medicine, Skin, Dental units are only Functioning here.



Thekkekara Hospital situated opposite to KSRTC bus station admits 80 OP daily in General Medicine unit. Amans Hospital situated opposite of KSEB substation in Plassanal road admits nearly 20 OP in General Medicine unit.



A comparison of government and private sector is shown in figure 17.2 and it shows that 95.80 % of beds are in private sector and 4.20 % of beds are in government sector. The facilities in the hospitals like number of beds, number of doctors, departments etc are given in Table 17.1



**Fig. 17.2 Comparison of Bed strength in Government and Private sector**

Two Dental clinics, Meenachil Dental clinic and Karunya Dental hospital are also functioning within the town limit.

### **17.2.2 HOMOEOPATHIC SYSTEM OF MEDICINE**

Government Homeo Dispensary functioning in the Municipal building near Private bus stand reports with 120 OP daily and the service of only one doctor is available here. Kizhakkethottam Homeo clinic situated near private bus stand is another Homeo clinic with nearly 30 OP daily.

### **17.2.3 AYURVEDIC SYSTEM OF MEDICINE-**

Government Ayurvedic dispensary is functioning with no infrastructure facilities and only one doctor and two temporary staffs are available. Nearly 40 to 60 patients reported at OP daily. Another P.S.K Ayurveda Vaidyasala situated near Erattupetta Police Circle office is also available. Rishi research ayurvedic centre is also functioning in this sector.

### **17.3 SPATIAL DISTRIBUTION OF MEDICAL FACILITIES**

Distances to a Medical facility and hospital have been assessed in the Socio-Economic Survey conducted in 2016. In the survey, it is found that the average distance to a medical facility is 1.46km and a hospital is 1.32km. The distance to the hospital is further analyzed by assessing the percentage of households with travel distance more than 5.00km and less than 5.00m. It is found that for 99% of households has hospital facility within 5.00km distance and only 1.0% have to travel more than 5.00km for hospital facility.



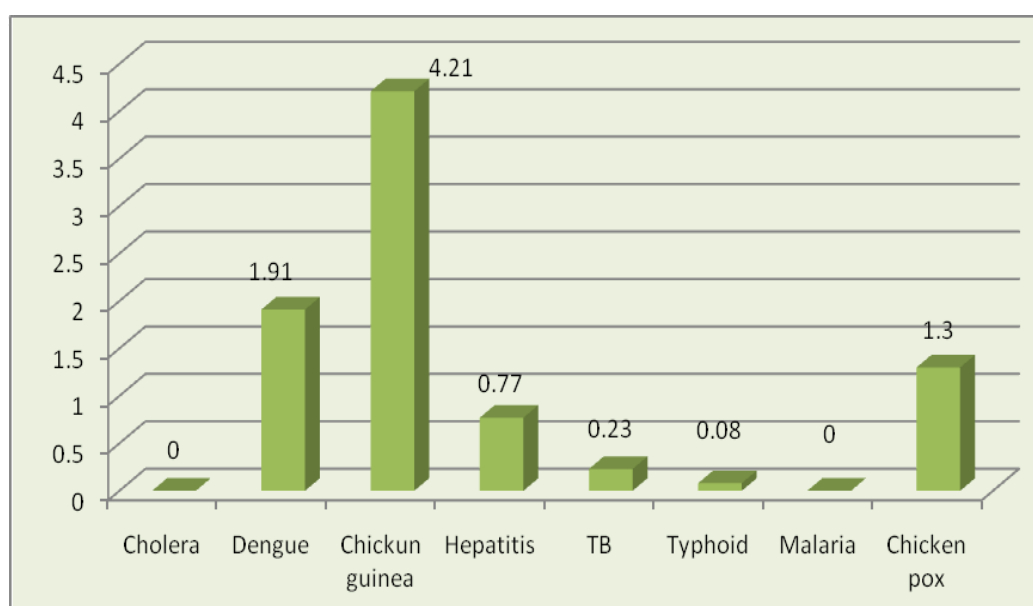
## 17.4 MAJOR DISEASES ( 2016)

Major diseases reported in the primary health centre and its number is shown in Table 17.2. (The numbers given in the table includes patients from the surrounding area of the town also). Acute Diarrheal diseases, Measles, Acute Respiratory Infection, Pneumonia, Typhoid, Hepatitis, Leptospirosis, and T.B are the diseases reported. Acute Diarrheal diseases is the major disease showing the intensity of unhygienic condition in the area.

**Table 17.2 Major diseases**

Acute Diarrheal diseases	360
Measles	2
Chicken pox	6
Pneumonia	0
Typhoid	0
Hepatitis A	3
Malaria	2
T.B	6
Dengue fever	2

Source: Primary Health Centre (2016)



**Figure 17.3 Percentage of houses diagnosed with diseases within last 5 years**

In the Socio Economic Survey conducted in the year 2016 details regarding major diseases occurred in the town during the past five years have been collected. Major diseases occurred and percentage of Houses diagnosed with diseases is shown in Figure 17.3. Chickunguinea was reported as the major

disease of the town during the last five years, which is spread through mosquitoes. Dengue fever is also spread by mosquitoes which shows the necessity of eliminating water logging areas there by breeding of mosquitoes and the spread of diseases can be eliminated.

## **17.5 CONCLUSION**

*Primary Health centre lacks essential facilities like canteen, comfort station etc and the Dialysis unit installed here also not operating in the absence of Nephrology doctor and the technician. Higher order medical facilities are to be established in government sector. The private health care sector has outgrown the public health care sector and private expenditure on health care has increased, particularly in the past few decades. The implications of this situation for disease control and improvement of the health status of the population are not yet clear. While it is obvious that the private sector has to be controlled and regulated more effectively, regulations should not choke and discourage private sector growth. As of now, no projects are undergoing or committed under health sector. The permissive regulatory environment, non-registration of medical institutions and lack of guidelines on treatment and case reporting do not have much scope for improving the efficiency of the private health care sector. This is the paradox and challenge that Kerala faces now.*

# 18. RECREATIONAL FACILITIES AND CULTURE

## 18.1 INTRODUCTION

Recreation is an essential part of human life and finds many different forms which are shaped naturally by individual interests but also by the surrounding social construction. Public space such as Parks and beaches are essential venues for many recreational activities. Tourism has recognized that many visitors are specifically attracted by recreational offerings. In support of recreational activities government has taken an important role in their creation, maintenance and organization. Recreation-related business is an important factor in the economy.

## 18.2 PARKS AND OPEN SPACES

Presently there is no major Parks in Erattupetta town. Location for a children's park was identified on the bank of Meenachil River, opposite to the Aruvithura church but it was not came to ground. Also discussions were made about the construction of a mini park on the bank of Thekkanar but further proceedings were not taken.

## 18.3 STADIUM AND GROUNDS

Erattupetta Municipality is not having stadiums and grounds. The available grounds are private. One of the biggest stadiums in the district is located in the municipality which is named St. George stadium owned by Aruvithura St. George church. Another private ground is located at the Thodupuzha road side near the municipal boundary.



#### 18.4 TOWN HALL, AUDITORIUMS

Erattupetta municipality does not have any town hall and auditorium. 5 auditoriums under the ownership of different institutions are available for conducting different functions and other institutional purposes. Mainly these private auditoriums are fulfilling the requirement of public gatherings in Erattupetta Town.



#### 18.5 THEATRES

There are two cinema Theatres namely Metro and Surya are functioning in Erattupetta Town. These two theatres are catering the needs of large population of town and surrounding area.



#### 18.6 RELIGION, CULTURE

The number of religious institutions in Erattupetta municipal area is very high. Town has a mixed population of Christians, Hindus and Muslims living together. There are about 56 religious institutions in 7.50 Sq.Km area of Erattupetta Town. There are 53 mosques, 2 temples and only one church are functioning in Erattupetta Town. Famous Aruvithura Church (Aruvithura Palli) is a Syro-Malabar Catholic church located at Erattupetta. This is the first church in the Palai diocese and was built in the 1st century. All these religious institutions



have their own festivals and related cultural activities. Fine Arts Club Erattupetta (FACE) is the famous Arts and Cultural Society in Erattupetta.

Puthenpalli Juma Masjid is a famous mosque located at Erattupetta. Puthuppally is also a famous pilgrim centre near by Puthenpalli Juma Masjid.

Believed to be one of the seven churches established by St. Thomas, St. George's Forane Church at Aruvithura, popularly known as Aruvithura Church is one of the churches in Kerala which collects the largest amount of monetary offerings during the festival days. The annual feast of St. George is celebrated from 22nd to 24th of April.



Vallyachan Mala is a catholic pilgrim hill station located near Erattupetta. The main attraction is the presence of a 170 feet height kurishu, made in concrete. This is considered to be the highest cross in Asia. Vallyachan Mala is managed by St George Forane Church, Aruvithura. Name of this mountain (Vallyachan in Malayalam) is dedicated to St. George apostolate of Jesus Christ. Vallyachan Mala attracts devotees by the presence of golgotha mountain, cemetery of Jesus Christ, churches, resting places, divine centres, gadsden garden, kurishinte vazhi and jacobs well.



### 18.7 PUBLIC LIBRARIES AND READING ROOMS

There are 2 libraries/ reading rooms in Erattupetta Town. Municipal Library and P.S.B Library are the two libraries of the town. These libraries are very old



and not functioning properly. Therefore modernization of these libraries or introduction a new library is essential.

### **18.8 CONCLUSION**

*Erattupetta is having natural beauty with Rivers passing through the middle of the municipal area. But the beauty of land is not fully utilized for recreational purpose. The existing facilities are not enough for future generation. The beautification work of river and their surrounding will enhance the tourism sector also. No recreational facilities available in the town. The recreational facility in the town has to be improved considering the people of the town and its influence area. A stadium for sports, open ground and a town hall for conducting different cultural activities and fairs are also needed. Small grounds at neighborhood level are also needed. A cultural centre is also needed in the town. The provision of more open spaces for common gathering will uplift the healthy living and environmental condition.*

## 19. ENVIRONMENT

### 19.1 INTRODUCTION

Environmental protection is a practice of protecting the environment, on individual, organizational or governmental level, for the benefit of the natural environment and human. Due to the pressure of population and our technology the biophysical environment is being degraded, sometimes permanently. This has been recognized and government began placing restraints on activities that caused environmental degradation.

The unmanageable increase in population has placed a tremendous burden on natural resources. This has resulted in shortage of food and due to excessive farming, use of chemicals and pesticides and excessive use of ground water, the natural resources have affected. Water resources are badly polluted and emission of toxic fumes from industry and vehicles has deprived us of clean air. Industrialization and a growing consumer economy have led to the problem of indisposed garbage and uncontrolled sewage.

Localized environmental health problems such as inadequate house hold water and sanitation and indoor air pollution, Town level environmental problems such as air pollution, noise pollution, inadequate waste management and pollution of water bodies, degradation of natural areas and infrastructure deficit are major factors affecting our urban areas. Environmental problems specifically affecting Erattupetta Town is discussed in this chapter.

### 19.2 MUNICIPAL SOLID WASTE

There are no proper arrangements for the collection, conveyance and disposal of solid waste at Erattupetta municipality. Collection, conveyance and disposal of solid waste of the town are not doing in an organized manner. Presently the solid wastes are dumped on the road sides and it is collected in a tractor and transported to the dumping yard. These wastes are burned at this place. The dumping yard is not properly maintained. In the monsoon season waste water will flow to the nearby plots and river. The present system

leads to the pollution of natural water bodies and other public places. But a permanent solution for disposing the solid waste has to be introduced for the pollution free environment and healthy living condition. The available dumping yard must be used with modern equipments to dispose the solid waste and convert into usable fertilizers or any other value added products.



### 19.3 INDUSTRIAL POLLUTION

No large scale industrial units are functioning in the town. Industries are categorized as Red, Orange and Green according to the nature of pollution. Red category being the highest pollution potential is not present in the Town. There is a mini industrial park at Nadakkal which is located in the residential



area. Also there are small wooden furniture making units along the road side at different locations of the town, which is making dust and noise pollution.

### 19.4 AIR POLLUTION

Air pollution is not a serious issue in Erattupetta town at present. Usually emission from industries and vehicles are the main cause for air pollution in urban area. The wooden furniture making units along the road side at different locations of the town is making air pollution.



### 19.5 NOISE POLLUTION.

There is no major industry in the town producing noise pollution. The important source of noise pollution is motor vehicles. Such pollution is experienced during day and night in two major Roads Pala –Poonjar (SH 32) and Kanjirapally –Muttom (SH-44) .Also wooden furniture making units along the road side at different locations of the town is making noise pollution

### 19.6 MEENACHIL RIVER

Meenachilriver which is the major source of drinking water for major portion of Kottayam district flows through the town. During the rainy season the river is flooded with water and sufficient quantity of water is not available during the summer season. The drainage pattern of the town and the other settlements on the bank of the river are in such way that the water is disposing into the river. In addition to that public is disposing wastes into the river. Traces of metals have been found at different locations of the river. So the pollution and non availability of water during the rainy season are the major issues to be addressed urgently.



### 19.7 PADDY FIELDS AND WET LAND

The paddy fields and wet lands, in addition to its agriculture importance, are also acting as a collection basin of rain water and in turn, recharging the ground water resources. Erattupetta presently has only a small extent of paddy field.

## **19.8 SOIL EROSION**

The municipal limit of Erattupetta has an undulating terrain with hills and low lying land and rivers in between the hills. Certain area with steep slope is also there in the town and these areas need special attention. The vegetation and green cover of these areas to be protected and other preventive measures are to be taken to prevent soil erosion.

## **19.9 DRAINAGE PATTERN**

The topography of Erattupetta town is undulating nature. Vadakkanar and Thekkanar joints to form the Meenachil River are the major water bodies and collecting run-off from the adjacent elevated areas. Only few roads have side drains. Detailed drainage plan has to be prepared for conserving the existing drain and protecting rivers from pollution after sanctioning of the plan.

## **19.10 FLOODING**

Flooding of Erattupetta town due to overflowing of Meenachil River is a common phenomenon in the earlier days in many part of the town. But now days the shortage of rain fall and increase in depth of the river due to sand mining has reduced the occurrence of flooding. The drainage facilities are not so strong enough to cater the over flow of running water. A proper storm water drainage system is essential for remedying the flood problem.

## **19.11 CONCLUSION**

*The town is experiencing various environmental issues, but in different magnitude. Priority has to be given for protection of environmentally sensitive areas, waste disposal, and protection of water bodies. Since Erattupetta is a growing town the environmental issues need to be addressed at this stage itself and planned growth of the town also has to be ensured. Measures to prevent river pollution needs immediate attention.*



## 20. SOCIAL WELFARE & SECURITY

### 20.1 INTRODUCTION

The security of the weaker section of the society i.e., children, women and aged people has been emerged as a major sector in the planning process. In the changed social structure of the society, these sections of the society need special attention.

### 20.2 WOMEN

Female population of town is 14643 the sex ratio of the town as per 2011 census is 983. Even though the literacy rate of Kottayam district is high, the literacy rate of Erattupetta is much lower. The literacy rate of male and female of the town is 84.17% and 80.99% respectively. The work participation of female (8.91%) is far below the work participation of male (54.02%). Various community development agencies are to be initiated in the social and economic upliftment of women. A total of 155 Kudumbasree units are functioning in Erattupetta Municipality with 2745 workers. Computer training, Front office management, Tailoring, ornament making, Aqua culture, catering, pickle making and vegetable cultivation are some fields in which training given for developing self employment groups.

### 20.3 CHILD DEVELOPMENT

Human being below the age of 18 is considered as Child group. For any nation children are the greatest asset. As per the socio economic survey 2016, 19.83 % male population and 19.29% of female population are in the child group. Anganawadies are the grass root level delivery



point of social welfare activities. 25 Anganawadies are functioning in the Town and out of these, 9 are functioning in own buildings, 14 are functioning in rented building. For wards 8, 15 and 28, no Anganawadies are existing. New buildings are to be constructed for those Anganawadies functioning in rental buildings. Also the standard of facilities of Anganawadies has to be improved and in almost all the units' drinking water and toilet facilities are available. Nutrition programs for pregnant ladies, feeding mothers, adolescent girls and children below 6 are implanted by Social welfare department. Awareness programs and counseling and health check up and vaccination are also implanted through Anganawadies. Sexual exploitation and physical abuse of children are alarmingly increasing in the society and Jagratha samithy with ward member as convener and Anganawady teacher as member secretary was functioning.

#### **20.4 OLD AGED PEOPLE**

The people above 60 years are considered as the old age people. As per the socio-economic survey 2016, 1.58 % of male population and 1.81 % of female population is coming under this group. At present no old age homes or other facilities required for old age people are functioning in the town. In the local level analysis major suggestion in this sector is construction of old age homes and providing necessary medical facilities for old age people.

#### **20.5 S.C, S.T DEVELOPMENT**

The Scheduled Caste population of town as per 2011 census is 227. The total number of Scheduled Tribe population in the town is only 166. Comparing to the district population, SC & ST population of Erattupetta town is very meager. In the local level analysis, the major suggestion related to this sector was for improvement of housing condition, improvement of infrastructural facilities of S.C Colonies and programs for improving the educational standards and job opportunities for them.

## 20.6 FIRE AND SAFETY

The main objective of the fire and rescue service is to protect the people and their properties from fire and other calamities, which include both natural and incidental. Department provides different services like Ambulance service, removing road blocks, saving victims from accidents etc.



Office of the fire and rescue service is currently functioning at Aruvithura near the causeway road in a rented building.

## 20.7 POLICE STATION

There is a Police station functioning in Erattupetta town located at Vadakkekara and it consist of office buildings and quarters in government land for safeguarding the citizens and offer law and order in the town. About 51 officials are working in this office for doing the security and safe guarding works. A Traffic Unit is also functioning in Erattupetta for controlling and guiding the traffic and



transportation network for free flow of vehicles in all direction.

## 20.8 POST OFFICE

There are three post offices located in Erattupetta Municipality. Main Post office is located at Vadakkekara in its own land, second one at Aruvithara in a rented building and the third one at Nadakkal in a rented building. BSNL office is located near main post office and it is serving the whole Erattupetta Municipality.

**20.9 CONCLUSION**

*For the welfare of weaker section of the town more attention is needed. There are number of programmes for the welfare of the society and these programmes are to be implemented more effectively. Work participation rate of women is very low and programmes for creating employment for the women are to be improved and ensured the economic upliftment. As the number of senior citizens is rapidly increasing and with the emergence of nuclear families more attention is needed for the welfare of Old age people. More projects have to be evolved for the economic development of women, Scheduled Caste and Scheduled Tribe people.*

## 21. RESOURCES

### 21.1 INTRODUCTION

Money, manpower and land are the main resources for planning and development of urban centers. Among these resources land is limited and its availability differs from place to place. As a basic principle, allocation of these resources among various competing land use must be such that it helps in achieving a high level of economic efficiency.

### 21.2 FISCAL RESOURCES

The main source of income of Erattupetta Municipality is municipal taxes, fees for various services, income from properties, government grant (plan fund), deposits and cess. The total receipts for the financial year 2012-2013 was Rs. 2,03,30,938/-. But only a small share of the total income is available for capital improvement programme and it is inadequate to provide infrastructural facilities and services in par with demand.

In addition to the above, various programmes including infrastructure development projects are being implemented through various State Government Departments and also under various centrally sponsored schemes. Procuring funds for implementation of urban development plans and services delivery system from alternate sources shall be thought of.

### 21.3 HUMAN RESOURCES

The details of human resources have already been discussed in the chapter 5. Steps are to be taken for the effective utilization of the human resources for the development of local economy and in the provision of infrastructure and services.

### 21.4 LAND

Urban land is emerging as a new area for local resources generation. There already exist innovative examples of generation of substantial funds using urban land as a resource in many parts of the country. No steps in this direction have been adopted in Erattupetta, even though there is enough potential for utilizing land as a major resource.



### **21.5 MINERAL RESOURCES**

Hardly any mineral resources are available in Erattupetta Municipal town limit. But in the influence area of the town there is enough deposit of granite.

### **21.6 AGRICULTURE RESOURCES**

Natural rubber is the major agriculture product of the town. As far as the region is concerned, only Agro-based products are available. Rubber is the major crop in the region.

### **21.7 CONCLUSION**

*Still conventional method of resource mobilization is adopted in the Town. Human resources which are available in plenty have to be utilized properly. The land resources can also be used more effectively. The major resource of the area is agro based. Innovative approaches have to be adopted for resource mobilization and to provide better services to the people.*

## **22. DEVELOPMENT ADMINISTRATION & MUNICIPAL FINANCE**

### **22.1 INTRODUCTION**

The role of different departments involved in the development activities of Erattupetta Municipality is discussed in this chapter. The municipality has major role in the development activity of the town. In addition to the Municipality, Public Works Department, Kerala Water Authority, Kerala State Electricity Board, Agriculture Department etc are the major departments involved in the development activities. According to the Kerala Municipal Act, 1994, the Municipal Corporation/local self-government is responsible for;

#### **Civic service delivery that consists of**

- Preparing and implementing a water supply and sewage disposal scheme
- Providing adequate sanitation through solid waste collection and disposal (including biomedical and hazardous waste), low cost sanitation and surface drainage
- Providing street lighting facilities
- Constructing and maintaining roads
- Providing facilities for public conveniences

#### **Administrative services that consist of**

- Issuing various certificates
- Maintaining public amenities
- Maintaining public utility services
- Providing ambulance services

#### **Regulatory services that consist of**

- Issuing licenses and permits
- Registering births, deaths, marriages, and private hospitals and tutorials
- Issuing notices and other certificates for taxation purposes
- Maintaining records and registers of all municipal transactions
- Abating nuisances

#### **Transferred services that consist of undertaking**

- Maintenance and operations of health and educational institutions

- Economic development in the LSGI jurisdiction
- Social welfare programs
- Social security schemes

State-level Departments, Programs and Missions and Institutions also govern urban management and basic service delivery in the State's urban local bodies.

## 22.2 ERATTUPETTA MUNICIPALITY

### 22.2.1 Introduction

The historical adoption of 74<sup>th</sup> Constitutional Amendment Act by the Central Government in 1992 has paved the ways and means for independent functioning of local bodies. This act makes election to the urban local Government's mandatory, in addition to greater devolution of administrative and financial powers.



*Municipal Office, Erattupetta*

### 22.2.2 The Elected Council

The elected council consists of 28 members, which includes 14 women members. The Chairman who is the head of the council has been elected from the elected members of the council. The Vice-chairperson, to assist the chairman and also to discharge the duties of chairman in absence is also elected by the members of the municipal council. There are six standing committees, ie, for finance, works, development, health, education, welfare and education arts sports & culture to assist the municipal council in respective fields. Each Standing committee consists of four members except finance committee where there are five members. The vice-chairperson is the chairman of the finance standing committee and the members of the council will elect the chairpersons of other standing committees.

### 22.2.3 Administrative Structure of the Municipality

The municipal secretary is the executive head of the Municipality and he is supported by the following six sections of staff.

- i. General Administration section
- ii. Revenue section
- iii. Engineering section
- iv. Public health section and
- v. Peoples planning section and
- vi. Accounts and Auditing.

**General Administration section**

The General Administration section is headed by the Junior Superintendent and consists of three sub-divisions i.e. Establishment, accounts and other general matters.

**Revenue Section**

Revenue section is headed by the Revenue Officer. The section deals with the revenue of the Municipality.

**Engineering section**

The Engineering section is headed by Municipal Engineer in the cadre of Assistant Executive Engineer and is assisted by Assistant Engineer and Public works overseers. This section is responsible for the project planning, execution and maintenance of basic services and other infrastructure within the town. This section looks after the implementation of the development plans and other town planning schemes, approval of building plan and lay out plans, detection of unauthorized construction, eviction of encroachments etc.

**Public Health section**

This section is headed by the public health officer Grade. I. This section attends works like collection and disposal of solid wastes, cleaning of drains and work related to public health, mother and child care, C.D.S works etc.

**People's Planning section**

This section co-ordinates the plan formation under decentralized planning process. Annual plans and five year plans for the municipality are being prepared under decentralized planning process.

**22.2.4 Functions of the Municipal Council**

Erattupetta Municipality is the major agency implementing development works in Erattupetta. The development works under the responsibility of Erattupetta Municipal Council include, the construction of Municipal roads

and their maintenance, Public health - Primary health centre, Community health centre, Solid waste disposal, Construction of public market and their maintenance, Public cremation ground and its construction procedures, Open spaces, parks and their construction works, Providing infrastructure in slums, Protection of common ponds, The maintenance of the institutions transferred to the Municipal Council such as Schools, Hospitals and other institutions

## 22.3 MUNICIPAL FINANCE

### 22.3.1 Introduction

The 74<sup>th</sup> Constitution Amendment Act 1992 paved the way for devolution of financial and administrative powers to urban local bodies in a large way. By this amendment the financial position of the urban local bodies improved and a sizeable share of the total plan fund of the state Government has devolved to the local bodies for plan implementation. The financial position of the municipality is discussed in the subsequent paragraphs.

### 22.3.2 Receipts of Municipality

The receipts of the municipality have been grouped into, three categories i.e. Revenue, Capital and debt. The receipts under **revenue** include income from taxes, income from other laws, income from the municipal properties, municipal fees,

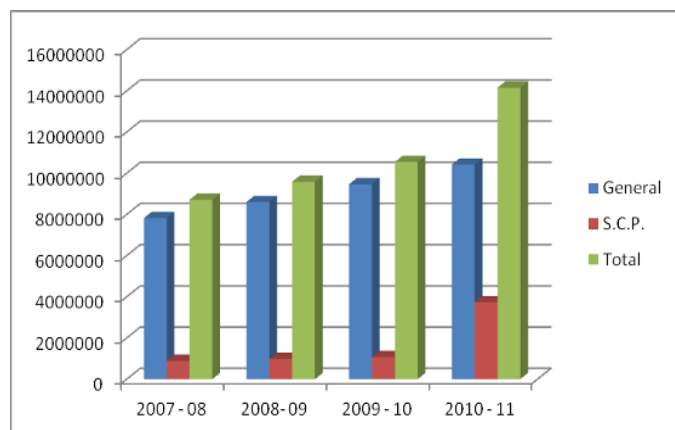


Figure 22.1 Receipts of the Municipality from 2007-08

grant in aid from Government, Grand in aid from Government for the maintenance of assets transferred from Government etc. The receipts under **capital** includes Government Grants, government loans, income from municipal institutions, income from deposits, endowment Grant for implementing the programmes of the departments transferred to the municipality, Government Grant for decentralized planning etc. The receipts under **debt** include deposits, provident fund, pension fund, return from



advances, sinking funds, library cess, surcharges, sale tax, income tax, labour welfare fund etc. The Table 22.1 and Figure 22.1 present an abstract of total receipts from the financial year 2007-08 onwards. It shows the steady increase in revenue from general and S.C.P funds

**Table 22.1 Abstract of Municipal Income**

Sl.No	Item	2007 - 08	2008 - 09	2009 - 10	2010 - 11	2011 - 12
1	General	30,00,272	34,29,762	37,09,116	32,75,540	31,74,549
2	S.C.P.	19,26,653	30,06,737	38,21,839	62,72,577	57,07,941
3	Total	49,26,905	64,36,499	75,30,955	95,48,117	88,82,490

Source: Municipal Office, Erattupetta

### 22.3.3 Expenditure of the Municipality

Like the receipts, the expenditure of the Municipality is also classified into three accounts revenue account, capital account and debts account. The expenditure under revenue account includes the expenditure for administration and tax collection, public works, town planning, education, water supply and drainage, public health, street light, maintenance of municipal properties, Grant for maintenance of transferred assets etc.

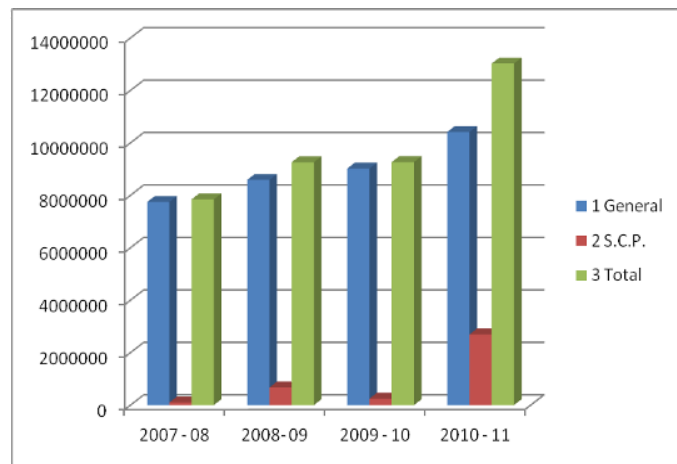


Figure 22.2 Expenditure of the Municipality from 2007-08

### 22.4 GOOD GOVERNANCE

The office building now available for Erattupetta Municipality does not have sufficient space for efficient functioning. A new building complex with modern facilities considering the next 50 years demand is required. The computerization of the Municipal office with network facilities has not been completed. Collection of taxes and other revenues, issue of certificates, accounting etc are computerized. A Janasevanakendram is also functioning at the Municipal Office for providing various services to the people. The front office is also functioning in the Municipal office.

## **22.5 OTHER DEPARTMENTS**

Kerala Water Authority is dealing the distribution of drinking water in Municipal area. Office of the Assistant Engineer is functioning at Erattupetta. The Electricity distribution system is maintained by the Kerala State Electricity Board. The Electrical major section and sub-division are functioning in the municipal limit. The Kerala State Public Works Department (Roads) is in charge of construction and maintenance of roads other than those roads owned by the Municipal Council. The Kerala State Public Works Department (Buildings) is constructing major buildings. Assistant Education Office, Sub Treasury Office and Excise Office are also functioning in municipal area.

## **22.6 PUBLIC OFFICES FUNCTIONING IN THE TOWN**

Block Panchayath Office and Village Office are functioning in Erattupetta Town. Nearly half of the other Government offices are functioning in rented building.

## **22.7 CONCLUSION**

*Erattupetta municipality has major role in providing various infrastructure facilities and civic amenities to the people. It is a third grade municipality and the present staff pattern is inadequate considering the responsibilities, powers and assets transferred to the Municipality. The total receipt of the Municipality is showing an increasing trend but it is inadequate to meet the demands. Most of all department offices are functioning in municipal area and nearly half of them are functioning in rented building and a new mini civil station is needed for those offices which are functioning in rented building. More reforms are to be introduced for providing better services to the people and a co-ordination committee has to be constituted for monitoring and co-ordination of various developmental activities.*

# **PART. II**

## **INTEGRATED DEVELOPMENT VISION**



## **23. FINDINGS**

### **23.1 INTRODUCTION**

The word Erattupetta is said to have been derived from the word Eraaru which means two rivers Thekkanar and Vadakkanar merges to form Meenachil River. The Erattupetta town was developed on the bank of these rivers. The town was developed as a trade centre on the bank of Meenachil River when water transport was predominant mode of transportation. On emerging Alappuzha as port importance of Erattupetta gets nullified. The extent of the town is 7.5 sq:km and the population as per 2011 census is 27905.

### **23.2 LOCATION**

Erattupetta is located in the North East quarter of Kottayam district. The geographical location of the town is between 9 degree 43 minutes to 9 degree 39 minutes North latitudes and between 76 degree 45 minutes to 76 degree 48 minutes East longitudes. Poonjar road (SH32), Kanjirappally road (SH44) and Peerumedu road (SH14) are the major roads of regional importance passing through Erattupetta

### **23.3 PHYSIOGRAPHY**

The town is located on the bank of Meenachil River and Meenachil River divides town into 3 natural zones, Thekkekara, Vadakkekara and Kizhakkekara. Generally the topography of the town is undulating at south end and all other region remains plain.

### **23.4 REGIONAL SETTINGS**

As per District Urbanisation Report, Kottayam is suggested as first order settlement of the district. Erattupetta suggested as third order settlements of the district. Primary activity (agriculture) has been identified as the activity of Erattupetta town.

### **23.5 PLANNING AREA**

The Planning Area of Master Plan for Erattupetta Town is the administrative boundary of Erattupetta municipality.

### **23.6 INFLUENCE REGION OF THE TOWN**

The Erattupetta block has been identified as the influence area of Erattupetta town. In addition to Erattupetta Municipality 7 Grama Panchayats are included in the Influence area of the town. The total area of the region is 245.28Sq: km and 120667 population as per 2011 census. Though agriculture activity is the character of the region economy of the region is mainly business oriented.

### **23.7 LAND USE**

Residential, Agriculture, Commercial, Public land uses are the major land use of the town and 53% of the total town area is coming under developed land.

Residential (42.45%) land dominates in Erattupetta town followed by Dry agriculture (38.15%) land uses. Transportation (6.38%), Public and Semi public (3.08%), water body (4.93%) and Commercial (2.68%) has significant area. Agriculture activities are concentrated in the southern and eastern part of the Municipality. The study on functional character of the town shows majority of wards have rural or semi rural character.

### **23.8 DEMOGRAPHY**

The population of town as per 2011 census is 29705. It was 16505 as per 1981 census and there after steadily increasing up to 2011. The growth rate of the town is showing an increasing trend. The population density of town as per 2011 census is 3960 persons/sq.km. And it is highest among the six urban centers of the district. The gross population density of different wards in the municipality (2011) is varying from 1415 to 10144 persons per Sq:Km.

### **23.9 OCCUPATIONAL STRUCTURE**

Work participation rate of Erattupetta Municipality is 32% as per 2011 census. The temporal variation of work participation rate shows that work



participation rate of Erattupetta is showing an increasing trend. The work participation rate of Erattupetta town is less compared to the district and other urban centers of the district and less than that of surrounding Grama panchayats. The occupational structure shows that majority of workers belong to the other workers category. There is reduction in the number of workers engaged in agriculture. The production sector and agriculture sector show a declining trend and the service sector showing an increasing trend.

### **23.10 TRADE AND COMMERCE**

Main market situated near SH -32 is under renovation. Commercial developments are mainly concentrated at town centre and along the major travel corridor sides. Commercial nodes are developed at major road intersections. Trading of rubber, rubber scrap and nutmeg are the major activities of the town. Activity of informal sector in small scale is there in the town. Sufficient number of banks is functioning in Erattupetta town.

### **23.11 INDUSTRY**

Only SSI units are functioning within town limit and there are no major industries. One industrial park at Nadakkal, Meenachil plywood, Parvin Pardha are the main industries within the town. Erattupetta being the main trade centre of spices there is potential for developing food processing and agro based industries. Non availability of land and very high population density is a hindrance to major industrial development. Agro based raw materials like rubber, coconut, coffee, pepper which can be utilized as industrial raw material.

### **23.12 HERITAGE AND TOURISM**

At present tourism sector is not playing a substantial role in the economy of Erattupetta. Being a hill land and middle region of Kerala, town is beautifully arranged with hills and valleys. Valiachan mala hillsides and Erattupetta riversides can be developed as tourism centres. Buildings/precincts of heritage importance are very limited in the town. There is limited potential for tourism within the town. But utilizing the location advantage of the town,

Erattupetta can be developed as a tourist transit center. The aesthetic appearance of the town is to be improved.

### **23.13 AGRICULTURE AND ANIMAL HUSBANDRY**

The land under agricultural purposes and workers engaged in agriculture sector are consistently decreasing. The agriculture land is converted for various development needs. More percentage of agriculture land of town is used for cultivation of cash crops and cultivation of food crops are very nominal. Even though there is high demand for meat and egg which necessitate the development of animal husbandry sector, the high residential density of the town make a hindrance. More percentage of land under agriculture use high demand for meat and egg etc provide enough opportunity to develop animal husbandry as a significant economic activity of the town.

### **23.14 HOUSING**

The town has high residential density and the average size of the plot is comparatively less and 87.83% of people have their own houses. The size of the residences are average and its structural condition also good. Better sanitary system is available but a system has to be evolved for the disposal of solid waste. The facilities are available at a reasonable distance when compare with adopted standards. No approved slums within the Municipal limit.

### **23.15 DRINKING WATER**

Undulating topography is a major hurdle in providing piped water supply. Only 20% of households getting protected water from KWA/Municipality. For 58% of the households well is the main source of water. Certain areas of the town needed special attention as there is more scarcity of water.

### **23.16 TRANSPORTATION**

The configuration of the existing road network within Erattupetta town does not reflect any regular form, although it resembles more or less like ring and radial type having radial roads connected with partial ring roads. The road inventory shows that majority of roads are with inadequate right of way and carriage way width. The most important aspect of traffic and transportation

problem of Erattupetta town is the congested central core with limited scope for road widening. Hence, emphasis has been given to develop alternative linkages so as to divert the traffic passing through the CBD area. This would also help to reduce the unwanted inter-mix of intra-city and inter-city traffic on urban roads within the central part of the town. The pedestrian, parking and terminal facilities need to be improved.

### **23.17 ENERGY**

Electric power to Erattupetta subdivision is distributed from Erattupetta 110 KV Sub-Station located at Erattupetta- Thalappalam road. More percentage of electric power (in terms of connection and consumption) is used for domestic purpose. 7 mega watt electric power can be generated from the proposed Marmala Hydro electric project which is expected to be completed by 2020.

### **23.18 EDUCATION**

Erattupetta town is provided with 13 schools and lacks higher educational institution and more institutions are to be established. The town has low literacy rate and Educational standard. The facilities of many government schools are not fully utilized.

### **23.19 HEALTH**

The Primary Health centre Erattupetta is the only Medical Institution in the town in Govt. sector with no infrastructure facilities. Hospitals in private sector with almost all facilities provide necessary medical aid to the residents as well as people from the neighboring local bodies. More concentration is needed on public health and Primary Health centre needs up gradation.

### **23.20 RECREATIONAL AND CIVIC AMENITIES**

Only lower order recreational facilities are available in the town. Being a transit point of many tourism areas regional centre the recreational facility in the town has to be improved considering the people of the town and its influence area. The provision of more open spaces for common gathering will uplift the healthy living and environmental condition.

**23.21 ENVIRONMENT**

As density of population is very high and the major commercial activities about the Meenachil River flowing through the core area of town, environmental degradation of the town is highly noted. River banks are highly contaminated with the urban waste of the town thereby polluting the potable water. Proper intervention is needed in the sector. As the number of industries are limited air pollution and sound pollution is less in the town. The protection of Meenachil River which is the major source of drinking water of the district need special attention.

**23.22 RESOURCES**

Still conventional method of resource mobilization is adopted in the municipality. Human resources which is available in plenty has to be utilized properly. The land resources can also be used more effectively. The major resource of the area is agro based.

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## 24. DEVELOPMENT GOALS & OBJECTIVES

### 24.1 INTRODUCTION

This Chapter describes the future direction, or vision, that the Erattupetta town should follow as a result of the Master Plan. These vision principles described as goals is the general target to be reached through completing a series of tasks. These tasks named as objectives are designed to meet the goal.

The development goals are formulated from the observations and findings derived from the analysis of the sectors. The Development Plan Goals will drive development alternatives and serve as the ultimate criteria for the selection of the preferred development option and other major decisions throughout the plan process. The goals of a plan not only direct the focus of the actual plan preparation, they are also the basis for regulation changes, for capital improvements program funding, and for future planning priorities. The goal of new Master Plan is to provide a comprehensive framework for physical Master Planning within the Municipal area.

### 24.2 DEVELOPMENT GOALS

The analysis shows that Erattupetta was developed as a small service town. Pala-Thodupuzha state Highway corridor traversing Erattupetta town exhibits spatial concentration of secondary and tertiary activities in the town centre and acts as a major generator of economic momentum. The major corridors connecting Erattupetta to Poonjar, Kanjirappally and Vagamon are the other developing areas. The proximity to Tourist centres like Vagamon, Elaveezhaponchira, Bharananganam church, Sabarimala etc, the major Tourism hubs of the region, can develop Erattupetta as the satellite service centres for these areas. The lack of Physical infra-structure facilities is the major drawback in the town area. To develop Erattupetta as a **service contributor the major emphasis must be given to the development of infrastructure facilities for a healthy living condition ensuring richer and happier life to the people. To make the city green, secure, hygienic** and



elegant for living. Provision of better transportation facilities, drinking water, solid waste disposal, etc. can enhance the development of the area.

The population density in the area is very much higher and the lateral Development of housing makes land as a scarce resource in the area. The abundance in human resource can be tapped properly for the economic generation purposes. The provision of accommodation facilities to the tourists can increase the economic generation of the town. New infrastructural facilities and economic background leads to better living conditions and change in mind set and it necessitates the creation of high rise buildings. Available land can be conserved for other economic generation purposes. The optimum utilization of the available potential can promote the economic growth of the area. Trade and commerce has been identified as the notable economic activities of the town. The hinter land of the town has agriculture resources especially cash crops. There is scope for developing agro based industries in the planning area. Tourism especially pilgrim tourism has developed as a major economic activity of the town due to its location, adjacent to the major tourist destination of the state like Bharananganam and on the way to pilgrim centers like Sabarimala. **Optimum utilization of resources for diversification and strengthening the economy of the town is the second goal.**

Conservation of geography, hydrology and biodiversity are crucial for the sustenance of our ecological balance. Issues like solid waste disposal, air and water pollution, encroachment of public property mainly in river areas have to be considered and proper measures has to be adopted for the protection of our environment. Environmental protection is another urgent need of the town. The town is located in the mid land region of the state. The natural drains and river, hills etc are the environmentally sensitive areas of the planning area. So the **conservation of environmentally sensitive area is another goal.**

***The major development goals are,***

- To Develop Erattupetta as a major Service contributor of regional importance.
- Ensure healthy living condition with the provision of excellent integrated infrastructure facilities
- Optimum utilization of resources and potentials for strengthening the economic growth of the town.
- Conservation of environmentally important areas.

### 24.3 DEVELOPMENT OBJECTIVES

The Development Plan objectives represent policy and planning guidelines for identifying and evaluating the development alternatives by more clearly defining the future needs of various sectors and maintaining focus throughout the planning effort.

The Optimum utilization of potentials and resources creates new economic base for Erattupetta. This will ultimately improve the quality of life of the people. Development based on available potentials and resources is the action towards archiving the development goal. The development objectives for Erattupetta town are summarized below.

In connection with the first goal ***develop Erattupetta as a major Service contributor of regional importance***, the objectives set are

- To develop various higher order facilities to cater the service demands of the region
- To develop trade and commercial activities of the town
- To develop the regional road net work of the town so as to ensure better connectivity with influence areas.
- To improve the traffic and transportation facilities of central area of the town aiming at the decongestion of central area and to ensure the free flow of traffic.
- Provision of accommodation facilities, traffic and transportation, sanitation etc.
- Renovate the existing Trade and Commerce centers of Erattupetta town
- Promote the trading of selected produces specific to the region.

The second goal of ***Ensuring healthy living condition with the provision of excellent integrated infrastructure facilities*** can be achieved by planning over space and time considering resources and new technologies to achieve development

- To improve the traffic and transportation facilities in of central area of the town aiming at the decongestion of central area and to ensure the free flow of traffic.
- To ensure the clean atmosphere and environment by empowering the citizen by proper management and monitoring by the authorities. Making Erattupetta a clean city by proper solid waste management and proper drainage system.
- To decentralise the urban activities from inner core to other areas of the town.

- To improve other infrastructure facilities like drinking water, waste disposal, housing etc
- To develop Erattupetta to cater the higher order requirements regarding health and education of the people of the town and the region.
- To create more recreational facilities and open spaces for recreation and other social activities.

The third goal, **Optimum utilization of resources and potentials for strengthening the economic growth of the town** the objectives set are.

- To promote value addition products under agriculture especially cash crops.
- To promote small scale industry based on the resources of the region
- To develop tourism activities utilising existing potentials and develop Erattupetta as a tourist transit centre.
- To develop the agriculture and animal husbandry sector.
- To promote agricultural activities at local level through the introduction of model farms and awareness programme.
- To increase the economic growth by enhancing job opportunities and better socio economic environment.
- To promote industrial activities by using the available potentials.

The last but most important goal is to conserve the **environmentally important areas of the town.**

- To rejuvenate and protect all sensitive natural drains, ponds and other water bodies etc
- To conserve ecologically sensitive areas and minimize environmental pollution.
- To ensure protection of Meenachil river
- To achieve optimum use of resources for a sustainable development.
- To encourage uses and activities that are compatible with the fragile river banks and foster conservation.
- To provide opportunities for enjoyment of a quality natural experience to present and future generation.
- To identify, reduce and eliminate all forms of pollution, including air, noise, soil and water.
- To protect and improve water quality and quantity of water bodies within the town.

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## **25. DEVELOPMENT CONCEPT**

### **25.1 INTRODUCTION**

The development concepts evolved out from the development objectives formulated from the findings of sectoral analysis based on the problems and potentials existing in the area are explained in this chapter. By inducing developmental proposals, providing new infrastructure and appropriate economic activities to the proposed spatial structure a development concept is evolved out for improving the quality of life of the residents.

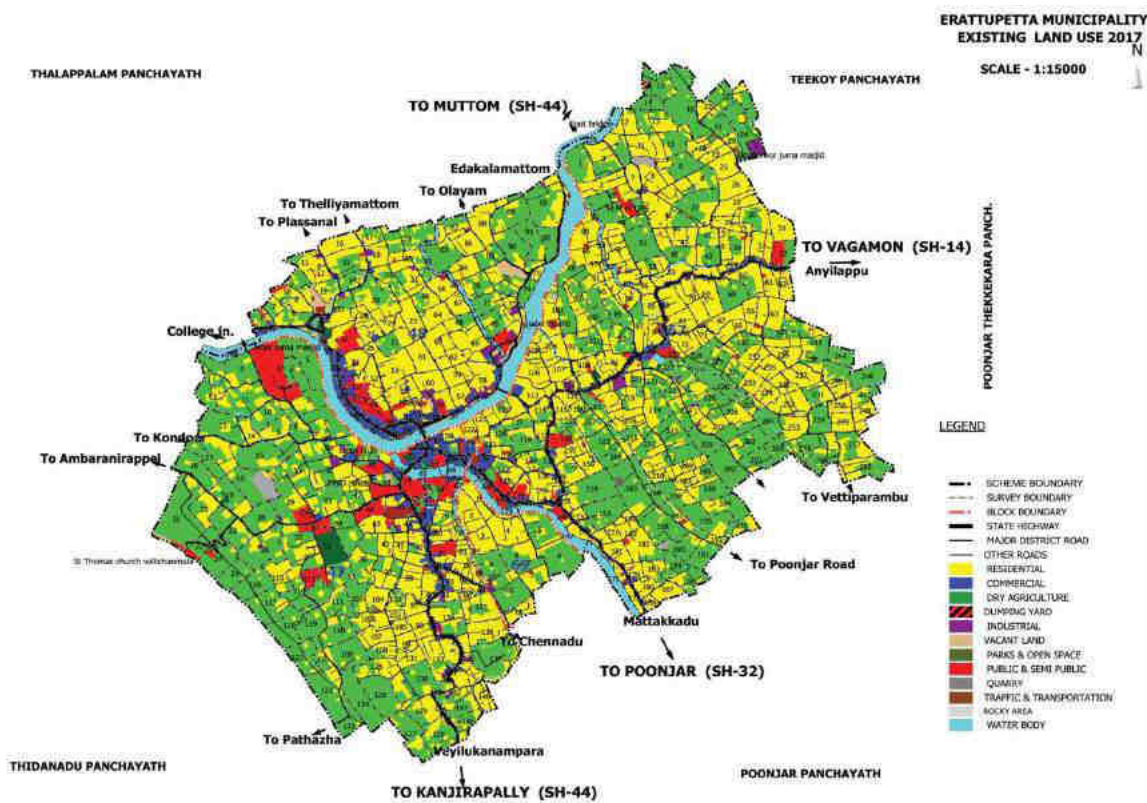
The problems and potentials existing in the area, the conclusions and recommendations of sectoral studies are also considered for the formulation of development concepts. The development concept is derived by integration of the spatial particulars of the area and the above factors. The proposed spatial structure for the area has to be evolved for formulation of the concept plan. Analysis of various sectors clearly points out the development of Erattupetta municipality as a service contributor of the town, with an aspiration to develop as the major commercial educational and tourism service centre of the district with the enhancement of infrastructure facility. The potential for development of industrial sector due to the presence of major corridors and also the trend scene in the area has to be encouraged for better economic growth.

Eco-friendly development without affecting the sensitive areas has to be considered. The development impact of other sectors must not affect the environmental perspective of the area. But the suitable change in land use has to be implemented for the developmental demand after evaluating the existing spatial structure of the Erattupetta town.

### **25.2 SPATIAL DISTRIBUTION OF EXISTING DEVELOPMENT**

The core area of Erattupetta town lies near the junction of the tributaries of the river. Like the river valley civilization in ancient period the development of trade and commerce occurred from the river valley basin of Erattupetta municipal area. May be the trade activities are promoted through water transport systems during ancient period. The central area of the town is a multi-functional zone, equally carrying all major land use activities. This leads

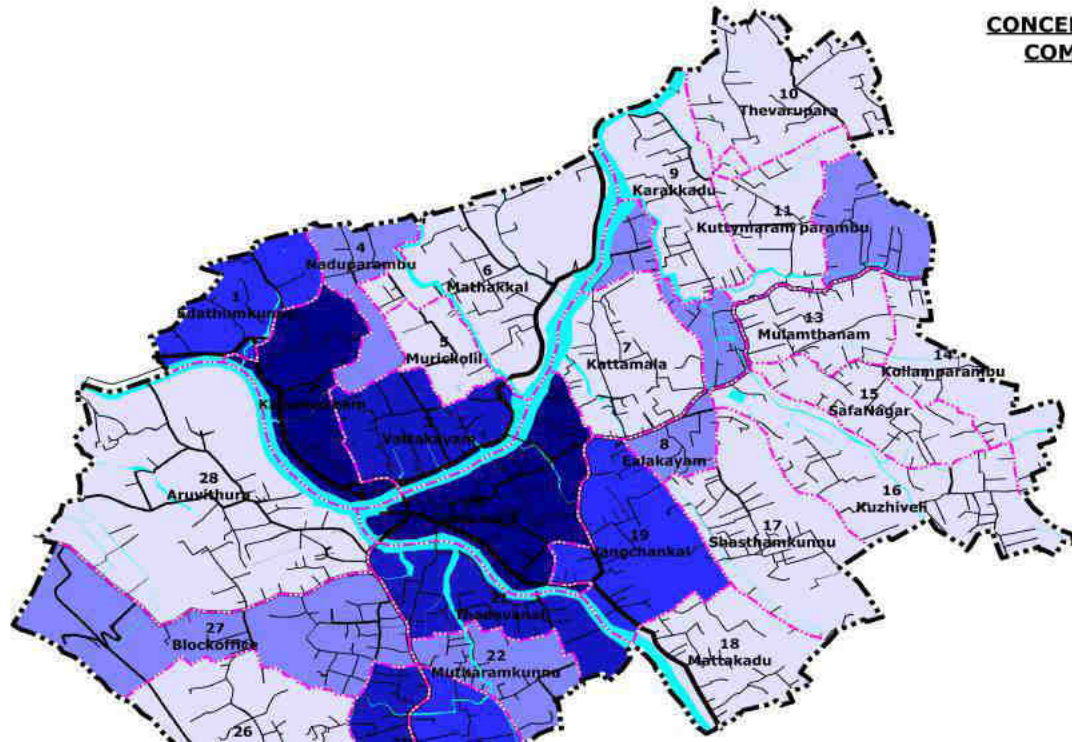
to the gathering of people for various purposes to town centre, creating more traffic congestion. Therefore the development in this area has to be regulated in a way to decongest the town centre and introduction of various infrastructure facilities. Decentralization of commercial activity in the town centre can prevent the congestion in the core area



**Figure 25.1 Existing land use map**

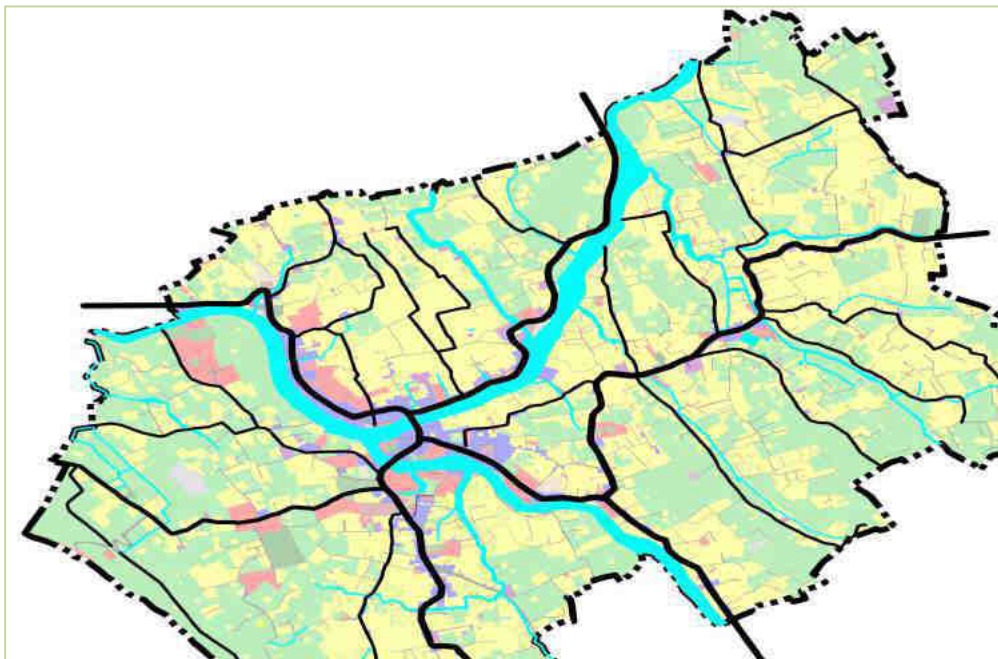
Commercial and residential activities are equally spread over the core area of the town. Demographic studies coined out that the population is more concentrated along the major road sides and it is less dense in western and south eastern part of the town. Population is increasing in municipal area rather than the neighboring local bodies which are not seen in any of the town in Kottayam. The difference in culture make people concentrate in the town itself and people are reluctant to move outside the municipal area. This will increase the population density in the core area. Their per capita income is low to build multi level buildings, thus causing horizontal growth leading to the scarcity of land for the development in the town centre.





**Figure 25.2 Commercial concentration map**

The Meenachil River and its tributaries can be considered as the most environmentally sensitive area which is in the threshold of encroachment. Even though Meenachil River is passing through the town there is only a



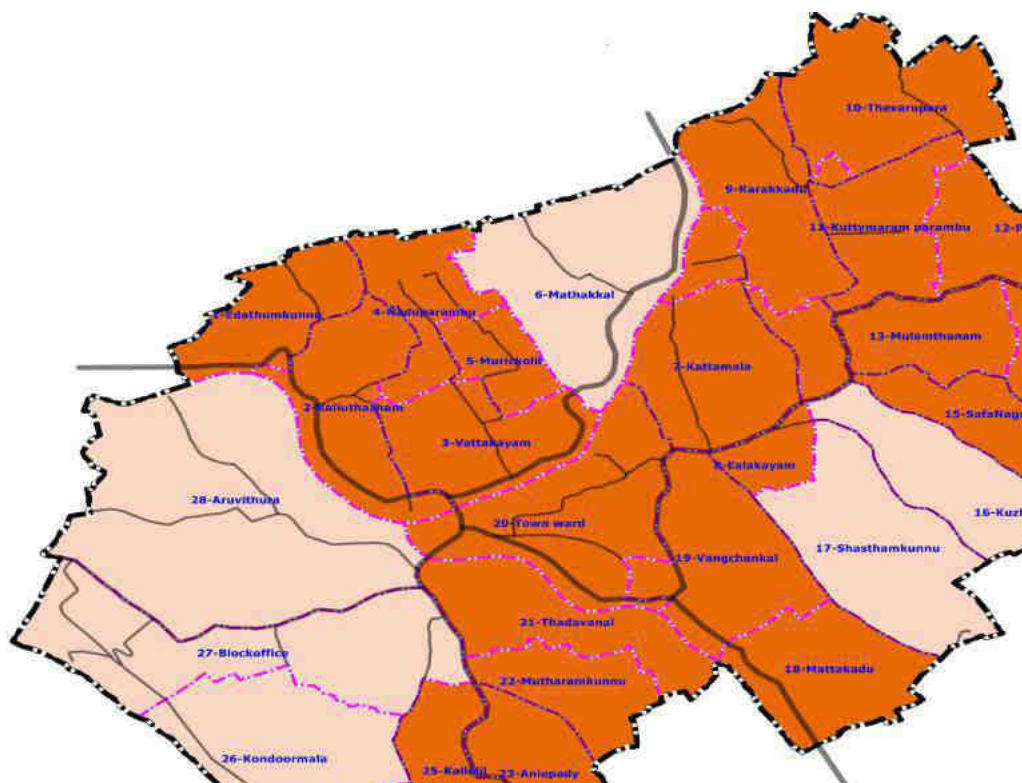
**Figure 25.3 Environmentally sensitive areas**

small patch of paddy field in the municipal area. This shows that the river valley cultivation is not seen in this area. Majority of land is used for

residential developments. But river Meenachil is flowing through a distance of 4.56 km through the town and one of the main tributaries of the river, Thekkanar also flowing through the town. Dry agricultural land use are found in the western and eastern borders of the town. The high terrain Valliachanmala lying near the town boundary , one of the major pilgrim centres in the Kottayam district is also considered as one of the major sensitive areas which are under threat of environmental pollution. The absence of breathing space or open areas reveals the difficulty for further development or undeveloped land.

**Spatial distribution of population** is seen in such a way that the densification of the area around immediate surroundings of CBD area, area adjacent to State Highways and other major roads passing through the municipal area. Dense development is not recommended in the other areas of the town where the agriculture is more predominant and land is with steep slope.

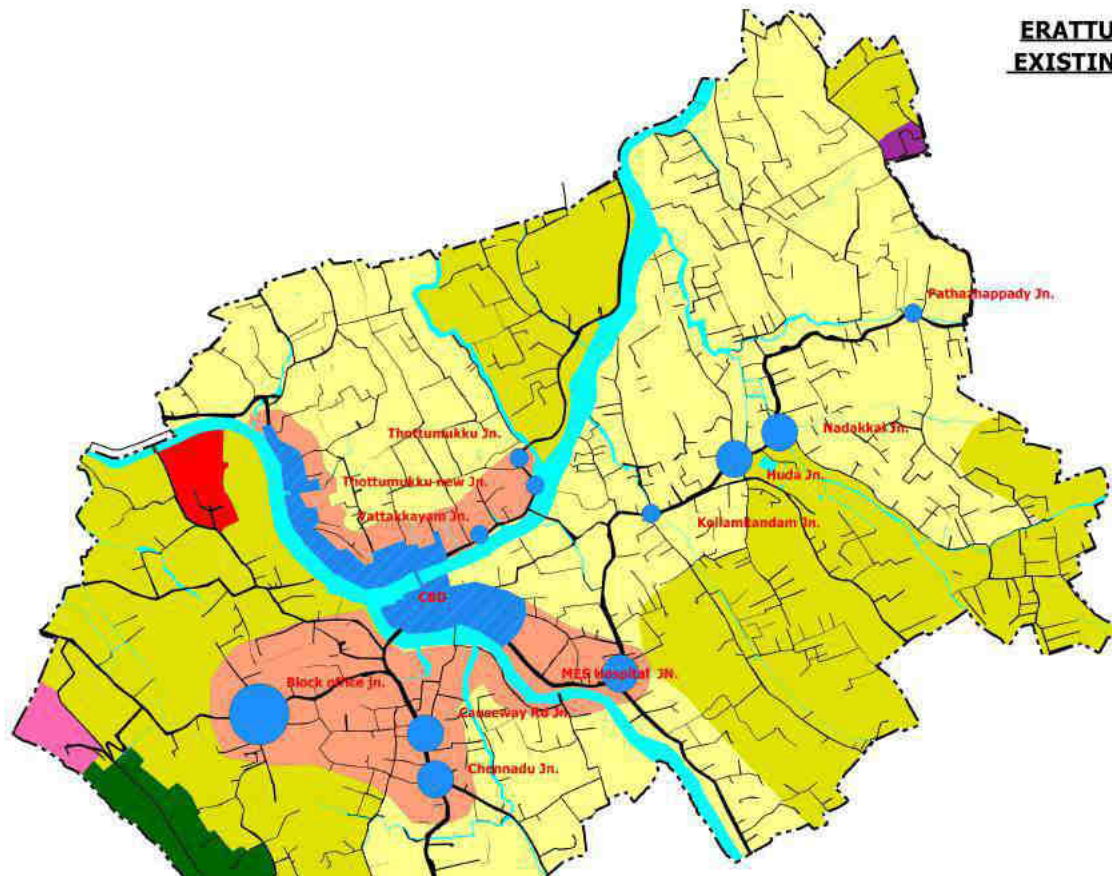
The residential and commercial areas are concentrated along the major roads and town centre. Whereas intense agricultural areas are seen away from the major road and it is concentrated along the high terrain areas.



**Figure 25.4 Spatial Distribution of Population**

Industrial land uses are concentrated on the north eastern corner. The trenching ground at Thevarupara is creating problems to the authorities. Spatial distribution of all these activities influences the development concept of Erattupetta town.

**Major Road pattern-** Road transport is the most important and only one mode of transport in Erattupetta town. It is mainly in radial pattern with small roads connecting these roads. Due to terrain variation the connection of these radial roads with major ring roads are impossible. The aspect of traffic and transportation problem is the congested central core with limited scope of road widening. Hence emphasis is given to develop alternative linkages and traffic management, so as to divert the traffic passing through the central area. This would also help to reduce the congestion caused by inter and intra city traffic within the central part of the town. The **Spatial distribution of existing development is** the haphazard development occurred due to encroachment of roads for various purposes, building constructions without following building rules etc. It is also influenced by the topographical features like undulating terrain of the town, physical barriers like rivers and canals



**Figure 25.5 Existing Spatial Structure**

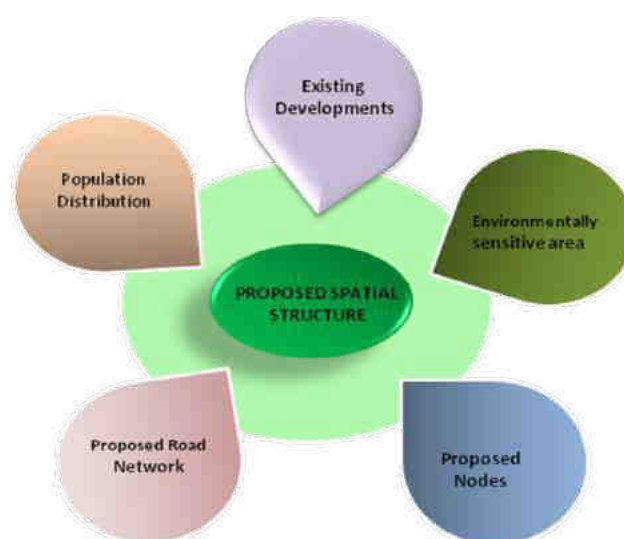


etc. The existing town centre (CBD) is located near the merging points of two rivers. Corridor development with urban activities like commercial and public land use mixed with residential development is taking place along the sides of state highways passing through the area. Commercial nodes are developed along major road intersections. Thickly populated residential areas, residential areas with homestead cultivation, agricultural land are in the remaining part of the town. Even though Agriculture land is available, residential developments are seen in between. Large pockets of agriculture land are available in the peripheral areas only. The residential developments are seen in such a manner that only horizontal developments of houses with in small plots clustered together in some areas without proper setbacks or infrastructure facilities. This affects the hygienic condition of the area. This can be improved only by changing the mindset of the residents.

The existing spatial structure of the planning area is shown in Figure 25.5. This shows that the spread of urban activity is increasing from the town centre to its peripheral areas. The land with combined residential and agriculture land use is gradually converting to residential use alone due to the need arising for residential purpose. There are no high rise buildings or apartments within the town, instead horizontal growth of buildings are found throughout the town. This is one of the reason for the shortage of land resource for public purpose.

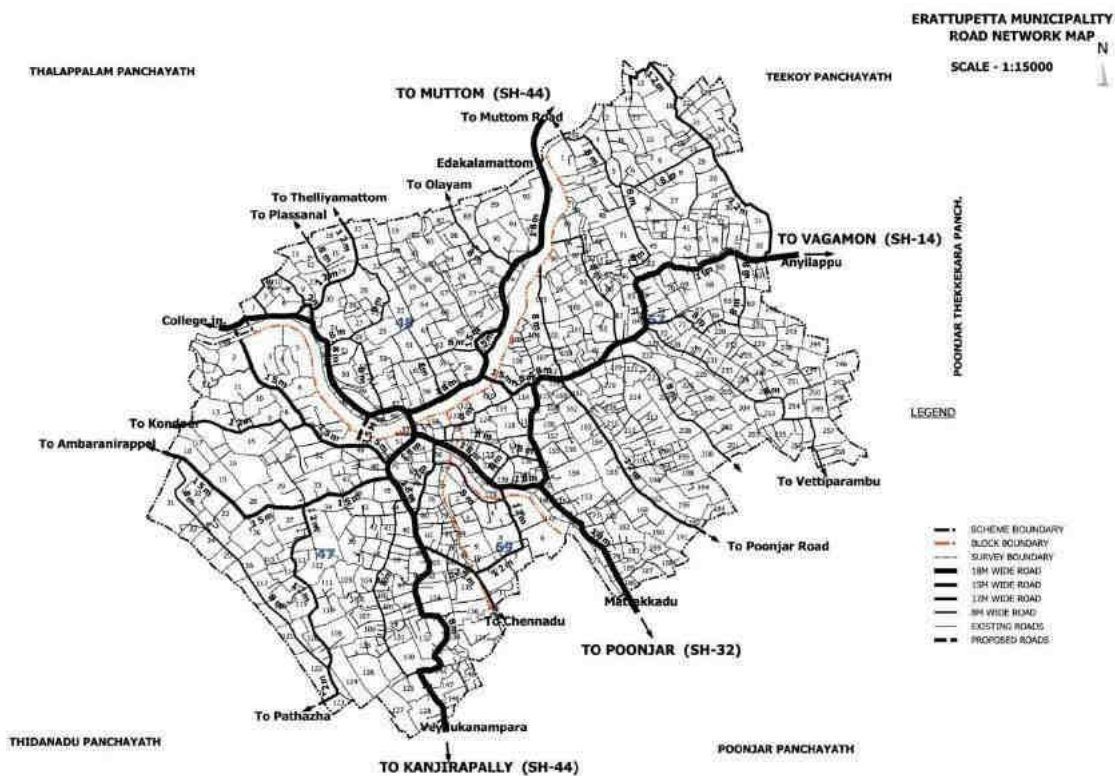
### 25.3 PROPOSED SPATIAL STRUCTURE

After evaluating existing spatial structure of Erattupetta town, the proposed spatial structure is evolved out by considering the factors like spatial distribution of existing developments, proposed population distribution, proposed road networks, proposed commercial nodes, and the environmentally sensitive areas. It is represented in Figure 25.6.



**Figure 25.6 Methodology of Proposed Spatial Structure**

**Proposed transportation network** is planned based on the study conducted by NATPAC by conducting traffic and transportation survey and the capacity required for the future requirements. The topography of the town is also a deciding factor. Existing network is radial pattern and diverging from the



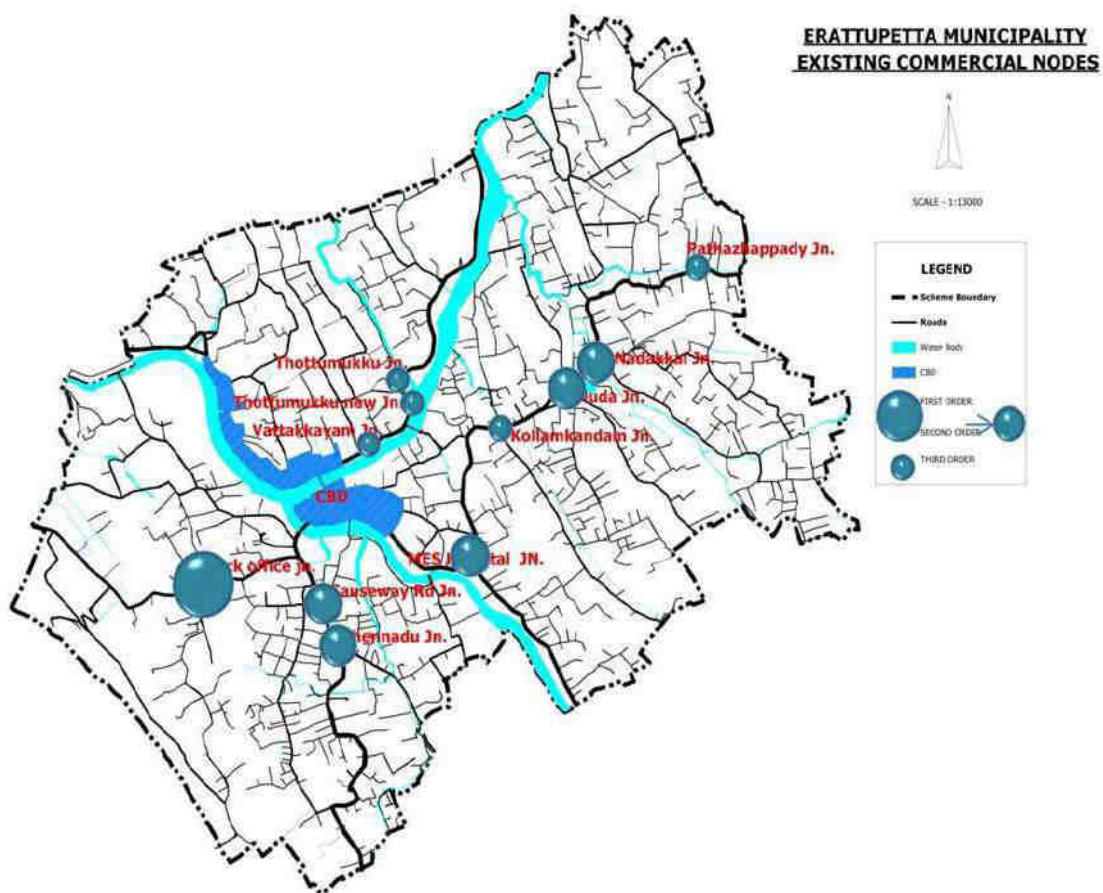
**Figure 25.7 Proposed Road Network**

central area to various directions of Erattupetta town. No major ring roads and the radial roads are connected by few roads in the category of collector road only. The density of roads as per land use study is also high. The widening of existing major roads in view of peoples aspiration and also connecting the inner road with a new bridge at the town centre is proposed for the congestion free traffic. Introduction of new bridge in the central area for connecting two roads and making a ring road can avoid the congestion in the central area by diverting the traffic from the town centre. The management of traffic movement by providing one-way traffic can also remedy the traffic problem in the Town. The Figure 25.7 shows the proposed road network. There are existing small roads to each and every corner of the town, but without proper width for easy flow of two vehicles. As per NATPAC study it is seen that the volume capacity ratio is higher at Town centres, like Ahammed Kurickal- Private Buststand, Central Jn- Ahammed Kurickal Jn, Bank Jn – Aruvithura church, Muttom Jn - Central Jn and in all other areas V/C ratio



is less than 1. Therefore in the Town centre we proposed bridge to connect both sides of the river and thus introduce smooth flow in the town centre.

Proposed **Commercial nodes** of the town are shown in Figure 25.8. In addition to the CBD area commercial nodes are proposed at different part of the town considering the future distribution of population and proposed road network. Block office junction, Nadackal junction, MES Hospital Junction etc can be considered for the development purpose of urban activities. Considering all the above factors and super laying all these indicators proposed spatial structure is evolved. Town centre (CBD area), commercial public activity dominated area, residential activity dominated area, agricultural activity dominated area, environmentally sensitive area, commercial node etc are the features of proposed spatial structure.

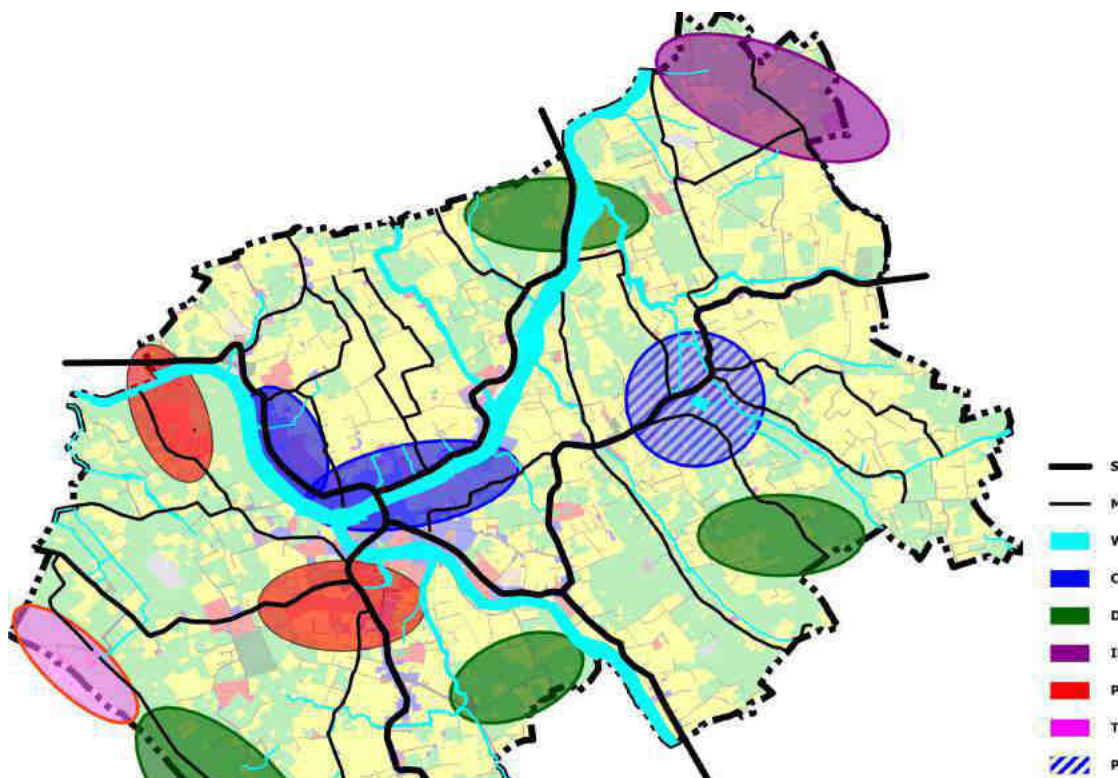


**Figure 25.8 Proposed Commercial Nodes**

## 25.4 DEVELOPMENT CONCEPT

Based on the evaluation of spatial distribution of land uses, major road pattern and spatial structure, development concept is evolved. Along with the spatial structure of the town, those factors influencing the development of the

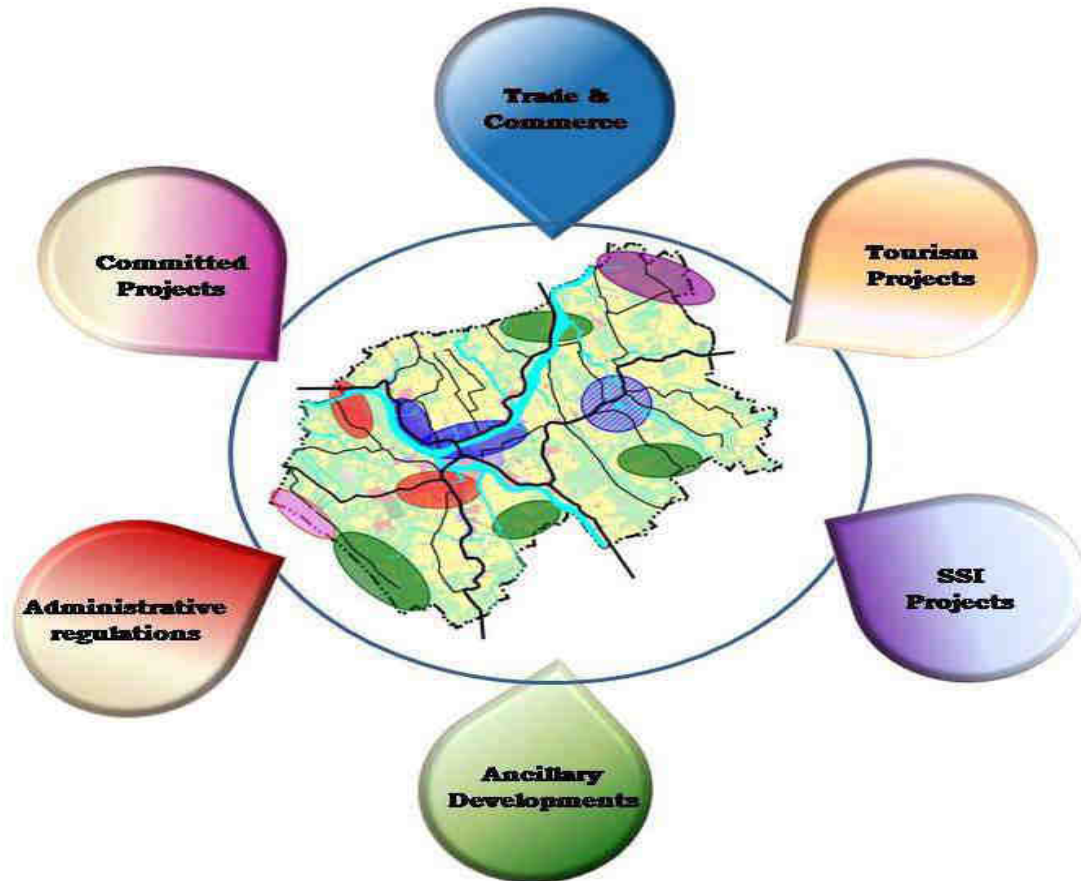
town have to be considered for the formulation of development concept. Trade and Commerce has gained major preference from ancient time and attracted many number of commercial activities within the Town area. Erattupetta is acting as a service centre for the pilgrim Tourists and also is a major trading centre for spices.



**Figure 25.9 Proposed Spatial Structure - Concept**

The various studies and analysis points out that Erattupetta municipality have potential for becoming a major service contributor of the region. The prospective for the development of the above sectors has to be utilized maximum for the economic growth of the region. Tourism is an important tool for the development on account of its potentials for generating income and

employment. The ancillary development sector like SSI sector is to be considered for finalizing development concept.



**Figure 25.10 Sectors influencing Spatial Structure**

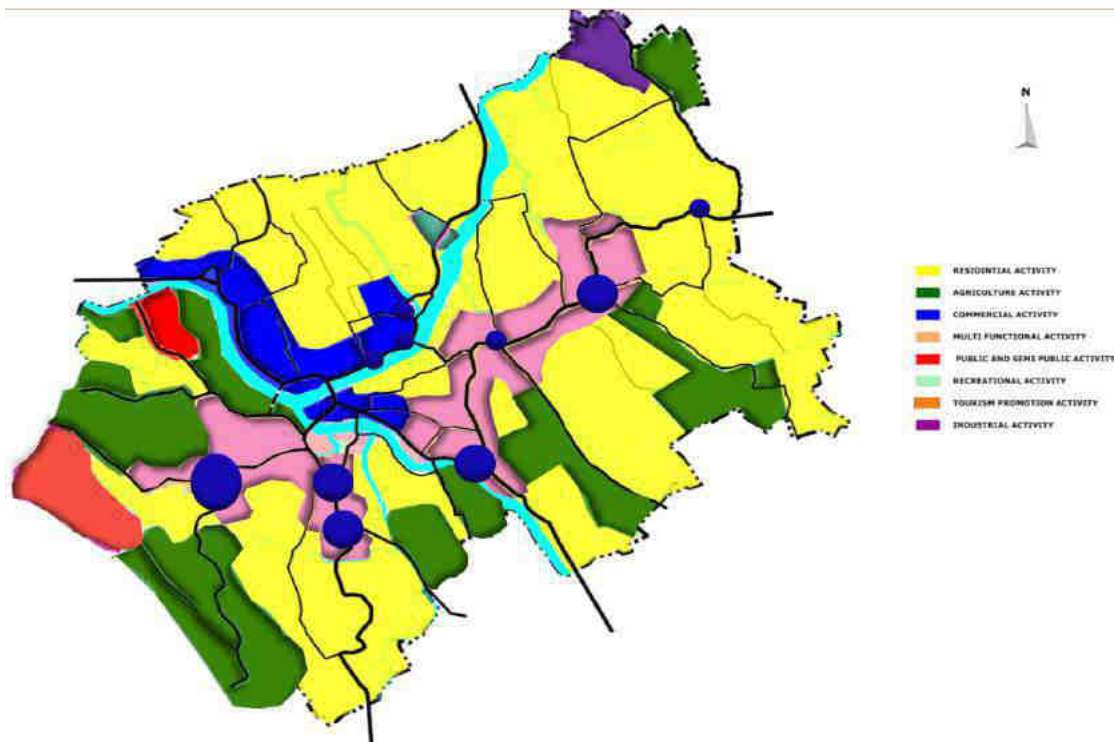
As far as Erattupetta town is considered the sectors having sigAs far as Erattupetta town is considered the sectors having significant influence in the formulation of development concept are Trade and Commerce, Committed Projects, SSI and IT, Promotion of agriculture sector and Tourism Promotion.

*Major development concept is the expansion of present town centre towards west to Block Office Junction and up to Nadackal junction towards east and towards south up to MES Hospital Junction is to decongest the town centre by decentralizing the activities in the core area.*

*Mixed activities like Commercial, Public & Semi public and residential are allowed along the major road sides for more developments First order and second order nodes shall meet the local needs with sub urban activities. Small*

scale industrial development in residential area and the shifting of other industries to industrial zone located at Thevarupara. Provision of I.T. establishments, Small Apparel parks pass area, as large area has open up for development in the mixed use zone.

Providing Tourism facilities at Valliachanmala located in the municipal area can promote pilgrim tourism by connecting neighbouring pilgrim centres like Bharananganam, Cherpunkal church, Murugan mala, Thangal para etc. Proximity to Ettumanoor temple, Sabarimala is also a constructive circuit for tourism. Nearest site seeing Tourist places can also be linked with this circuit.



**Figure 25.11 Development Concept**

Promoting intense Agriculture activities in available Agriculture areas of the town and Promoting home stead cultivation in residential area for achieving food sustainability to an extent.

Conservation of environmentally sensitive areas mainly water bodies from encroachments and also by providing green strips for its protection.

*Provision of Recreational facilities near the river and using water body for water theme parks, boating and other such exciting entertainment programs for attracting people.*

*Economic activities can be improved by introducing new developmental programs.*



## 26. POLICIES AND STRATEGIES

### 26.1 INTRODUCTION

A development concept has been evolved based on the studies and analysis on various physical features and economic factors affecting the planning area. This chapter contains the development policies and strategies evolved for the implementation of the development concept formulated for a period of 20 years. The general development policy and sectoral development policy are included in this chapter.

### 26.2 GENERAL DEVELOPMENT POLICIES

The general development policies adopted for implementation of development concept is furnished below.

*Trade, commerce and shopping have been identified as a major activity of the town. Develop Erattupetta as a major Market and shopping centre of the region. Also develop Erattupetta as a market centre of cash crops of the planning region.*

*Develop the economy of the planning area utilizing the resources available in the influence region. It includes utilizing the raw materials especially, the locally available cash crops, tourism potentials, human resources etc.*

*Develop Erattupetta as a second order center of the district with required facilities especially infrastructure facilities.*

*Providing better service facilities to the people by provision of better health services, quality education, quality power, water and various infrastructure facilities and ensure the welfare of economically weaker sections of the society.*

*Future development of the town with due consideration to the environment, with protection of all existing environmentally sensitive areas.*

The sector wise policies and strategies for the major sectors identified for Erattupetta town are furnished below.

### 26.3 TRADE AND COMMERCE

#### **Policy:**

*Strengthen the economy of the town by developing and diversifying the Trade and Commerce activities and developing the town as a commercial centre.*

#### **Strategies:**

- Opening up of new land for commercial activities with easy access
- Establishment of commercial complexes of International standards
- Renewal of existing commercial areas which are in dilapidated condition.
- Extension of Commercial area and providing connected facilities like parking place, drainage, waste disposal system etc.
- Provision of facilities for informal sector.
- Establishment of new commercial complexes by Municipality and other agencies.
- Provision of Parking areas in Market Places and Commercial areas
- Provide market facilities for locally produced value added products and agriculture products.

## 26.4 INDUSTRIAL SECTOR

### Policy :

*The development Policy is to establish new industrial units for value addition of products available in the hinterland and diversification of industrial activities*

### Strategies:

- Expansion of industrial estates and starting of new units
- Promotion of small I.T. establishments.
- Provision of infrastructure facilities like road, telecommunication facilities.
- Marketing facilities for the value added products.
- Industrial units for socially and economically weaker sections and industrial units under social organizations like Kudumbasree.
- Promotion of cottage industry.

## 26.5 HERITAGE AND TOURISM

### Policy:

*Total exploitation of tourism potentials – rivers, hill locks, rich culture, literacy, heritage, festivals, famous pilgrim centers, locational advantage etc and develop tourism as one of major economic activities of the town.*

### Strategies:

- Develop as a tourist transit centre considering the location of the town between tourist centers like Vagamon, Ilaveezhaponchira, Bharananganam and provide support facilities for pilgrims visiting Sabarimala

- Increasing connectivity of the town with neighbouring centers with roads of highways standard..
- Utilizing the tourism potentials of religious festivals, cultural festivals, fares.

## **26.6 AGRICULTURE AND ANIMAL HUSBANDRY**

### **Policy:**

*Strengthening the economic base of the town to an extent through strengthening the agricultural, animal husbandry. Proper integration of agriculture, animal husbandry and increase productivity in this sector. Improving the environmental condition of the area by rejuvenating water bodies.*

### **Strategies:**

- Promotion of homestead cultivation in low density residential area and intense cultivation in the area identified for agriculture. Priority for cultivation of vegetables
- Promoting organic farming and usage of bio fertilizer in agriculture activity, the solid waste may be converted in to bio fertilizer and reduce the quantity of solid waste at disposal point.
- Promotion of units for the value addition of agriculture products.
- Establish more dairy, goat, poultry farms and increase productivity through scientific methods.

## **26.7 TRANSPORTATION.**

### **Policy:**

*Provide an efficient road network, considering the traffic need of the town, connecting the various activities and nodes of the town.*

### **Strategies:**

- Developing a hierarchical system of road network within the planning area.
- Providing new road links for diverting traffic in the central area and decongesting the town center.
- Improvement of transport infrastructures like terminal facilities, parking facilities, pedestrian facilities.

## 26.8 HOUSING

### **Policy:**

*Provision of houses for the newly added population, improvement of structural condition of houses of economically weaker sections and improvement of housing quality.*

### **Strategies:**

- Provide adequate residential areas in land use plan.
- Promotion of planned development of residential activities
- Improvement / provision of basic infrastructure like quality roads, street light, recreational facilities, drainage etc in residential areas.

## 26.9 DRINKING WATER

### **Policy:**

*Ensure drinking water of required standard throughout the day for all households of the town. Increase the coverage of protected water supply system. Also provide sufficient water to the commercial and industrial establishments.*

### **Strategies:**

- Conservation and protection of water sources within the planning area. Protection of conventional water sources
- Augmentation and extension of protected water supply system to more areas.
- New schemes for uncovered area
- Provision of separate water distribution system for elevated area.
- Replacement of damaged pipe lines and fittings.
- Conservation of ponds for recharging the ground water sources.
- Promote Water Harvesting.

## 26.10 ENERGY

### **Policy:**

*Provide quality power to the existing consumers and ensure quality power for the new establishments. Provide a good street light system for the town.*

### **Strategies:**

- Provide system for uninterrupted power supply.
- Provide a good street light system for the town.
- Electrification of the houses of socially and economically weaker section.
- Adoption of non-conventional source of energy to the extent possible.

## 26.11 WASTE DISPOSAL AND DRAINAGE

### **Policy:**

*Improve the system of collection, conveyance and disposal of generated waste with participation of people and provide a hygienic environment. Promotion of a system of disposal of wastes at source itself. Maintain the habitable area free from flooding.*

### **Strategies:**

- Strengthening the present collection system with additional labours, vehicles etc.
- Effective mechanism for waste disposal at the existing dumping yard
- Promoting the system of waste disposal at source itself. Extension of waste collection system to more public area with people's participation and adoption of decentralized disposal system. Also sorting and shredding facility to be introduced.
- Popularizing Bio fertilizer manufacturing units.
- New public comfort stations.
- Maintenance of existing road side drains and natural drains to avoid flooding.

## 26.12 EDUCATION

### **Policy:**

*Establishing institution with new generation courses, diversification of courses in the existing institutions and improve the general education status of the town.*

### **Strategies:**

- Provision of adequate infrastructural facilities for General education institutions in Government and Aided sector.
- Modernization of educational institutions with facilities like smart classes, language labs etc.
- Utilize the unutilized potentials, including land for starting new institutions/courses.
- Supporting facilities like hostels, libraries, sports complexes and career development centers.

## 26.13 HEALTH

### **Policy:**

*Improve the general health condition of the people by preventive measures and maintaining a healthy and hygienic conditions. Provide modern health facilities*



to cater the needs of people of Erattupetta and its influence region. Provide quality treatment through three systems of medicines.

**Strategies:**

- Further advancement of Supper Specialty facilities at hospitals
- Providing infrastructure facilities for Indian System of Medicine and Homeopathic Medicine System.
- Promotion of health tourism linking with other tourist activities
- Creation of a healthy and hygienic environment.
- Centre for care of Aged people, disabled persons, children etc
- Provision for proper disposal of bio medical waste.

## **26.14 CIVIC AMENITIES AND RECREATION FACILITIES**

**Policy:**

*Provide higher order civic amenities and recreational facilities as per standard considering the resident as well as population of the region.*

**Strategies:**

- Provide new Parks, Fair ground and Open spaces.
- Provision of water front recreational areas
- Improvement of existing recreational facilities.
- Improvement to the existing libraries and provision of modern facilities.

## **26.15 ENVIRONMENT**

**Policy:**

*To make Erattupetta as an eco-friendly, hygienic and aesthetically pleasing town by reducing pollution, improving and protecting environmentally sensitive areas.*

**Strategies:**

- Conservation of wet lands and water bodies.
- Conservation of identified heritage precincts and sacred groves.
- Effective solid waste management.
- Improving aesthetics of the town through various efforts like planned street scape, town squares, organized open space etc.

## 27. PROJECTED REQUIREMENTS

### 27.1 INTRODUCTION

The developments envisaged in the town through the Development concept will increase the Job opportunities and population of town. *Trade and Commerce, Service center activities, Agriculture and Animal Husbandry, Small Scale Industries and Tourism Related Activities* etc are envisaged in the development concept. In addition to that Erattupetta is proposed as a third order settlement in the district and the facilities in this regard has to be provided and this will create job opportunities especially in service sector.

### 27.2 PERSPECTIVE POPULATION FOR THE YEAR 2021 AND 2031

Population projection is usually done by understanding the pattern of population growth in the past and assuming that the same pattern will continue in the future also. The present population is projected to the desired future period by using various projection methods. Population growth of an area depends on number of births, deaths, in migrants and out migrants over a time period and these factors are also taken for the population projection.

Mathematical population projection methods are used for finding out the projected population. Arithmetic increase method, Geometric increase method incremental increase method and Decrease rate of growth method are used for calculation purpose and the average of it is considered as the projected population for the horizon period. The mathematical methods of projection show that the population of the town will decrease in future.

The perspective population is arrived by taking average of all population projection by various mathematical methods and factors like migration also taken into consideration. The district and the town are showing a negative growth rate of population. But it is expected that the population of the town will increase by a certain extent due to various policies adopted and the town should register an increase in population for its sustainability. The projected population by mathematical methods and perspective population of town arrived using different methods is shown in Table.27.1.

**Table.27.1 Projected Populations**

Sl:No:	Method	Projected Population	
		2021	2031
1	Arithmetic Increase Method	31105	32505
2	Incremental Increase Method	34045	38385
3	Geometric Increase Method	30893	32129
4	Decrease rate of growth Method	33602	37960
	<b>Average</b>	<b>32411</b>	<b>35245</b>
	<b>Migration</b>	<b>1000</b>	<b>2000</b>
	<b>Rounded to</b>	<b>33500</b>	<b>37300</b>

The expected population of Erattupetta Town is shown in the table27.1, Population is expected to reach 33500 by 2021 and 37300 by 2031. It is expected that more developmental activities will lead the town to the status of a fully fledged urban centre.

### 27.3 CHANGES IN OCCUPATIONAL STRUCTURE

The economic activities govern the occupational structure of the area. The expected population by 2031 is 37300. The work participation rate for Erattupetta is 32 % during the Census 2011. As per UDPFI Guide lines, for a Municipal Area, the minimum work participation rate shall be 33%. The work participation rate of the town is lower than the standard. With the introduction of new development projects as per the new Master Plan, economic base will be increased which will further result in the increase of job opportunities in Planning area. Based on this it is assumed that the work participation rate for Erattupetta will maintain the higher ratio and for the year 2031 also it is adopted as 38%. The Working force during 2031 is 14174 (38% of 37300).

### 27.4 AREA REQUIREMENT FOR VARIOUS URBAN USES

Erattupetta town can be considered as a small town as per UDPFI guidelines (population less than 50,000). The requirements for the small town as per UDPFI guidelines are worked out in the following paragraphs.

**Residential Areas**

At present an area of 3.18 Sq.km (42.45 %) is being occupied for residential purpose. As per UDPFI guidelines an area of 45-50% is to be provided under residential land use category. It is revealed that residential activity is seen scattered over the whole area mixed with dry cultivation areas and the thickly congested habitation point out to the need for vertical development. Hence no additional land has to be identified for residential land use as residences can accommodate in the dry cultivation zones also.

**Commercial Uses**

According to existing land use survey, only 0.20 Sq.km (2.68% of total area) of land is under commercial use in Erattupetta. UDPFI guidelines propose an area of 2-3% for commercial uses. As trade and commerce is considered as one of the major activity in the town, a projected area of 3% of total land use have to be allotted for this section which comes to be around 0.22 sq.km in area. Major activity under this field identified as collecting and selling of agricultural products for which does not need much increase in commercial area.

**Industrial Area**

As per UDPFI guidelines, for small and medium towns, industrial workers are taken to be about 20% of total working population. Thus it is estimated that there will be around 2000 industrial workers in Erattupetta by 2031. As per UDPFI guidelines, density of industrial workers must be in the range of 100 pph to 125 pph. Assuming employment density as 100 pph, the extent of industrial area will be 48ha. Thus about 0.48 sq.km of town area can be estimated to be occupied by industries by 2031.

**Public & Semi-public Use**

As per land use survey 0.23 sq.km (3.08%) of land area is under public and semi public use in Erattupetta town. As per UDPFI guidelines area of 6-8% of total area must be provided for public and semi-public uses for a small town. Land under public and semi-public land use is very low compared to the standards mentioned in UDPFI guidelines.

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**Transport & Communication**

As per UDPFI guidelines, an area of 10-12% should be allotted for transport and communication purposes in the case of small town. It can be found that only 6.38 % of total area is used for this purpose in Erattupetta. Erattupetta is a congested town with narrow roads and bridges and unauthorized parking and absence of segregated bus bays. In order to accommodate the fast growing traffic in the town and to reduce the traffic problems existing here, alternative solutions like flyovers and bye passes have to be introduced.

**Recreational Uses**

Land uses coming under this category are stadium, parks and open maidans, gardens, etc. Current area available for recreational uses is 0.40% of total town area which is found to be very less. According to UDPFI guidelines, 12-14% of total land area must be used for recreational purposes for the case of a small town. But while considering the current unavailability of land, this guideline cannot be followed. Recreational open spaces shall be provided at the rate of 1.40 -1.60 Ha/ 1000 persons. By taking this provision, the area to be provided comes around 0.52 sq.km for this purpose.ie about 6.90% of total town area.

**Agricultural land & Water Bodies**

As per land use survey, 3.23 Sq.km of area is coming under agricultural and water bodies. In order to meet the demand for developmental activities in the coming years, uncultivated land will have to be converted to other land uses. Only 0.002 sq.km area comes under environmentally sensitive zone and that area is proposed to be retained as such by imposing required zoning regulations. 2.86 Sq.km of area comes under dry agricultural sector which has to be protected by enforcing proper rules so as to prevent from conversion to other uses indiscriminately. At present 0.37 sq.km of land area is used by water bodies. This area has to be retained as such from encroachment and waste dumping by providing buffer zones for water bodies and also to reduce the water scarcity in future.



## 27.5 HOUSING AND SHELTER

As per socio economic survey 14.47% residential buildings in the town are kutchcha buildings and 0.15% belongs to hut category which require immediate up gradation. About 31.24 % of buildings are moderate & 52.45 % of houses are pucca buildings.

The projected population of Erattupetta town by 2031 is 37300. So an additional population of has to be accommodated in the town. Approximately additional 1500 new houses need to be constructed in the next twenty years.

## 27.6 DRINKING WATER

The steps adopted for the estimation of requirement of drinking water for the year 2031 is furnished below:-

<i>Projected Population (2031)</i>	– 37300
<i>Per capita domestic water demand as per standards</i>	–135 lpcd

As per socio-Economic survey, well is the main source of water for 57.58 % of houses. On the assumption that part of requirement of drinking water is met from the domestic well also, it is assuming that 100 lpcd is to be supplied through pipe line for domestic purpose. It is also assumed that 50 lpcd is required for non-domestic purposes.

<i>Total lpcd required</i>	–150
----------------------------	------

*Water to be distributed through pipe line is  $37300 \times 150 = 5595000$*

*lakh liters or = 5.595 MLD*

**27.7 SOLID WASTE**

As per socio economic survey 82.16 % of houses are disposed their wastes in their own compound. Considering the town as a high density residential area it can be assumed that 50 % of the waste need to be collected. The waste to be collected from the town is estimated as follows.

<i>Projected population</i>	- 37300
<i>Half of projected population</i>	- 18650
<i>Waste to be collected</i>	- $18650 \times 0.25 \text{ Kg/day} = 4.662 \text{ tones/day}$ .

So a system has to be evolved for collection and disposals of a quantity equal to 5 tons/day by 2031.

# **PART. III**

## **LAND USE AND SECTORAL PROPOSALS**



## 28. PROPOSED LAND USE PLAN

### 28.1 INTRODUCTION

Land use plays a major role in the process of evolving better environment for the town. Better management and distribution of activities in the town will reduce many problems relating to traffic and provision of service. The land use plan for the horizon year is proposed in tune with the policies and strategies mentioned in previous chapters, considering the present trend of land development, ongoing and committed projects and projected requirements and based on the development concept evolved.

In the proposed land use plan, the town has been divided into various zones. Commercial zone, Multi functional zone, Residential zone, Public and Semi-Public zone, Industrial zone, Traffic and Transportation zone, Transport Development zone, Dumping Yard, Tourism promotion zone, Parks and open spaces zone, Dry Agriculture zone and Water bodies are the zones proposed. The proposed land use of the town is shown in Figure 28.1.

### 28.2 LAND USE BREAK UP

The proposed land use break up in hectare and percentage of different land uses of the planning area is shown in Table 28.1. The residential zone occupies 47.44 % of planning area followed by the dry cultivation zone with 18.67 % of the Planning area.

**Table 28.1 Proposed Land use break up**

Sl.No	Land Use	Area (In Ha)	Percentage
1	Residential zone	355.79	47.44
2	Commercial zone	236.65	3.16
3	Multi Functional zone	81.05	10.81
4	Industrial zone	10.581	1.41
5	Public and Semi-Public zone	22.79	3.04
6	Dry Agriculture zone	140.04	18.67
7	Parks and Open Spaces	6.98	0.93
8	Traffic and Transportation zone	62.40	8.32
9	Transport Development zone	0.55	0.07
10	Dumping yard	0.15	0.02
11	Tourism promotion zone	10.01	1.34
12	Water Bodies	35.95	4.79
	<b>Grand Total</b>	<b>750</b>	<b>100</b>

**28.3 RESIDENTIAL ZONE**

Residential areas are scattered along the length and breadth of the town and hence residential zones are proposed throughout the town area. In addition to that residential uses are permissible in zones like Dry cultivation, Multi functional zone etc with certain condition.

**28.4 COMMERCIAL ZONE**

All major commercial and business activities of the planning area are concentrated along the Pala- Poonjar road from college junction to central junction and this area is proposed as commercial zone and other commercial activities scattered throughout the planning area are also marked as commercial zone.

**28.5 MULTI FUNCTIONAL ZONE**

The Pala- Poonjar road, Erattupetta – Kanjirapally road and Erattupetta - Vagamon road are the major roads emanating from the town centre which acts as the development corridors of the town .The existing land use shows the mixed use development along these corridors. In order to regulate the development along these corridors and provide adequate land for future urban development a mixed zone named as multifunctional zone has been proposed.

**28.6 PUBLIC AND SEMI PUBLIC ZONE**

The existing public and semi-Public uses are proposed to retain as such. The public and Semi-Public zones are scattered all over the Planning area. In addition to that there are provisions for Public and Semi-Public uses in other zones also.

**28.7 INDUSTRIAL ZONE**

All the existing industrial land uses are proposed as exclusive Industrial Zone and an additional area proposed for Industrial development in Thevarupara for shifting the industrial estate located near Nadakkal junction. In addition to that there is provision for setting up industrial units in other zones also with certain restrictions.



**28.8 TRAFFIC AND TRANSPORTATION ZONE**

The proposed road network of the Planning area consists of roads of width 18.00m, 15.00m, 12.00m and 8.00m. The existing Bus stations have been included in the transportation zone.

**28.9 PARKS AND OPEN SPACES**

A total extent of 6.98 hectares of land comprising of small parks and stadium comes under this zone. The existing land under Park and Open Space has proposed to retain as Park and Open Space and some more area for this zone also proposed.

**28.10 SOLID WASTE MANAGEMENT ZONE**

The existing dumping yard at Thevarupara is proposed to retain as the same.

**28.11 PROPOSED TRANSPORTATION ZONE**

An area of 0.55 hectare is reserved as transport development zone for the expansion of Kaduvamoozhy bus stand and an area of about one acre land is reserved for new bus stand near MES Junction on Vagamon road.

**28.12 DRY AGRICULTURE ZONE**

140.04 hectares of land scattered throughout the planning area has been proposed as Dry agriculture land. This area mainly consists of rubber plantations and mixed cultivation.

**28.13 WATER BODY**

Thekkanar, Vadakkanar and Meenachil River constituting the major water bodies in the Planning area.

**28.14 GREEN STRIP**

A green strip of 5.00 m width shall be provided along the sides of Thekkanar, Vadakkanar and Meenachil River.

**28.15 TOURISM PROMOTION ZONE**

An area of 10.11 hectares of land is proposed as tourism area in Valiyachan mala with ample scope for development in tourism sector located at the south west corner of the town.

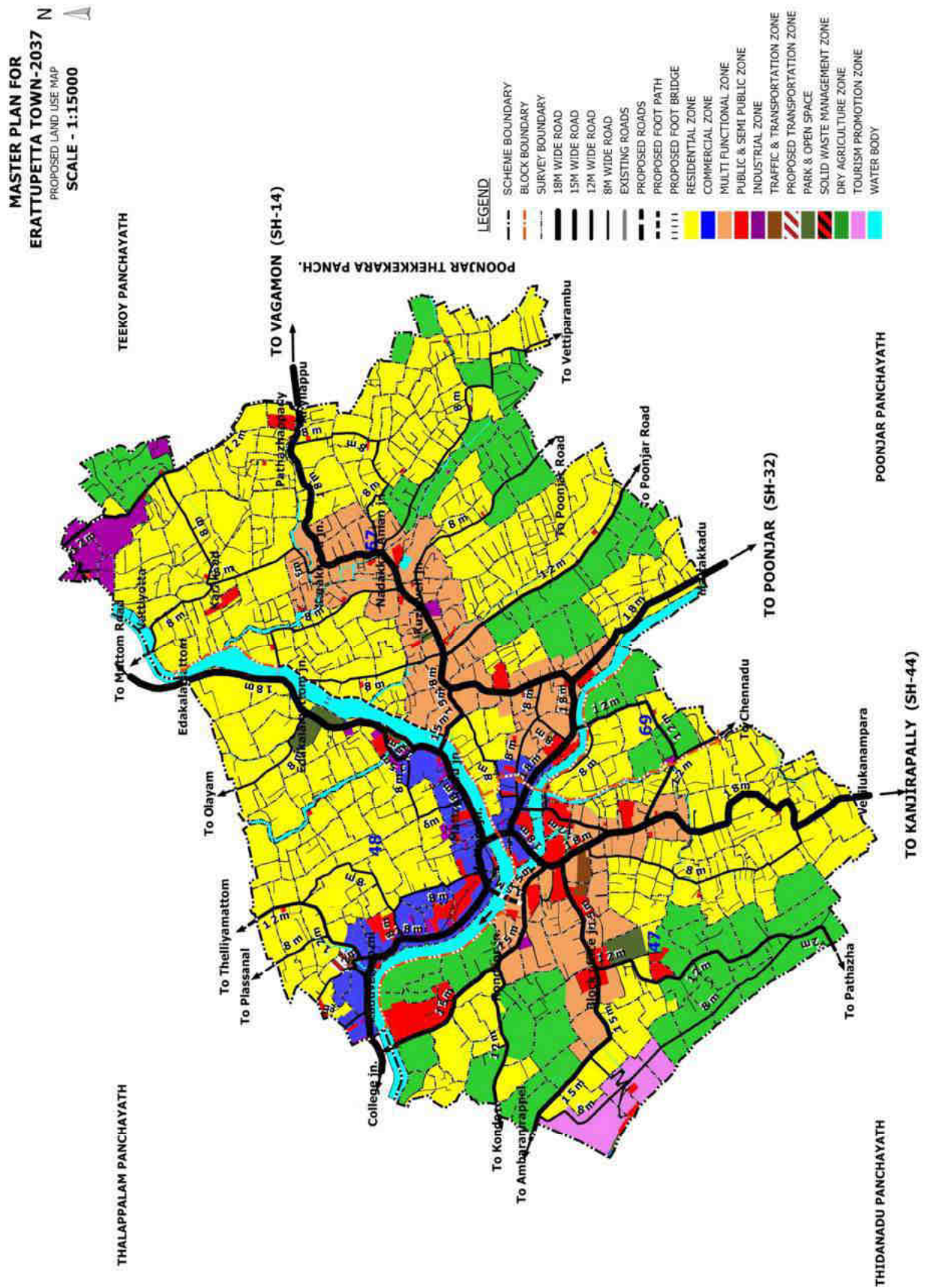


Fig. 28.1 Proposed Land Use Plan

## **29. TRANSPORTATION PLAN**

### **29.1 INTRODUCTION**

Transportation is one of the major sectors as far as an urban area is concerned and this chapter details the development proposals to be implemented in the transport sector within the plan period of 20 years in the Planning area. Due importance has been given for providing an efficient transportation system considering the future traffic also. Proposals for an efficient road network, terminal facilities, parking facilities and pedestrian facilities are included in this chapter.

Transport development plan for Erattupetta Municipality is prepared taking into account the existing traffic scenario and based on an evaluation of the future traffic on the base year network. Transport development schemes cover all the available modes of travel and are formulated so as to reduce the severe strain put on the existing road network. All committed development schemes were taken into account while formulating the transport development plan.

### **29.2 DEVELOPMENT STRATEGY FOR THE HORIZON YEAR**

A well defined hierarchy of roads is totally absent for Erattupetta town. However, it can be said that the town has a partial ring and radial type of road network with missing links. Roads in the study area are congested due to narrow roads, narrow bridges, unauthorized parking, absence of segregated bus bays, absence of pedestrian facilities etc.

Even though there are no well defined ring and radial roads for the city as a whole, roads connecting Central Junction, Ahmed Kurickal Junction, Causeway Rd Junction, Aruvithura Church Junction, Aruvithura Bank Junction and back to Central Junction, act as existing short ring road network in Erattupetta. The roads which act as radial roads are College Junction - Muttom Junction Road, Ahmed Kurikal – MES Junction Road, Ahmed Kurikal - Market Road, Causeway Road Junction – Chennad Road Junction Road, Aruvithura College Road and Aruvithura - Poovarthodu Road.

The above links can be said to serve the purpose of ring roads, but have partially insulated the CBD areas of the city from the influence of local traffic. Roads pass through short stretches which have built up areas on both sides, which make difficulty in further widening of road.

The SH - 32 road passing through the heart of the town is the spinal cord of the town road network. SH- 44 and SH-14 are the other important roads carrying heavy traffic. These roads carry major share of intra-city and inter-city traffic. These roads carries the traffic of its capacity at present and it will be very difficult to accommodate additional traffic in future. The traffic in the CBD area, especially from Muttom Junction to MES Jn. is very high and the traffic volume exceeds its capacity on this road stretch. The major reasons of the high traffic volume are concentration of activities like commercial, educational institutions, public and semi-public activities, location of bus station etc. Also in Sabarimala season the town has to carry additional traffic volume. The existing problems as well as the future projected traffic volume also considered for formulating the long term transportation plan for the horizon year.

The most important problem in the traffic and transportation sector of Erattupetta town is the congested central core with limited scope for road widening. Hence, emphasis has been given to develop alternative linkages so as to divert the traffic passing through the CBD area. This would also help to reduce the unwanted inter-mix of intra-city and inter-city traffic on urban roads within the central part of the town.

As the level of service of urban roads are depend to a great extent by the capacity of intersections, the development proposals should give importance to increase the capacity of major intersections by proper planning and design of these junctions. Special emphasis should also be given to improve the pedestrian facilities and in developing off-street parking lots.

### **29.3 ROAD NETWORK**

The widening of SH-14, SH-32 and SH-44 roads taking in to account of the anticipated traffic volume is to be given in the first priority and the proposed width of these roads are 18m. A hierarchy of roads of 18m, 15m, 12m and 8m

has been prepared in the road network plan and it is shown in fig 29.1. The list of proposed roads are shown in Table 29.1.

The road network proposed will be implemented when the local body or concerned department take necessary action for acquiring land and constructing new roads.

**Table 29.1 List of Proposed roads**

Sl. No.	From	To	Proposed Width (in m)	Name of the Road
<b>18.00m WIDE ROAD</b>				
1	Erattupetta jn.	Muttom	18.00	SH-44 (Muttom Road)
2	Erattupetta jn.	Pala	18.00	SH-32 (Pala Road)
3	Erattupetta	Kanjirappally Road	18.00	SH-44, Kanjirappally Road
4	Erattupetta jn.	Poonjar Road	18.00	SH-32, Poonjar Road
5	Erattupetta MES jn.	Vagamon	18.00	SH-14 Vagamon Road
<b>15.00 m WIDE ROAD</b>				
6	Aruvithura JN.,	Lion's club jn.	15.00	College road
7	Aruvithura JN.,	Ampara nirappel	15.00	Block office Road
8	Thottumukku cause way	Wagamon road connection	15.00	Nadakkal-Thottumukku causeway
9	Thottumukku	Almanar School	15.00	Muttom road
10	Thottumukku	Almanar School	15.00	River side road
11	Lion's club jn.	Vadakkekara	15.00	Proposed road
<b>12.00 m WIDE ROAD</b>				
12	Aniyilappu	Thevarupara road	12.00	Thevarupara road
13	Thazathu nadakkal	Panachikappara road	12.00	Kottukappally road
14	Puthen pally jn	Chennadu road	12.00	Thadavanal road
15	Kurikkal nagar	Thekkekkara	12.00	Muhydeen pally causeway
16	Thekkekkara	Chennad road	12.00	Chennad road
17	Block office	Valiyachan mala	12.00	Stadium road
18	Lion's club jn.	Kondoor road	12.00	Kondoor road
19	Penthocost church jn.	College jn.	12.00	Pala Road jn.
20	Kaduvamuzhy bus stand jn.	Olayam	12.00	Olayam road



21	Kaduvamuzhy bus stand jn	Pala road	12.00	Old pala road
<b>8.00 m WIDE ROADS</b>				
22	Onnam mile	Thevarupara	8.00	Karakkad road
23	Huda jn.	Eettalakayam Check dam	8.00	Mundakkal parambu
24	Thazathu nadakkal	Eattilakkayam	8.00	Eattilakkayam road
25	Aman Jn.	Pthazhappady	8.00	Arafa nagar road
26	Aman Jn.	Safa road	8.00	Safa nagar road
27	Kurikkal nagar	Thottumukku causeway	8.00	Municipal office road
28	Kurikkal nagar	Wagamon road	8.00	Market road
29	Market road	P.M.C Junction	8.00	Puthuppally road
30	Muhydeen pally causeway	Thadavanal bridge	8.00	Thadavanal riverside road
31	KSRTC Bus stand	Kanjirappally road jn.	8.00	Jawan road
32	Ambara nirappel road	Valiyachan mala	8.00	Valiyachan mala road
33	Kaduvamuzhy	Thalappalam	8.00	Substation road
34	Rims Jn.	Vackaparambu	8.00	Vackaparambu
35	Police Stn Jn	Rims Jn.	8.00	Police Stn road
36	Vattakkayam Jn.	Thottumukku Jn.	8.00	Vattakkayam road
37	Idakalamattom	Olayam Jn	8.00	Mathakkal road
38	Eettalakayam.	Mundakkaparambu	8.00	River side road
39	Eettalakayam Bridge		8.00	Proposed bridge



**Junction Improvements-** Adequate improvements are immediately warranted for the intersections *viz*, College Junction, Muttom Junction, Central Junction, Ahmed Kurickal Junction, Puthenpally Bypass Junction, MES Junction, Veilukanampara, Chennad Junction, Causeway Road Junction, Aruvithura Church Junction, Aruvithura Bank Junction, Thottamukku Jn, Illakayam, Kalathukadavu, Thazhathu Nadakkal, Nadakkal Junction, Aniyillappu, Aradhana Madom Junction



Designed by NATPAC

**Fig.29.2 Conceptual typical intersection design for Muttom and Central Jn**

## 29.4 OTHER PROPOSALS

### 29.4.1 Parking Facilities

As most of the roads in the CBD area do not have adequate width to accommodate on street parking, it is proposed to develop off street parking facilities at the following locations.

(i) As the existing private stand is proposed to be relocated, mild commercial cum multilevel off-street parking facility is proposed at the existing private stand near Puthenpally. This multilevel facility will cater to the needs of Market and other commercial centres.

(ii) KSRTC Bus Station, Proposed New Private Station near Thazhathu Nadakkal and Kaduvamuzhy Municipal Bus Station should be scientifically designed with adequate parking facilities. It will result in integration between different modes and the use of bus transport system will get a leap.

(iii) Developing an off-street parking space in the open space and Municipal vacant lands near Vadakkekara and Muttom Junction will reduce the on-street parking.

(iv) Pickup points and convenient parking for intermediate public transport (Passenger Auto rickshaw, Taxis) shall be provided within the city/town. Parking for light freight vehicles (Goods Auto Rickshaw, Goods Pickup) shall be provided at appropriate locations within the city/town.

### 29.4.3 Pedestrian Facilities

The pedestrian facilities that need to be considered are:

(i) Sidewalks or walkways: Sidewalks and walkways are “pedestrian lanes” that provide people with space to travel within the public right-of-way that is separated from roadway vehicles. Sidewalks are associated with significant reductions in pedestrian collisions with motor vehicles. For Erattupetta town, considering the scarcity of land availability, sidewalks with a width of 1.8m to 2.5m is proposed for all types of roads including state highways, major district roads and other district roads. It is proposed to provide pedestrian walkway from Kaduvamuzhy Bus Station to MES Junction on SH32, Thottamukku to Chennad Junction on SH44, MES Junction to Nadakkal on SH14.

(ii) **Marked crosswalks and enhancements:** Marked crosswalks indicate optimal or preferred locations for pedestrians to cross and help designate right-of way for motorists to yield to pedestrians. Crosswalks are often installed at signalized intersections and other selected locations. Marked crosswalks are desirable at some high pedestrian volume locations (often in conjunction with other measures) to guide pedestrians along a preferred walking path. For Erattupetta town, cross walk markings are desirable at all arms of the major intersections. Apart from these intersections, cross walk markings are proposed at major high pedestrian volume locations like educational institutions, transport terminals, hospitals and commercial centre's.

Detailed engineering surveys need to be carried out before finalizing the exact location and design of the pedestrian facilities at the proposed sites. Pedestrian facilities should be designed and implemented based on IRC 103:2012.



## **30. SECTORAL PROPOSALS**

### **30.1 INTRODUCTION**

The sector wise proposals are derived based on the development concept and development issues pertaining to the sector. The economic feasibility and the environmental feasibility etc are considered for finalizing the proposals. The sector wise proposals are furnished below:

### **30.2 TRADE AND COMMERCE**

Erattupetta was a major trade centre of Kottayam District in olden days and its status gets down while Pala emerges as a market town. For developing Erattupetta as a market town some projects are proposed.

#### **30.2.1 International shopping complex**

The existing land use of the town reveals that the commercial development has taken place around Central junction and Muttom junction and along the side of state highways and the interior portions are remaining as under developed areas. It is suggested that future urban activities of the town will be taking place around Nadakkal and Block office junction and multifunctional zone is proposed at these junctions and along state highways. Shopping complexes of international level is proposed in Multifunctional zone. The facilities including loading and unloading area, storage area, waste management facilities etc should be included in these shopping complexes.

Shopping complexes in private sector may also be proposed in Muttom junction, Aruvithura junction and Kaduvamuzhy junction. As Nadakkal is included in multi functional zone, it may become a transit point to the tourists visiting Wagamon and Illickal kallu. Facilities supporting the tourism sector may simultaneously develop at Nadakkal.

**30.2.2 Parking area and Parking plaza**

Lack of parking facility is a major issue in Erattupetta town. Existing pay and park is located in Aruvithura church parking area. Purambokku land near Manchadi thuruthu (near Thekkekkara causeway) and near Kaduvamuzhy bus stand can develop as parking places. Provision of parking areas can be included in the proposed river view gardening project. The slaughterhouse near Thekkekkara causeway can be shifted to Thevarupara dumping yard and that place is suitable for establishing Municipal Town hall and public library. Ground floor of this Town hall can be used for Parking.

**30.2.3 Market**

Markets with modern facilities are to be included in the new market complex. Mini markets are proposed at Kaduvamuzhi and Aruvithura.

**30.2.4 Vendors and Hawkers**

Vendors and Hawkers are to be rehabilitated to suitable places.

**30.2.5 Truck Terminal**

A modern Truck terminal cum shopping complex is to be proposed in Pala - Erattupetta road.

**30.3. INDUSTRY**

There are no major industries within the town and a few small scale furniture industries are functioning around Nadakkal area. Industrial zone is proposed near Thevarupara for shifting small industrial units spread around Nadakkal to this region.

**30.3.1 Spices Park**

Erattupetta functions as the major trading centre of spices, spices park is proposed at Thekkekkara region for storing and processing the spices in large scale.

**30.3.2 Labour bank**

The town area is facing lack of supply of labourers and hence one labour bank is proposed to meet this problem. The details of the labourers may be kept in a register in the municipality and the

labourers can be supplied from the labour bank based on demand. This programme can be implemented through the Municipality.

## **30.4 AGRICULTURE AND ANIMAL HUSBANDRY**

### **30.4.1 Terrace cultivation**

Even though 38% of town area is under dry cultivation zone and ample scope for irrigation facilities are existing, vegetable production is very limited in town area. By promoting terrace cultivation and grow bag cultivation, self sufficiency in the production of commonly used vegetable can be attained to some extent.

### **30.4.2 Floriculture**

Floriculture considering the local demands utilizing the irrigation facilities available.

### **30.4.3 Dairy farms**

Activities in Animal Husbandry sector are very limited in town. Surrounding Panchayats are supported with large parcels of barren land where new dairy farms can be established and there is scope for units to be proposed in Erattupetta producing value added products based on diary.

### **30.4.4 Poultry and broiler farm**

Even though demand for meat products are very high in municipal area poultry farms are very limited in number due to the high residential density nature of the town. More Poultry farms may open out in nearby Panchayats like Teekoy, Poonjar etc for meeting the demand of the municipality.

### **30.4.5 Slaughter house**

Slaughter house is presently working near to high density residential area is to be shifted from there. Fund for land acquisition at

Thevarupara is included in the budget of Municipality for establishing a new slaughter house with modern facilities at Thevarupara.

### **30.5 TRANSPORTATION**

The proposal of this sector has already included in chapter 13.

### **30.6 HOUSING**

Even though structural condition of 40% of houses are good, some areas are identified with dwellings of poor condition. These can be included in LIFE project for renovation works. Nearly 400 applications are received under LIFE project and suitable location have to be identified.

#### **30.6.1 Slum Area**

Kadaplakkal colony, Haji colony, Vazhamattom colony, Myladumpaara colony, Kottukappally colony Chirappara colony, Aasary colony, Vanjankal colony etc are the colonies in Erattupetta. These include dwellings with area less than 3 cent and basic facilities are lacking. Apartments can be proposed to rehabilitate these families under LIFE project.

#### **30.6.2 New houses**

As per 2011 census, population density of Erattupetta town is 4642 and it is assumed that density may reach above 6000 in next ten year period. Hence it is necessary to control the horizontal development of housing sector and promote vertical development.

### **30.7 DRINKING WATER**

Most of the water demand of Erattupetta town is satisfied with many small scale drinking water schemes. KWA had started 3 projects in 1970 but are not functioning properly. Projected population for 2037 is

37300 and demand is 5.595 lpcd. Planning proposals are very needful for the future high water demand.

### **30.7.1 Projects Identified**

1. Augmentation of existing water supply schemes and formation of new ones.
2. A new Intake well is proposed near Nedunkeethi Kayam and overhead tank at Mattakkadu kunnu for meeting the water demand from Mattakkadu kunnu, Vanchankal, Kottukappally draught affected areas
3. The existing three projects under KWA need augmentation. The intake well for Erattupetta town scheme is located near Town check dam and the tank exists near Govt PHC compound. A new tank of large carrying capacity is to be constructed for benefitting the areas of Aruvithura, Thekkekkara, and Town area. All the damaged pipes are to be replaced and new distribution line to be installed for Thekkekkara region
4. Thevarupara Scheme under KWA also needs renovation
5. Thidanadu scheme under KWA needs new source
6. 20 other small water supply schemes functioning under (JJP) meet the demand of the town to certain extent. These water supply schemes are functioning without any treatment works. Proper treatment plants are to be installed with these schemes.

### **30.7.2 Protection of natural water sources**

Awareness programmes to be introduced for the protection of Meenachil River which acts as the artery of the town. Encroachment and waste disposal along river banks to be controlled. Water recharging techniques to be introduced.

### **30.7.3 Rainwater harvesting**

Municipality can take up water harvesting techniques.



## **30.8 ENERGY**

Power sector has major roll in Town development.

### **30.8.1 Improvement of production and distribution**

With the commissioning of Marmala Mini Hydro electric project, power distribution in municipal area will be improved. Electricity shortage problem can be met with Areal bunched cable (ABC). More transformers are to be placed.

### **30.8.2 Street lighting**

High mast lights are to be installed at major junctions of the town area.

### **30.8.3 Non conventional Energy**

Solar energy, Bio gas plant, green building concept etc to be introduced.

### **30.8.4 Electrification of houses**

Electrification of all houses especially the houses of economically weaker section.

## **30.9 WASTE DISPOSAL**

It is estimated that the total generation of solid waste of the town by the year 2031 is 5 tonnes / day, and proper treatment plant to be installed for handling this.

### **30.9.1 Solid Waste Collection**

Presently waste collection is carried out from major road side only by municipality which is to be extended to the whole municipal area.

### **30.9.2 Solid Waste disposal**

Existing plant at Thevarupara Dumping yard to be completed and new modern treatment plant to be introduced at Thevarupara dumping yard.

**30.9.3 Household disposal Units**

Pipe compost, portable biogas units etc to be introduced for processing the wastes at the generating points itself.

**30.9.4 Septic tanks**

Majority of houses are provided with single pit latrines and municipality can ensure that all the newly formed houses are using the facility of septic tanks. Provide subsidy to economically weaker sections for constructing septic tanks.

**30.9.5 Natural drains**

Almost all the natural drains are blocked or encroached and protection work for the remaining drains to be followed with the participation of public.

**30.9.6 Public comfort station / E- Toilets**

Public comfort stations are to be installed at Aruvithura, Vadakkekara region. Install new comfort station at town private bus stand.

**30.10 EDUCATION**

Higher education centers are not available in Erattupetta town.

**30.10.1 Finishing School**

Finishing schools giving training in Arabic and English language are to be introduced.

**30.10.2 Study Centers**

Study centers are to be introduced on subjects like agriculture, tourism, spice research etc in existing colleges.

**30.10.3 Government ITI and Technical School**

Government land is available for Erattupetta Technical School which is currently functioning at Teekoy Grama panchayats in a rented building. About 2 acres of land is acquired for this purpose and

Government ITI can also be proposed in the same land for achieving skill development among the local students of the town.

#### **30.10.4 Research centre**

Advanced research centers can be established in the existing colleges.

#### **30.10.5 Improvement of Infrastructural facilities and modernization of Government and aided schools**

New buildings to be constructed for Government High school Erattupetta and Government Muslim L.P.school. Ensure that all the schools are provided with play ground, toilets, computer lab, Language lab, Internet facilities, vehicle, drinking water etc.

### **30.11 TOURISM**

There is limited potential for tourism within the town. But the town has location advantage and proposals in the nature of supporting facilities are included.

#### **30.11.1 Farm / Pilgrim tourism**

The rambuttan plantation near Valiachan mala and the church and the cross which is the highest cross in Asia attracts so many tourists and the area can be developed as a pilgrim cum farm tourism centre.

#### **30.11.2 Tourism Circuit**

Pilgrim centers like Murugan mala, Thangal para, Valiachan mala and Bharananganam Alphonsa church and tourist places like Wagamon, Elaveezhaponchira, Illikkal kallu, Marmala waterfalls are also situated near to this municipality. A tourism circuit can be developed connecting all these places.

**30.11.3 River Tourism-** Explore the potential of Meenachil River by providing supporting facilities

**30.11.4 Aesthetic beauty of the town**

Junction improvement, footpath modification, Riverbank beautification, Walkway along the side of Meenachil River, traditional street lights are the components for improving the aesthetic beauty of the town.

**30.12 HEALTH**

A health facility as per standard for the population of the town is not available in Erattupetta.

**30.12.1 Up gradation of C.H .Centre**

Upgrading the Community Health centre by constructing new blocks to a specialty hospital.

**30.12.2 Emergency Medical services**

An emergency Medical service with all necessary equipments with priority for aged people.

**30.12.3 Ayurveda Hospital**

Existing Hospital has no proper infrastructure and hence it may be renovated or a new building may be constructed as per the standards to meet the needs of the people in the town.

**30.12.4 Homeopathic Hospital**

Up gradation of the existing building and additional facilities to be introduced.

**30.12.5 Centre for Aged and disabled people**

One Bud's school is functioning at Nadakkal and clinic to be started for the care of Aged people, disabled children, mentally retarded person etc.

**30.12.6 Health Tourism-** Explore the chances of health tourism.

### **30.13 CIVIC FACILITIES, CULTURE**

Recreational and other civic facilities are inadequate in the town.

#### **30.13.1 Parks**

New park at Edakkalamattom in Thodupuzha road proposed. New Childrens Park proposed at Aruvithura area where land is owned by Municipality.

#### **30.13.2 Stadium**

Renovation of Aruvithura stadium, Construction of a new Indoor Stadium at Mathakkal - Edakkalamattom region.

#### **30.13.3 Sports Complex**

A sports complex adjacent to stadium with modern facilities for gymnasium, play ground for different games etc.

#### **30.13.4 Town Hall/ Library**

Construct a new town hall cum library in the land where slaughter house is presently functioning.

#### **30.13.5 Crematorium**

Construct a new crematorium at a suitable place by municipality.

#### **30.13.6 Podium**

Construct a new podium at Mukkada road in revenue land.

#### **30.13.7 Walkway**

Construct a walkway along Meenachil river from Thottumukk Causeway to Eettikkayam road and a hanging bridge connecting walkway and Municipal park proposed in opposite bank.



**30.14 SOCIAL WELFARE, SECURITY**

For the welfare of children, women and weaker section of the town and for the security of the people the following proposals are included in the plan.

**30.14.1 Community halls-** One community hall is proposed along the side of Thekkenar, near Manchadithuruth.

**30.14.2 Own building for Anganvadies**

New buildings for Anganvadies which are now functioning in rented building.

**30.14.3 Equipments to all Anganvadies**

Provision of modern playing equipments for all Anganvadies

**30.14.4 Women Development**

Small industrial units in all wards of the town with the help of Kudumbasree or similar social groups. Necessary training programme for starting the units and a centralized market facilities for selling the products.

**30.14.5 Child Care Centre-** Starting of a Child Care centre.

**30.14.6 SC / ST Development**

Training programme for personality development for attending test and interviews of competitive examinations. Training for servicing of mobile phones, computer, umbrella etc and food processing. Subsidy for starting industrial units.

**30.15 ENVIRONMENT**

Strict regulation has been included in the zoning regulation for the protection of the Meenachil River. Control the digging of bore wells,

releasing encroachments on river, enhancing pisci culture, Proper Waste management techniques etc to be practiced.

### **30.16 GOVERNANCE**

The present municipal office was very old one and new building with adequate parking space is to be established. For providing better services to the people and to improve the efficiency of functioning, the infrastructure of the municipal office has to be improved.

#### **30.16.1 Civil Station**

Almost all the Government offices are functioning in rented buildings and P.W.D and Village offices are lacking facilities. Civil station is proposed in two acres of revenue land where police station and Circle office are now situated. Police quarters are in dilapidated stage and apartment is proposed there.

### **30.17 RELIEF CAMPS.**

Public buildings in the town that can be used as safe relief camp in the occurrence of disaster includes M.G.H.S. School, Kaduvamoozhi madrasa hall, M.M.M.U.P School, St.George H S, St.Mary's L.P.School, Barakath Mahal Auditorium

# **PART. IV**

## **DEVELOPMENT REGULATIONS**



## 31. ZONING REGULATION

### 31.1 INTRODUCTION

Zoning is a device of land use planning used in a Master Plan. The word is derived from the practice of designating permitted uses of land based on mapped zones which separate one set of land uses from another. Zoning Regulations are the means to achieve development of a use zone as envisaged in the Master Plan. In other words Zoning Regulations are laws that define and restrict how to use a particular property coming under a Master Plan. Thus it is the public regulation of land and building use to control the character of a place.

The development suggestions of a Master plan will be spatially located in the proposed land use plan. Areas will be zoned under various categories such as *Residential Zone, Commercial zone, Multi Functional Zone, Public and Semi public zone, Industrial zone, Traffic & Transportation zone, Park and open space, Solid waste management zone, Proposed Transportation zone, Dry agriculture zone, Water body, Green strip, Tourism promotion zone* for securing the most efficient and effective use of land in public interest. Therefore, a set of zoning regulations for the implementation and enforcement of the proposals envisaged in the Development Plan will also be part of the Master Plan. Zoning regulations will specify the details regarding the nature of uses '*permitted*', uses '*restricted*' and uses '*prohibited*' in each zone.

### 31.2 ZONING REGULATIONS

**31.2.1** All future developments shall be in conformity with the provisions of the Master plan for Erattupetta Town and future construction shall conform to the Kerala Municipality Building Rules in force unless otherwise specified in this regulations.

**31.2.2** For the implementation and enforcement of the proposals envisaged in the Master plan for Erattupetta Town, areas have been zoned under various uses such as ***Residential Zone, Commercial zone, Multi Functional Zone, Public and Semi public zone, Industrial zone, Traffic & Transportation zone, Park and open space, Solid waste management zone, Proposed Transportation zone, Dry agriculture zone, Water body, Green strip,***

**Tourism promotion zone** Details regarding the nature of uses “permitted”, uses “restricted” and uses “prohibited” in each zone are given in subsequent paragraphs

Uses **‘Permitted’** in a zone cover the uses that can be normally accommodated in the relevant zone. Such uses may be permitted by the Secretary, Erattupetta Municipality, hereinafter referred to as Secretary. In some cases it may be possible to permit some other uses also, which are not likely to affect the quality and environment in a zone specified for a particular use. Such cases have to be individually studied based on their performance characteristics and special location factors. Such cases which come under this category are classified as “Uses Restricted”.

Uses **Restricted -1** Category deals with the uses that shall be restricted by the Secretary with the concurrence of the Town Planner of the District office of the Department of Town and Country Planning having jurisdiction over the area.

Uses **Restricted -2** Category deals with the uses that shall be restricted by the Secretary with the concurrence of the Chief Town Planner concerned of the Department of Town and Country Planning.

**“Used prohibited”** enlists the various objectionable uses in each zone which shall not be permitted under normal circumstances.

**31.2.3** Zoning regulations are not intended to prohibit existing uses that have been lawfully established prior to the enforcement of these regulations. They are essentially intended to help the competent authority in decisions regarding granting or refusal of planning permissions for land use conversions and construction of buildings /structures or any other matter specifically mentioned in these regulations.

**31.2.4** If any space in a zone is put to a **“Use Prohibited”** as stated in Para 31.2.2, before the sanctioning of the scheme, such use shall be termed as nonconforming use. A non-conforming use may be allowed to continue in its existing location and essential repairs and maintenance for the structure may

be permitted by the Secretary, provided that the said use create no adverse environmental influence in the zone. Addition, alteration or reconstruction, if found necessary as part of any mitigation measures may be permitted for such uses by the Secretary with the concurrence of the Chief Town Planner concerned.

**31.2.5** Existing areas and structures of archaeological importance, agriculture uses and religious uses may be permitted to continue in all the zones and shall not constitute non conforming uses.

**31.2.6** Regulation of constructions and/or land developments on the sides of new roads/roads proposed for widening as per the Plan shall be governed by the distance from the centre line of the road, unless otherwise specified in the Plan or in any detailed road alignment approved by the Chief Town Planner concerned.

**31.2.7** Constructions and/or land developments, if any, in paddy lands and in wet lands, shall be in conformity with the Paddy land and Wet Land Act in force in the state.

**31.2.8** The provisions of Noise Pollution (Regulation and Control) Rules 2000, at places notified as 'silent zones' by respective government orders shall be applicable to the area under this scheme.

**31.2.9** The Government shall have the power to issue clarifications in respect of technical interpretations, if any, required in any of the provisions of the scheme in consultation with the Chief Town Planner concerned.

**31.2.10** Any use not specified either in the 'uses permitted' or 'uses restricted' category of a particular use zone, but which is of a similar nature to any use permitted or restricted in that particular use zone, can be considered by the Secretary, with the concurrence of the Chief Town Planner concerned.

**31.2.11** The zoning regulation of Master Plan for Erattupetta Town is given in the subsequent table.



Paragraph No.	Uses Permitted	Uses Restricted -1	Uses Restricted-2	Uses Prohibited
1	2	3	4	5
<b>31.2.11.1</b>	<b>RESIDENTIAL ZONE</b>			
	All residences, Residential Flats/Apartments and its incidental uses - night shelters, Orphanages/Old Age Homes/Dharmasalas, Convents, Residential Quarters, Farm Houses and Residential plot development.	Outdoor game stadium, open air theatre, amusement park, Parking Plaza	Fuel Filling Stations	Any other uses not specified in columns 2,3 and 4
	Shops, Commercial offices, and Restaurants,/ Canteen/ hotels, Banking and Financial institutions and Professional Offices, Movie hall, Godowns, ware houses, storage non-hazardous, IT software subject to the condition that floor area shall be limited to 1000 sq.m.	Hospitals with 10 beds, Nursing Home / Clinics (Outpatient) subject to the condition that floor area shall be limited to 1000 sq. m		
	Auditorium / Wedding Halls / Community halls / Exhibition Centres Art Gallery, Cultural and information Centre, Museum, social welfare centres subject to the condition that floor area shall be limited to 1000 sq.m	Other Public Utility Areas & Buildings, Places of Worship, Automobile workshops for 2/3 wheelers, Automobile workshops with power limited to 10 HP, Non – obnoxious and non-nuisance Service and manufacturing type industries engaging not more than 9 workers with power limited 10 HP or 19 workers without power subject to the condition that floor area shall be limited to 200 sqm.		

		IT hardware / Electronic Industries subject to the condition that floor area shall be limited to 300 sq. m		Any other uses not specified in columns 2,3 and 4
	ATMs,Gymnasium/ Yoga Centres.			
	All educational institutions up to Higher Secondary School, Day Care and Crèche, Nursery/ Kindergarten, Library and Reading Rooms, Swimming Pool.	All educational Institutions		
	Smokehouse attached to Residential Buildings			
	Clinics (Outpatient) and Diagnostic centres floor area shall be limited to 300sq.m.			
	All Government and public sector offices and institutions, Open air Theatre.			
	Cottage industries including coir, service industries of non- nuisance nature, Food processing units with number of workers limited to 6, without power or 3 workers with power limited to 5 HP as per Annex 32.1, subject to the condition that floor area shall be limited to 200 Sq:m, Water Treatment Plants below 5 MLD			
	Tot Lots/park/play ground			
	Storage of Agricultural Produces and Seeds, Green Houses			

	Transmission towers, Telecommunication towers and Wireless Stations, P&T office.			
	Plant Nursery, Agriculture, Seed Farms, Pump House, Wells and Irrigation, Ponds			
<b>31.2.11.2</b>	<b>COMMERCIAL ZONE</b>			
	All residences, Ashram/Mutt, Residential apartments with lower floors for commercial uses, Hostels, Boarding houses, Guest Houses, Lodges, Night Shelters, Orphanages/Old Age Homes/Dharmasala, Convents, Residential Quarters, Farm Houses, Smokehouse attached to Residential Buildings	Indoor / Outdoor game stadium, places of worship, museum, exhibition centre and art galleries, Movie Hall		Any other uses not specified in columns 2,3 and 4
	All Shops including Shopping Complexes, Shopping malls, Multiplex, Hypermarkets, Automobile show rooms, Restaurants, Hotels, Motels, and Markets			
	Professional offices, Commercial Offices & Establishments, Banking and financial institutions, Gymnasium / Yoga Centres, Weigh bridges, IT software units	Clinics, Diagnostic Centres and Hospitals		
		IT Hardware /Electronic Industries, Marble and Granite Storage/Cutting centres, Radio and TV station, Civil defence and home guard		

	Educational institutions up to Higher Secondary level, expansion of all existing educational institutions, Day Care and Crèche, Nursery/Kindergarten - all the above uses subject to the condition that floor area shall be limited to 8000 sq. m	Educational institutions above Higher Secondary level - all the above uses subject to the condition that floor area area above 8000 sq.m		
	All Govt. or Public Sector offices, Public Utility Areas & Building, Social welfare centre, - all the above uses subject to the condition that floor area shall be limited to 1500 sq.m.	Public Utility Areas & Building, Social welfare centre – all the above uses above 1500 sq.m.	Cremation ground / crematorium, Burial Ground / Common Vault.	Any other uses not specified in columns 2,3 and 4
		Bus terminal/stand, Lorry stand		
		Godowns, ware houses, Storage of non-hazardous materials, Stacking yard.		
	Auditorium, wedding hall, convention centres – all the above uses subject to the condition that floor area shall be limited to 1500 sq. m	Auditorium, Wedding Hall, Convention Centres all the above uses above 1500 sq.m		
	Clinics, Diagnostic Centres and hospitals up to 50 beds, Library and Reading Rooms	Amusement parks, R&D institutes, Indoor and outdoor game stadium, Convention centre.		
	Tot Lots/Parks/Play Grounds, open air theatre, fairground, Swimming pool, camping site			
	Parking Plaza, Taxi/Jeep Stand, Auto rickshaw Stand			

	Plant Nursery , Storage of Agricultural Produces and Seeds			
	Non - obnoxious and non- nuisance Service and manufacturing type of Industries as per Annex 32.1, IT Hardware/ Electronic units	Automobile workshops for 2/3 wheelers , Automobile workshops, Automobile Service Stations, Service and manufacturing Industries of non- nuisance Nature (Annex 32.1) engaging not more than 19 workers without power or 9 workers with power limited to 30 HP, printing press, water treatment plants		
	Transmission Towers and wireless stations, telecommunication tower			
<b>31.2.11.3</b>	<b>MULTI FUNCTIONAL ZONE</b>			
	All residences including apartments, Night shelters, Residential Quarters, Hostels and boarding houses, lodges and guest houses, Ashram/Mutts, Convents, Orphanages, Old age homes, Dharmasalas		Fuel Filling Stations	Any other uses not specified in columns 2, 3 and 4.
	All Shops including Shopping Complexes, Shopping malls, Multiplex, Bear pubs/Parlour, Liquor Bars, Restaurants, Hotels, Motels, Markets, Professional offices, Commercial Offices & Establishments, Weighbridge Banking and financial institutions, IT/ software units with floor area up to 8000sqm	All Shops including Shopping Complexes, Shopping malls, Multiplex, Hyper markets, Restaurants, Hotels, Motels, Markets, Professional offices, Commercial Offices & Establishments, Banking and financial institutions, IT/ software units all the above uses with floor area floor area above 8000 sq.m		

	Automobile show rooms, storage, IT/software units, stacking yard, Gymnasium/ Yoga Centres	Godown, warehouses, Automobile workshops with power limited upto 30HP, manufacturing and service industries engaging not more than 9 workers with power limited 30 HP or 19 workers without power (see annexure 32.1), IT hardware / Electronic Industries, Radio and TV station, Indoor game stadium	Automobile service station for heavy vehicles, Saw mill	
	Day Care and Crèche, Nursery/ Kindergarten, Library and Reading Rooms			
	All Government , public sector offices and institutions			Any other uses not specified in columns 2, 3 and 4.
	All educational institutions, Forensic science lab all the above uses up to 8000 sqm	All educational institutions, Public Utility Areas & Building, Social welfare centre, Museum		
	Outdoor game stadium, Amusement parks			
	Parking Plaza, Taxi/Jeep Stand/Bus terminals/stand, lorry stand , Auto rickshaw stand		Cremation ground/ crematorium , Burial Ground/Common Vault, Sewage treatment plant above 2MLD	
	Dairy Farms, Poultry Farms			
		Social welfare centre, Exhibition Centre and art galleries, Museum, convention centres, Indoor game stadium		
	Hospitals up to 100 beds	Hospitals above 100 beds		



	Godown, warehouses, storage, Automobile show rooms all the above uses subject to the condition that floor area shall be limited to 3000 sq. m	Godown, warehouses, storage, Automobile show rooms, all the above uses subject to the condition that floor area above 3000 sq. m		
	Social welfare centers, Auditorium, Wedding hall, Swimming pool, Exhibition Centre, Museum and art galleries, community halls, Public Utility Areas & Building cultural and information centers, Places of worship subject to the condition that floor area shall be limited to 1500 sq. m	Auditorium, wedding hall, Movie halls, Convention centers, Swimming pool, Exhibition centre and art gallery, Places of worship subject to the condition that floor area above 1500 sq. m Dairy farm /Poultry farm, Sewage treatment plant below 2MLD		
	Cottage industry, Automobile workshops for 2/3 Wheelers, Automobile service station light vehicles, Manufacturing and Service Industries of non-nuisance nature Annex 32.1) engaging not more than 19 workers without power or 9 workers with power limited to 30 HP, Printing press, Water treatment plants below 5 MLD			Any other uses not specified in columns 2, 3 and 4.
	Tot Lots/Parks/Play Grounds, open air theatre, camping site			
	Ice factory, Cold storage, Water treatment plants up to 5 MLD IT hardware/ Electronic Industries, Marble and granite storage/cutting centers			
	Transmission towers and wireless stations, Telecommunication towers			
	Smoke house attached to Residential Buildings, Smoke house			

31.2.11.4	PUBLIC AND SEMI PUBLIC ZONE			
	All Government and Public sector offices and institutions, Transmission Towers and wireless stations, R & D institutes, Radio and TV station, Civil defense and home guard	Indoor and Outdoor game stadium, Amusement parks, Convention centre	Fuel filling stations, Water treatment plant above 5 MLD	Any other uses not specified in columns 2, 3 and 4.
	IT Hardware / Electronic Industries, Automobile workshops for 2/3 wheelers, Water treatment plant below 5 MLD		Cremation ground/ crematorium, Burial Ground/ Common Vault	
	All educational institutions/medical institutions/ Hospitals of area up to 8000 Sq;m	All educational institutions/medical institutions/Hospitals above 8000 Sq;m		
	Places of worship / religious institutions			
	Library and reading rooms, Social welfare centers, Museum, Auditorium, Wedding hall, Swimming pool, Exhibition Centre and art galleries, community halls, cultural and information centers, public utility buildings			Any other uses not specified in columns 2, 3 and 4.
	All Residences - floor area up to 500 sq. m, Residential uses incidental to the public and semi public uses.			
	Night Shelters, Orphanages/Old Age Homes/Dharmasala, Residential Quarters, Farm Houses, Ashram/ Mutt, Convents			

	Shops, ATMs, Cyber café, Restaurant/ Canteen, Beauty parlors, Gymnasium/ Yoga centre - all the above uses subject to the condition that total floor area shall be limited to 300 sq.m,			
	Commercial offices, Professional Offices , Banking and Financial institutions - all the above uses subject to the condition that total floor area shall be limited to 500 sq. m			
	Tot Lots/Parks/Play Grounds, open air theatre , camping site			
	Plant Nursery , Storage of Agricultural Produces and Seeds			
	Parking Plaza			
<b>31.2.11.5</b>	<b>INDUSTRIAL ZONE</b>			
	All type of Industries, Medium and Heavy Industries, Automobile showrooms/Workshops , Automobile Service Stations -light/heavy vehicles, Spray painting Workshops	Industrial Estates and Industrial Parks, Saw mills with Timber Yards		Any other uses not specified in columns 2,3 and 4.
	Cold Storage, Ice Factory, Water Treatment Plants	Metal crusher/ M.Sand units		Any other uses not specified in columns 2, 3 and 4.
	Marble and Granite Storage/Cutting Centers, Minor Storage of Explosives and Fireworks, Gas Godowns			
	Dairy Farm, Poultry farms, Smoke houses, Fish and Meat Processing Centre, Sewage Treatment Plants, Junk Yards, Dairy related industries	Commercial office/ Professional offices, Banking and Financial institutions with floor area up to 300 sq.m		

	Residential Quarters, Residences with floor area up to 500 sq. m, Residential uses incidental to industrial use	Public buildings	utility	
	Cyber Café, Restaurant / Canteen with floor area up to 200 sq. m, Retail Business and Wholesale Business incidental to the industries - all the above uses subject to the condition that floor area shall be limited to 200 sq. m.			
	ATMs, Godowns / Warehouse/ Storage of non-hazardous, Weighbridge, IT Software unit, stacking yard, other uses incidental to Industrial use.			
<b>31.2.11.6</b>	<b>TRAFFIC &amp; TRANSPORTATION ZONE</b>			
	All buildings and uses connected with transport and communication such as Bus Terminal / Lorry / Car/Jeep stand, truck terminal, Auto Rickshaw stand, essential repair and service shops related to the transport and communication use, Parking plaza, Container terminal, Residential uses incidental to main use including lodging rooms.			Any other uses not specified in columns 2, 3 and 4.
	Police Post/Station, Post and Telegraph Office, Transmission Towers and Wireless Stations, Telephone Exchange, Electric Sub-Station			Any other uses not specified in columns 2, 3 and 4.

	All Shops ATMs, Restaurants /canteen up to 300sqm, Weigh bridges			4.
	Public Utility areas and buildings, Fuel filling station, parks which form an integral part of the transportation use.			
	Tot lots, Parks and play grounds			
<b>31.2.11.7</b>	<b>PARK AND OPEN SPACE</b>			
	Any construction for the development /improvement of park and open space, Tot Lots/Parks/Play Grounds, Minor Public Utility buildings.	Incidental Retail shops, Snack bars, Parking Plazas		Any other uses not specified in columns 2, 3 and 4.
<b>31.2.11.8</b>	<b>SOLID WASTE MANAGEMENT ZONE</b>			
	Dumping yard, treatment plants, Agricultural Nurseries, Social forestry. Buildings incidental for solid waste management.			Any other uses not specified in columns 2, 3 and 4.
<b>31.2.11.9</b>	<b>PROPOSED TRANSPORTATION ZONE</b>			
	All buildings and uses connected with transport and communication such as Bus Terminal / Lorry / Car/Jeep stand, truck terminal, Auto Rickshaw stand, essential repair and service shops related to the transport and communication use, Parking plaza, Residential uses incidental to main use including lodging rooms.			Any other uses not specified in columns 2, 3 and 4.

	Police Post/Station, Post and Telegraph Office, Transmission Towers and Wireless Stations, Telephone Exchange, Electric Sub-Station All Shops, ATMs, Restaurants /canteen up to 300sqm, Weigh bridges Public Utility areas and buildings, Fuel filling station			
<b>31.2.11.10</b>	<b>DRY AGRICULTURE ZONE</b>			
	Residences, Orphanages, Old Age Homes, Dharmasala, Ashram/Mutt, Convent – all the above uses subject to the condition that floor area shall be limited to 500 sq. m	Residences, Orphanages, old age homes, dharmasala, Ashram/Mutt, convent above 500 Sq.m	Fuel Filling Stations	Any other uses not specified in columns 2, 3 and 4.
	ATMs, Shops, Professional Offices, Commercial Offices/ Establishments, Banking and Financial institutions, Restaurants/ Canteens – all the above uses subject to the condition that floor area shall be limited to 500 sq. m.	Saw Mills, Automobile workshops for 2/3 Wheelers, four wheelers		
	Markets subject to the condition that floor area shall be limited to 500 sqm.			
	Places of Worship, Hospitals and health centers – all the above uses subject to the condition that floor area shall be limited to 500 sq. m			
	Auditorium/Wedding Halls/Community halls, Convention centre Social Welfare centers – all the above uses subject to the condition that floor area shall be limited to 1000 sq. m.		Slaughter houses, Storage of explosive and fireworks, Gas Go Downs, Saw mills with Timber yard	



		Service industries of non-nuisance type (Annexure I) 20 workers without power or 10 workers + 50HP	Dumping yards, Sewage Treatment plants	Any other uses not specified in columns 2, 3 and 4
	Day Care and Crèche, Nursery/Kindergarten/ Primary & Upper primary schools, Library and Reading Rooms, Public Utility Areas & Buildings, Swimming pools	Fish / Meat processing centers, Dairy farm, Poultry farm, Piggery farm	Junk yards, Cremation Ground / Crematorium, Burial Ground / Common Vault	
	Godowns/Warehouses/ Storage - non-hazardous - all the above uses subject to the condition that floor area shall be limited to 500sq.m	Stacking Yards, Godowns/Warehouses /Storage - non-hazardous, - all the above uses subject to the condition that floor area above 500 sq. M.		
	Clinics (Outpatient) and Diagnostic centers - floor area up to 200 sq. m.			
	Gymnasium/Yoga Centers			
	Transmission towers, Telecommunication towers and Wireless Station, Telephone Exchange.			
	Small and medium service and manufacturing type industries.			
	Tot Lots/Parks/Play Grounds, Open air theatre, Camping site.			
	Smokehouses attached to residential buildings, Smokehouses.			

	Plant Nursery, Agriculture, Horticulture, Fodder cultivation, Pastures, Grazing grounds, Fish Farms, Seed Farms, Pump House, Wells and Irrigation Ponds.			
	Storage of Agricultural Produces and Seeds, green houses.			
<b>31.2.11.11</b>	<b>WATER BODY</b>			
	Water landings, Pump houses, Boat jetties, Terminals, Bridges, side protection walls, Fish landing centers, Bathing Ghats	Fish farms	Minor Public Utility areas & buildings which will not affect the character of the area.	Any other uses not specified in columns 2, 3 and 4
<b>31.2.11.12</b>	<b>GREEN STRIP</b>			
	Area to be used only for planting trees in order to retain as green areas, parks, pump houses, foot paths with paving tiles, seating arrangements wells and irrigation ponds, storage of agricultural products and seeds, green house having single floors with a coverage not exceeding 30.00%			Any other uses not specified in columns 2, 3 and 4
<b>31.2.11.13</b>	<b>TOURISM PROMOTION ZONE</b>			
	Tot Lots/Parks/Play Grounds, Open air theatre, Camping site Minor Public Utility areas & buildings Residential uses incidental to main use including lodging rooms Incidental Retail shops, Snack bars up to 100 sqm. Plant Nursery, Agriculture, Horticulture, Fodder cultivation, Pastures, Grazing grounds, Fish Farms, Seed Farms, Pump House, Wells and Irrigation Ponds.	Parking plaza, Buildings related to Tourism Activities. Restaurant up to 500 sqm		

**31.2.12.** A green strip of 5.00 m width shall be provided along the sides of Meenachil River, Thekkanar and Vadakkanar

**31.2.13.** If a plot under a particular survey number/numbers included in a single document registered before date of sanction of this plan and falls under two different zones, zoning regulation of major portion, ie. more than 70% is applicable to the entire plot

**31.2.14.** Subject to zoning regulations of the respective use zones, more than one uses may be combined in a building, provided that the floor area of such a building shall not exceed the maximum floor area permitted for any of such use premises in that use zone.

**31.2.15.** For the purpose of these regulations, floor area means the total floor area of the building in all floors.

**32.2.16.** Land to a depth of 50 m in **Residential, Commercial, Public and Semi public and Dry agricultural zones** along the sides of the roads with existing or proposed width 8 meter and above, uses permitted in **Residential, Public and Semi Public zones and Multifunctional zone** may also be permitted by the Secretary of Local Self Government Institutions if the uses are not permissible otherwise.

**32.2.17.** Land to a depth of 100 m in **Residential, Commercial, Public and Semi Public and Dry agricultural zones** along the sides of roads with existing or proposed width 12 meter and above, uses permitted in **Residential, Public and Semi Public and Multifunctional Zone** may also be permitted by the Secretary of Local Self Government Institutions if the uses are not permissible otherwise.

**31.2.18.** The provisions of the Detailed Town Planning schemes or Area Development Plans will prevail over the regulations mentioned above.

**31.2.19.** Only the existing public and semi-public areas (as on the date of publishing the plan) has been included in the public and semi-public use zone of the proposed land use Map and no new plots has been included in this zone. The public and semi public zones are limited to the boundary of the plot with existing public and semi-public uses. In case any adjacent plots

which are marked as public and semi-public zone in the map but not under the public and semi public use will be considered to be included in the adjacent zone as per proposed land use map. In these cases, each case has to be studied individually and concurrence of the Town Planner shall be obtained.

**31.2.20.** The area reserved for park and open space at Edakkalamattom, Industrial zone at Thevarupara, Transport promotion zone at Kaduvamoozhy and Proposed transportation zone near MES junction on Wagamon road shall be reserved for the purpose for a period of 5 years only. If the responsible authority could not develop the land for above said purpose within a period of 5 years from the date of sanctioning of the plan, the zoning regulation may be treated as for the uses indicated in the Existing land use map ( GLS- 1 map).

**31.2.21.** Large Scale development proposals in an area not less than 2 hectares, exceeding an investment of Rs.50 crores, which provide direct employment (after commissioning of the project) to the tune of not less than 500 may be permitted in all zones other than Park & Open space, Major government Institution and Higher education and Research Centers may be permitted in all zones except following zones namely park and open spaces zones, water body and green strips provided on either side of rivers if not already included under 'uses permitted' or 'uses restricted' category as per these regulations, subject to the satisfaction of relevant Acts and rules in force and also subject to the recommendation of a committee to be constituted by the Government for this purpose, under the chairmanship of the Secretary, Local Self Government Department, consisting of the Chief Town Planner of Kerala State Town and Country Planning Department, the Town Planner, District office of the Kerala State Town and Country Planning Department Kottayam, the Secretary, Erattupetta Municipality and satisfying the following conditions. The Chief town planner will be the Convener of the Committee.

- i. The developer shall produce project-cum-feasibility report and Environmental Impact Assessment Report, if required, of the project to the convener of the committee, 15 days in advance of the committee meeting.

- ii. The developer shall produce before the committee all required clearances from the State and Central Government agencies concerned.
- iii. Adequate provision shall be made for supporting infrastructure such as parking, water supply, sewerage, solid waste management etc. Separate sewage treatment plant and solid waste management measures shall be provided and maintained by the developer at his cost.
- iv. Adequate MOU between the developer and the Secretary Erattupetta Municipality shall be undertaken to bring this into effect.
- v. The permissible FAR shall be maximum of 2.00 or as permitted in the Building Rules whichever is less and minimum access width shall be 12.00m.
- vi. The project shall be completed within a period of 3 years if not specified otherwise.

# **ANNEXURES**





ANNEXURE- I

**TYPE OF NON-OBNOXIOUS AND NON-NUISANCE TYPE OF SERVICE OR LIGHT INDUSTRIES**

1. Apparel making.
2. Aerated water and fruit beverages
3. Assembly of bicycles, baby carriage and other small non-motorised vehicles.
4. Atta-chakkies.
5. Bakery products, biscuit confectionery.
6. Bamboo and cane products (only dry operations)
7. Block making for printing.
8. Cardboard or corrugated box and paper products (Paper or pulp manufacturing excluded)
9. Carpet weaving.
10. Cement blocks, paving tile units
11. Chilling plants and cold storage.
12. Cotton and woollen hosiery.
13. Electronic equipment, electrical goods.
14. Fountain pen making.
15. Flour mills.
16. Furniture making without machinery.
17. Garments stitching, tailoring.
18. Gold and Silver smithy.
19. Gold and Silver thread sari works.
20. Ground nut decorticating (Dry).
21. Ice-cream or Ice making.
22. Insulation and other coated papers (Paper or pulp manufacturing excluded).
23. Jobbing and machining.
24. Leather footwear and leather products excluding tanning and hide processing.

25. Manufacture of formulated synthetic detergent products.
26. Manufacture of soaps involving process without generation of trade effluent (saponification of fats and fatty acids only)
27. Medical and surgical instruments.
28. Manufacture of mineralised water.
29. Musical instruments manufacturing.
30. Oil ginning/expelling (no hydrogenation/refining)
31. Manufacture of Optical-frames.
32. Paint (by mixing process only)
33. Manufacture of Paper pins and U-clips.
34. Power looms/handlooms (without dyeing and bleaching).
35. Printing press.
36. Radio assembling.
37. Rice mullers.
38. Manufacture of Rope (cotton and plastic)
39. Scientific and mathematical instruments.
40. Shoelace manufacturing.
41. Sports goods manufacturing.
42. Steeping and processing of grains.
43. Thermometer making.
44. Toys making.
45. Spice grinding operation.
46. Furniture without machinery.
47. Electro plating.
48. Gold and Silver smithing.
49. Rubber goods industry (Micro and Tiny units only)