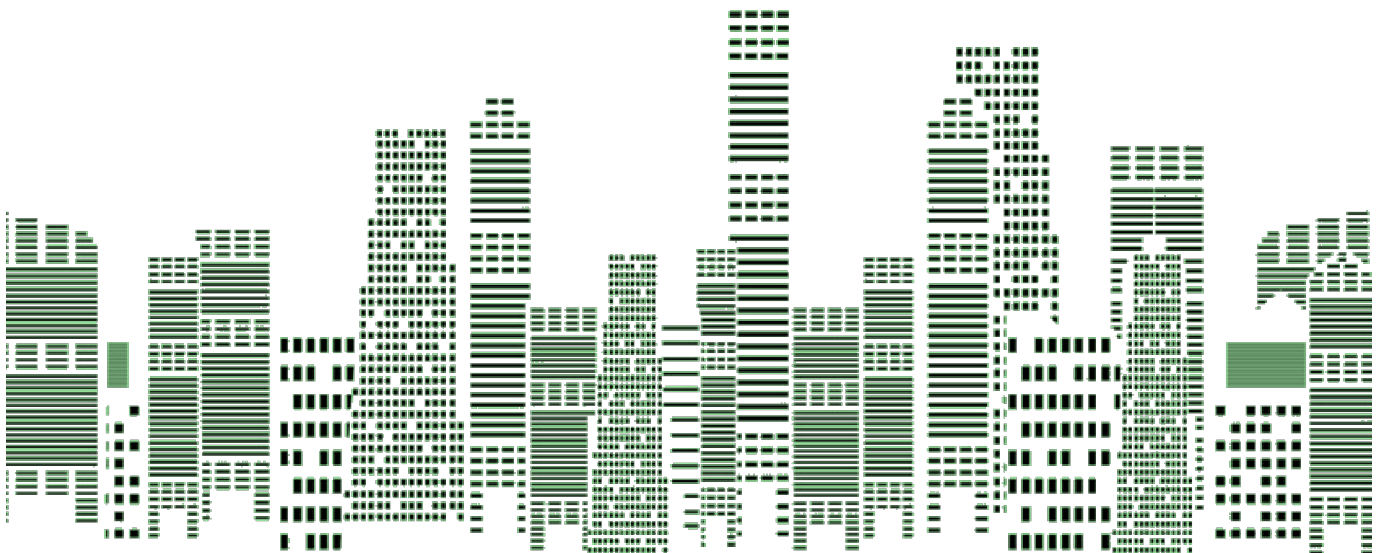


PART II
DEVELOPMENT
VISION



CHAPTER 25

SUMMARY OF ANALYSIS & REGIONAL LINKAGE

Kannur Municipal Corporation area has great significance as an administrative district centre with higher commercial, educational and tourism potential. The problems and potential of each and every sector in the planning area has been sorted out.

The study and analysis part in the Master Plan is broadly classified into two, spatial analysis and sectoral analysis. The spatial analysis includes the study on regional settings, demography, occupational structure and existing land use. Sectoral analysis deals with the detailed study of each development sector identified within the planning area. Detailed summary and findings of study and analysis are described in this chapter.

25.1 MAJOR FINDINGS OF SPATIAL ANALYSIS

Regional study, demography, work force and existing land use are the various factors considered in spatial analysis. The major findings obtained from spatial analysis are given below.

25.1.1 REGIONAL STUDY

Kannur Municipal Corporation constitutes an area of 78.38 sq.km. area and with 8 villages and 26 Desoms. The planning area is surrounded by 8 Panchayaths and Kannur Cantonment. There are two rivers flowing through the Corporation area namely Kattampally River (Varamkadavu and Pullooppikadavu) and Kanampuzha. Kattampally River also known as Munderipuzha is a tributary of Valapatanam River and flows through the northern border of the planning area and Kanampuzha River flows inside it. Thottadapuzha, Ayyarathpuzha (Nadalpuzha) are other minor rivers.

Kannur Corporation area is easily accessible by road, rail and air. The National Highway-66 (NH 66) connects the two major cities Kozhikode and Mangalore with Kannur. State Highway-38 (SH 38) starts from Thazhe Chovva. Kannur Railway Station in Kannur district is a major railway station located inside the planning area. Moreover, Kannur International Airport is located 30 km away from the core town area. Commercial activities are mainly

concentrated at Caltex, Old Bus stand, New Bus stand, Railway Station and Thana area.

25.1.2 DEMOGRAPHY

As per census 2011, the population of Kannur Corporation area is 2,32,486, which was about 2,26,435 during 2001 census. Chalad, Udhayamkunnu, Thulichery, Kakkad North, Varam, Pallipram, Valiyanoor, Chelora, Macheri, Kappad, Thilanoor, Arakkal, Kuruva, Adhikadalayi and Thottada are the wards having a population range of 4500 to 5000. Growth rate during last decade is 2.67% which is lower when compared to District and State. Population density of the planning area is 2967 persons per sq.km. Sex ratio and Child sex ratio are 1171 and 963 respectively whereas the literacy rate is 96.55%. Projected population for the year 2041 is 2,54,946.

25.1.3 OCCUPATION

As per 2011 census, the Work Participation Rate in Kannur municipal Corporation area is 28.91%, which is very low when compared to District and State values. The planning area ranks sixth position in Work Participation Rate among the six Corporation areas in Kerala and eighth position among ten urban local bodies in Kannur district.

The female WPR in Kannur Corporation area is 13%. Comparing

the census data, number of main workers is high which indicates that peoples are engaged in service or productive economic sectors throughout the year whereas the workers involved in primary sector is less. Also, the contribution of other workers increases across decades.

25.1.4 EXISTING LAND USE

The study of existing land use in Kannur Corporation area reveals that the major portion of the area is occupied by residential use. The second highest land use is dry agriculture areas. The paddy activities are mainly concentrated in the north - eastern and eastern parts while the dry agriculture is more prominent in eastern part.

The Corporation area is blessed with three major rivers and two minor rivers which enhances agricultural activities to a large extent. Non agricultural activities including residential, commercial, public and semi public, industrial land use are mainly concentrated in the middle portion along the major corridors.

25.2 MAJOR FINDINGS OF SECTORAL ANALYSIS

Based on the function, development sectors are mainly grouped into three categories as sectors of economy, sectors of physical infrastructure and sectors of social infrastructure.

25.2.1 SECTORS OF ECONOMY

• Agriculture

In Kannur Corporation area, from the land use analysis, it is clear that about 19.7% of total area is used for dry agricultural purpose and 3.74% of total area is used for paddy cultivation. It is also found that agriculture cannot be promoted as a key sector because the area has already shifted from agriculture to non agriculture activities and the extent of land available for agriculture use in the planning area limit is less.

• Animal Husbandry

Animal Husbandry is a weak sector in the Corporation area though there exists a considerable demand for milk, meat and egg. Increasing urbanization activities has reduced the availability of fodder and the increased cost of feed which in turn makes cattle rearing a non profitable activity for small scale farmers. One slaughter house is located within the Corporation area. However, the development of animal husbandry sector in future will be promoted because of availability of infrastructure facilities such as Veterinary hospital, Disease Diagnostic Laboratory etc. Animal Husbandry activities are suitable to the semi urban and rural wards.

• Fisheries

Western boundary of planning area completely falls in coastal stretch. Hence fishing sector is highly important in the planning area. Large numbers of fishermen families reside in Arakkal, Thayyil, City, Ayikkara and Vethilapally. Considerable extent of Kattambally River at Pulluppi kadavu provides potential for inland fishing activities. Currently fisheries and its allied activities are less in planning area limit. Availability of water resources offers huge potential for fishing activities in future.

• Industries

Kannur Corporation area is an industrially backward area in the district. There are only three large scale industries. The industrial activities are minimum in the planning area (0.578 km²). Kerala State Handloom Development Corporation Limited, Cannanore Co-operative Spinning Mills Limited and Milma are the large scale industries. There are no medium scale industries which indicate the backwardness in medium industries. The soil, climate, availability of water, harbour, transportation connectivity like road, rail, air, inland water transport etc. are the enormous potentials of the planning area in industrial sector. Also, there is a potential for the development of micro enterprises like agro and food processing units,

garments, embroidery unit, paper industries and automobile engineering units etc. The traditional industry in the planning area shows a declining trend.

Some industries of handloom and cotton textiles, timber and plywood, milma, fibre foam, splints and veneers, bricks and tiles, beedi and cigarette, coir etc. are set up in and around the Corporation area. Thottada has very recently harboured many automobile ventures of various companies. One of the issues the production sectors mainly face is lack of experienced labourers. The mini industrial estate at Marakkarkandy and Edakkad can be developed into a major industrial area.

• Trade and Commerce

Kannur Corporation area is the district headquarters, which indicates its commercial importance. Commercial centres are concentrated in the central area of the planning area. Narrow roads and lack of parking areas are the main issues in here which prevents smooth manoeuvring of vehicles causing frequent traffic block and also lack of basic infrastructure facilities.

The important markets in the Corporation are Ayikkara fish market, South Bazar, Central market, Vaaram fish market and Kakkad. The maintenance of the markets is not done properly.

There are no organized clusters of informal sector units in the planning area. The increased number of informal sector and the lack of sufficient public comfort stations are other issues faced by the planning area. The location of stationery units is not uniform and should be ensured that such activities shall not be concentrated in single location.

Since the major commercial nodes have easy access from bus terminals, functioning of weekly markets will be very useful for the people as well as the farmers. Establishment of more comfort stations and ensuring of their regular maintenance by the authority at every major commercial centre will be effective for making the Corporation area healthy as well as hygienic.

• Tourism, Culture and Heritage

The name of Kannur has been marked in the modern history of Kerala for its vast array of heritage buildings and its most enticing culinary culture. The Corporation has immense potential for development of tourism sector with a clean and beautiful environment. Kannur city is a sandy strip of land interlocked with beaches and estuaries. There is a scope for a boating service through Varamkadavu, Pullooppikadavu and Munderikadavu. Due to the presence of bird sanctuary at munderikadavu, it can be enhanced as a tourist spot.

There are some environmentally sensitive areas having reasonable amount of mangroves like Kanampuzha and Thavakkara South. Conservation of these areas is very important.

Since Kannur has a potential of cultural tourism due to “Theyyam”, the seasonal scope of that can be utilised especially by foreigners. The traditional medical treatment facilities can be rejuvenated and be introduced there by promoting health tourism within the planning area. The proximity of the new International Airport will be very helpful to attract the foreigners.

Even though St. Angelo’s fort, light house, Payyambalam beach, Baby beach etc. are almost very close to the town, the accessibility to these places are very difficult and also the road conditions are very poor. Thus tourism circuits need to be developed by connecting the various tourist destinations of Kannur District as well.

25.2.2 SECTORS OF PHYSICAL INFRASTRUCTURE

• Traffic and Transportation

Kannur Corporation is the district headquarters and important trade, commerce and tourist centre of Kannur District. Hence the traffic and transportation sector has great significance in the development of the

study area as it can promote all other production sectors by providing smooth accessibility and connectivity. In the study area, the present value V/C ratio for most of the road sections of National Highway 66 is greater than one indicating that the volume of traffic has already exceeded the road capacity. Traffic congestion is observed in the stretch of NH 66, Mele Chovva to Mattannur road and Gandhi circle to Railway station which can be controlled by introducing traffic control/signal system as well as widened roads. The water logging issues in the study area can be solved by the introduction of scientific drainage system.

There are footpaths in almost all major roads, but pedestrian crossings are not arranged properly. The goods traffic in the market centres is the most neglected one. Insufficient loading and unloading facilities, terminal facilities, provision for taxi stand, truck terminal, organised parking centres or plazas, connectivity of missing links and proper circulation pattern for the traffic are the important needs of the town. The existing Railway station which is the important one in the district, the high potential of Kannur International Airport, proposed inland water network all together will promote trade and commercial activities of the town and will reflect in all production sectors.

The improvement and maintenance

of existing roads and the construction of new roads will enhance the trade and commercial activities, tourism, industries, education, health, etc. of the study area.

• Water Supply

In Kannur Corporation, ground water is the principal source of water for domestic use. The remaining population mainly depends on Kerala Water Authority. The major source of public water supply in Kannur Corporation is the Valappatanm River and Pazhassi reservoir. But the existing water supply network in Kannur Corporation is insufficient. In addition to this the antiquated network system causes leakage of water and affects the quality of water available. The continuous checking of the old pipe network connections is to be done to avoid leakage as they affect the quality of available water as well as the efficiency of the existing water supply network which can also lead to scarcity. The tanker lorry supply is to be increased to higher regions as well as places where water scarcity is affected due to salinity which can control most of the drinking water issues in study area. Proper ground water storage facilities, well water recharging, renovations of ponds or other natural bodies should be done.

Under AMRUT scheme, there are many proposals like rehabilitation of existing old network, valves, house

service connection and inter connections with existing lines and providing flow metres etc. including road reformation charges which all may increase the per capita supply from 90 LPCD to 150 LPCD, enhancement of treatment plant from 30 MLD to 40 MLD including modernisation of existing treatment plant which may result in increasing the per capita supply from 90 LPCD to 100 LPCD, laying of gravity main from JICA project at Mangattuparamba to Pallikkunnu OHSR of capacity 24 LL for Pallikkunnu and Puzhathi providing house connection and inter connection with existing line, laying Conveyance main/pumping main from Melechovva to OHSR at Edakkad including supply erection of pump sets, construction of a 14 LL Capacity OHSR at Thottada of Edakkad Zone, laying of new distribution line and providing new service connections at Elayavor and Edakkad Zones etc. These projects will be very effective to meet the future demand.

• Drainage, Sewerage and Solid Waste Management

Kannur Corporation is blessed with three major and two minor rivers and the physiographic conditions are good for drainage as the low lying areas are mainly located along the water bodies. But proper maintenance of existing drains in the study area is neglected. Hence the urban storm water drainage

collection and conveyance systems have to be designed in such a way that flooding is avoided and transportation is not adversely affected. It is a proven fact that there should be a good drainage system for roads and it will certainly improve the durability of such roads. The unwanted land use conversions should be strictly prohibited as they adversely affect the storm water drainage.

There are no sewage treatment plants in the Corporation. Lack of sufficient comfort stations makes the study area unhygienic. In areas like Padanna, Anakkulam and Manjappalam, the ground water is found polluted due to the infiltration of wastewater. The newly proposed Sewage Treatment Plant near Padannapalam only covers wards of Thalikkavu and Kanathoor. Hence it is necessary to cover all the wards and for that more Sewage Treatment Plants are to be constructed.

The available waste collection facilities are not covered for all the wards. Hence decentralised waste management system in all the Corporation wards is to be initiated. Localized collection and processing techniques need to be introduced. Thumboormuzhi model of waste treatment plant can be implemented in every ward. To treat bio degradable wastes, ring compost or pipe compost bin can be provided. The efficiency of the existing treatment facilities like MRF at Chelora is to be ensured. A

Waste to Energy Plant is proposed at Chelora as state government's initiative.

• **Energy**

The power supply is done through 6 substations under 7 sections. Among the 5 substations, three 110KV substations and three 33KV substation exist. One of the substations is outside the Corporation boundary (Azhikode 110 KV). As per planning standard, there is no shortage in the case of 110KV substations, petrol pumps and LPG godown/gas godowns. The proposed waste to energy plant at Chelora under the State government's initiative to set up waste-to-energy plants in seven districts will be a great achievement for the Corporation. The use of non-conventional energy did not have much popularity and thus the use is very minimal. There is only one electric charging station in the study area. Some residential occupancy is using biogas plants as cooking gas.

25.2.3 SECTORS OF SOCIAL INFRASTRUCTURE

• **Education**

Kannur Corporation has great potential regarding education sector. Various educational institutions within the study area include Kannur University along with 6 Arts and Science Colleges, 1 Polytechnic, 2

ITI/ITC, 5 other Professional Colleges including TTI, Handloom Technology Institute, Craft Institute, 5 nursing and Paramedical Institutions are there in the Corporation. The Thottada area can be developed as an educational hub as it contains so many educational institutions.

Based on planning standards, the existing number of educational institutions like primary school, senior secondary school are adequate. Schools for physically challenged, Engineering College and Medical College etc. are not there in the study area. However, these facilities are available in the adjacent Panchayaths.

• Health

Under Corporation, five primary health centres, one urban primary health centre, five government ayurveda dispensaries, five government homeo dispensaries are there. District Ayurveda hospital at Thana and District Homeo hospital at South Bazar exist within the Corporation boundary. The basic infrastructure of the government dispensaries and PHCs are not up to the needs which should be improved. Kannur District Hospital is located in the Cantonment area, which is very close to the Corporation boundary.

The child death, maternal death and neonatal death during 2017 - 2018 shows that even some part of the Corporation area faces lack of

sufficient healthcare facilities and lack of nutritious food. Thus it is to be ensured that the facilities are getting for all categories.

The presence of waterborne diseases like Diarrhoea, Jaundice and Typhoid indicates the unavailability of safe drinking water in hotels as well as institutions. Hence city sanitation is an important fact in enhancing the health sector of the planning area. Apart from waterborne diseases, life style diseases are also increasing in the Corporation area. Thus new interventions are required to bring the people who are suffering from such life style diseases under medical care. Cancer is another major disease that affects all sections of human population. So apart from Kannur Medical College, Malabar Cancer Research Centre at Thalassery, a specialised cancer centre provides treatment for cancer not just for the Corporation area, but even for the entire state and beyond.

Establishment of new rehabilitation centres will be more useful in the future to provide isolation facilities for fighting against Pandemics like COVID-19.

• Housing

The household size in the Corporation is 4.75. Higher household size value is seen in Kannur zone followed by Puzhathi zone. The lower values in some zones are due to the

out migration in search of job whereas that of higher values is due to the existence of joint family system in the planning area. About 89% of the people are having own land for houses and others still live on rent or other ways. From 2001 to 2011, the household size is decreasing which may create more housing demand in future. About 58% of the houses in the planning area are in good condition in terms of plinth area of building, type of building, number of storeys, construction materials used for wall, floor and roof etc. About 35% of the people are in moderate level of houses. The other 7% of people are living in dilapidated houses and huts which are not suitable for living.

The infrastructure facilities of slums and colonies shows a lot of inadequacies in terms of electricity, drinking water, hygienic latrine, street lights, community hall facilities, Kiosk facilities, Patanamuri(Study room) facilities etc. They should be improved.

• Recreation and Civic Amenities

At present, there are 57 community halls, 5 Police stations including 1 SP Office, 7 Post Offices in the Corporation area. The park and open space constitute about 32.186 Ha which is not upto the planning requirement. At present, one open air theatre which is in the Town Square and one open stage in Collectorate

Maidan are there. The open stage in the Payyambalam Park can be renovated so that it can be used for any cultural events especially in the evenings.

• Social Welfare

In Kannur Corporation area, 200 Anganwadies and 1107 Kudumbasree units are functioning very effectively. Kudumbashree units not only encourage women but also enhance the economic development of the planning area. The Anganwadis pose so many issues like lack of own land, infrastructure facilities like drinking water, compound wall, toilet, electric connection, gas connection, furniture, playground, playing equipments etc.

The percentages of SC and ST population are 4.88% and 0.39% respectively. The weaker section of the society often remains weak due to negligence by the authorities; hence all available schemes may be properly implemented and funds utilized for their uplift. There are 5 orphanages and 18 old age homes in the planning area which satisfies the planning standards.

• Environment

In Kannur Corporation area, there are so many ecologically sensitive areas. The environmental problems normally generated are related to the waste disposal, river encroachments and misuse of natural resources. The

natural drains and water bodies are required to be protected from being polluted by various causes. Unscientific use and disposal of plastic and other hazardous substances are to be taken care of with proper planning and strict regulations.

The conversion of paddy lands along Kanampuzha watershed has to be discouraged by adopting various measures by providing better infrastructure facilities to improve the cultivable area and productivity. Also, there is a potential for tourism development of Adikadalayi beach and Kanampuzha River. Walk ways can be constructed along the banks of River.

The eco sensitive areas need to be protected and conserved and necessary measures are to be taken by the Corporation authorities and environmental property agencies to protect these areas.

25.2.4 DISASTER MANAGEMENT

Disaster management strategies can effectively reduce the adverse effects and vulnerability at the time of natural hazards. The district level as well as Corporation area level study on various disasters indicates that the planning area comes under moderately safe zone. Based on that, some mitigation measures are recommended. Adopting these measures will be useful to reduce the severity of disaster due to natural as well as unexpected calamities

In the planning area, the major disasters affecting are flood and coastal hazards. Also, some slight as well as moderate drought prone wards are there. Fire and epidemics/pandemics are also seen in the Corporation area. Flood has affected Housing sector, Electricity sector, Agriculture and other production sectors. Majority of the new buildings were affected due to flood which is a serious concern that needs to be addressed.

The land use in the planning area is divided into two categories, risk zone I and risk zone II. The flood prone areas come under risk zone I area whereas coastal erosion prone areas under risk zone II. The delineation of these two categories are based on KSDMA, “Nammal Namukkai” reports.

Rescue shelters with multipurpose usage need to be proposed. There is a good road network connecting all the important identified rehabilitation centres within the planning area. Also, both the road networks as well as the rehabilitation centres are safe from flood. The rehabilitation centres should be for multipurpose usage with suitable infrastructure facilities like kitchen, toilets and bathrooms. Hence they can be used not only during natural calamities, but also for quarantine centres like DCC/CFLTC camps. Also, they can be used for the rehabilitation of destitutes too.

Land use regulations are necessary

to minimise the causalities caused by hazards. Construction of sea walls is the solution for coastal erosion related issues. The sustainable development of the Corporation area can be ensured which will be helpful for the conservation of ecosystem as well as nature which in turn will play a role in the reduction of natural calamities up to a limit.

25.2.5 LINKAGE OF DEVELOPMENT PARAMETERS OF SPATIAL AND SECTORAL ANALYSIS

The study of development sectors of Kannur Corporation area reveals that the core area and the stretch along the NH 66 have high built up, commercial, public and semi-public and residential land use. The wards with urban activity mainly include South Bazar, Thayatheru, Thana, Thalikkavu, Payyambalam, Ayikkara, Arakkal, Kakkad, Thulicheri, Talap, Chalad, Neerchal, Chovva, Mele However, the wards in the eastern and southern

periphery of the planning area have less built-up area but agricultural activities are above average. Agriculture predominant wards in the planning area include Thilanur, Elayavur South and Kunnavu. The SC/ST concentration is high in the zones of Kannur, Puzhathi and Chelora.

25.3 INFERENCE

The available spatial and sectoral assets of Kannur Corporation area indicates that the town has great potential regarding trade and commerce, tourism, education and industrial sector and hence requires optimum utilization. Also the planning area is the administrative centre of the district. Thus the planning interventions shall focus on identifying such potentials and linking those synergies to enable the city to function as a multi-functional city giving prior importance for the conservation of ecology, water bodies, wetlands and mangroves.

