GOVERNMENT OF KERALA
KERALA STATE PLANNING BOARD

FOURTEENTH FIVE-YEAR PLAN
(2022-2027)

WORKING GROUP ON
URBAN ISSUES

REPORT

DECENTRALISED PLANNING DIVISION
MARCH 2022

FOREWORD

Kerala is the only State in India to formulate and implement Five-Year Plans. The Government of Kerala believes that the planning process is important for promoting economic growth and ensuring social justice in the State. A significant feature of the process of formulation of Plans in the State is its participatory and inclusive nature.

In September 2021, the State Planning Board initiated a programme of consultation and discussion for the formulation of the 14th Five-Year Plan. The State Planning Board constituted 44 Working Groups, with more than 1200 members in order to gain expert opinion on a range of socio-economic issues pertinent to this Plan. The members of the Working Groups represented a wide spectrum of society and include scholars, administrators, social and political activists and other experts. Members of the Working Groups contributed their specialized knowledge in different sectors, best practices in the field, issues of concern, and future strategies required in these sectors. The Report of each Working Group reflects the collective views of the members of the Group and the content of each Report will contribute to the formulation of the 14th Five-Year Plan. Each Report has been finalised after several rounds of discussions and consultations held between September and December 2021.

This document is the Report of the Working Group on Urban Issues. The Co-Chairpersons of Working Group were Sri. M. Anilkumar, Mayor, Kochi Corporation, and Smt. Saradha Muraleedharan IAS, Additional Chief Secretary, LSGD. Prof. Jiju.P.Alex, Member of the State Planning Board co-ordinated the activities of the Working Group. Smt. Josephine.J, Chief, Decentralised Planning Division was the Convener of the Working Group and Smt. Jaya Kumari.G Research Assistant, Decentralised Planning Division was Co-Convener. The terms of reference of the Working Group and its members are in Appendix I of the Report.

Member Secretary

PREFACE

For the last few decades the State of Kerala is experiencing a fast trend of Urbanisation with certain dominant physical features which pose challenges for the future Kerala. The whole of the geographical area of the State is endowed with natural assets like water and cultivable land which have influenced habitation anywhere through the mat of Kerala. On the other hand the State has very characteristic physical features like mountainous and forested Western Ghats, 44 rivers, backwaters and canals and low lying paddy fields, which not only characterize the State landscape but are also influencing factors of the State's climate and seasons. The urban content of the State's population is more that 50 percent now and it is estimated that the State may be more that 80 percent urban in two decades. The present nature of urbanisation phenomena characterized by low density urban sprawl and growth of urban agglomerations around major cities and towns, challenges the natural landscape features, most of which are ecologically sensitive and are giving the geographic and climatic endowments that the State had enjoyed for long. Unplanned and unguided urbanisation following the past trends may very adversely affect the environmental sustainability of the State.

Urbanisation per-se is a positive indicator of development provided we are able to capitalise on the positive economic benefits of urbanisation. It is well known that agglomeration and densification of economic activities (and habitations) in urban conglomerations stimulate economic efficiencies and provides more opportunities for earning livelihoods. Possibilities for entrepreneurship and employment increase when urban concentration takes place, in contrast to the dispersed and less diverse economic possibilities in rural areas. This enables faster inclusion of more people in the growth process and is therefore more inclusive. In order to bring in such dovetailing of economic development with urbanisation we need better urban planning and urban development. Urbanisation trend in Kerala, when suitably guided and strengthened, can be recognized as opportunities to promote economic growth.

Urban Planning parameters have gone through many new challenges now. The global concerns about climate change and sea level rise demand that our human settlements need to address these locally. Environmental issues like waste management, storm water management and natural disasters like floods, landslides and coastal erosion are not just problem solving approaches after disasters have struck, but that are to be tackled through planned mitigation measures.

In the above context, Kerala has to address the various urban issues to achieve sustainable development. The importance of discussing and resolving Urban Issues needs to be recognized and mid range solutions need to be sought during 2022-2027.

Sri. M. Anilkumar   Smt. Saradha Muraleedharan IAS
(Expert Co -Chairperson)   (Official Co -Chairperson)

CONTENTS

LIST OF FIGURES

EXECUTIVE SUMMARY

Kerala has been undergoing fast rate of urbanisation during the recent decades not only in term of population shifting to non-agricultural occupations, a criteria recognised by the Census of India, but also in terms of geographical land area of the state being transformed with urban characteristics. A noticeable feature of that in Kerala is the urbanisation of the area around major towns and cities forming Urban Agglomerations (census term). Challenge to such urbanisation is the low density sprawl engulfing farm lands and other environmentally sensitive land areas. The opportunity in the urbanisation, that the state experiences, is the economic development prospects that the urban areas offer. The policies and strategies for the next five years are aimed at tapping the employment and economic opportunities and at the same time proposing actions that may be required to attain sustainable development.

Kerala being a 'land scarce' geographical region endowed with three linear strips of land forms, viz. coastal plains, fertile midland hills and valleys and the mountainous resource rich high land. These geographical features regulate the monsoons, water availability, soil fertility and the climatic features. It is unwise to indiscriminately alter the landscape for construction purposes and for quarrying sand and rocks. This requires that Kerala should definitely have high regard for landscape features and for conservation of these. Urban Planning and Urban Development need to be environmentally sensitive, but at the same time provide housing, employment opportunities and supporting utilities and services for the people.

The FYP proposes that:
- All Cities and Towns shall have guided development through Master Plans prepared with long term development vision;
- Since cities like Thiruvananthapuram and Kochi have larger urban spread going beyond the administrative city boundaries, it is necessary that Master Plans be prepared for the individual LSG constituent areas of these Urban Agglomerations based on Metropolitan Regional Development Plans prepared for the UAs. To facilitate preparation of such Regional Development Plans for Thiruvananthapuram and Kochi city regions, which have more than one million population, Metropolitan Planning Authorities (MPCs) as provided for in the 74th CAA and the Kerala Municipality Act, 1994 may be constituted for Thiruvananthapuram and Kochi city regions;
- Master Plans for the cities and major towns shall propose densification of existing urban areas in order to free land for more people for housing and other facilities. Such an approach may retard the process of conversion of agricultural and wetlands around the cities and major towns for urban uses.
- Master Plans for the identified hazard prone areas shall necessarily have "Risk Informed Master Plans'.

Solid waste management has assumed high importance in urban development. The state pursues implementation of many options for waste management – both solid waste

management and liquid waste management. However, these solutions have spatial implications which need to be addressed in the Spatial Development Plans. Environmental Planning, in general, has to guide urban land use planning and urban infrastructure planning. One of major aspects contributing to Climate Change is transportation and use of fossil fuels. Land use planning in the major cities shall aim at reducing intra-city travels by prudent location of economic and social facilities in the proximity of residential uses, which may eventually reduce the need for travels across the length and breadth of the city to avail of various facilities. Major cities like Barcelona in Spain have demonstrated the usefulness of decentralized facility planning.

Spatial Planning is totally dependent on data, which is produced by various government departments, parastatals, private organizations and research institutions. In the absence of a single data storage facility, sharing of data rarely takes place. In the absence of storage in data banks even within individual organizations, the valuable data is lost irrecoverably. Many often we also see replication of data collection work by more than one government organization, amounting to wasteful expenditure. The most important data required for Spatial Planning is geographical maps of the planning area. Though Geographical Information System (GIS) is used by the planning and infrastructure development professionals in the State, geographical mapping itself has to undergo modernization since we need to integrate the actions of the State Survey and Land Records Department, Department of Registration, the LSGD and the other Infrastructure Development agencies. Cadastral maps prepared by the Land Survey Department should also capture contours and building features since the modern electronic survey equipments are cable of such land surveys. Digitised maps need to be made accessible to the planning and infrastructure development authorities.

Urban renewal, revitalization of the old city areas, conservation and modernization of urban infrastructure have received a boost with the centrally sponsored schemes like JnNURM and AMRUT, the state implemented Kerala Sustainable Urban Development Project (KSUDP) funded by the ADB and the Water Supply Improvement Scheme funded by the JBIC. The planning and infrastructure development professionals are also trained in the process. HRD in such modern methods need to be stepped up.

Kerala has made substantial progress in 'housing for all'. However, we have still to attain self-sufficiency in housing for the poor. With PMAY and LIFE attempts are made to close this gap soon. Major cities have special housing needs like housing for the aged, rental housing for officials and professionals who are temporarily serving in major cities/towns, short stay homes etc. Such housing needs shall be assessed through city wise studies and shall be provided for by the ULBs and the state housing agencies. PPP in such housing also need to be explored.

Street vending obstructs movement of vehicles and pedestrians in our cities and towns. Street side eateries not only are unhygienic in terms of food served but are also major pollutants. Such informal sector vending practices cannot be done away with since a large section of population find economic activities in these informal trades. ULBs shall prepare Master Plans to relocate such street vendors through appropriate strategies. Many World Cities

have shown examples in dealing with street vending practices. ULBs have also to give more importance for local economic development through creation of hassle free opportunities for establishing small production and trading establishments.

It is also proposed that Urban Governance shall go through substantial changes through multi pronged strategies which include E-Governance, Participatory Urban Governance effectively utilizing ward committees/sabhas and subject-wise expert advisory groups constituted within the ULBs, and PPP. Human resource development programmes for both the elected representatives and the officials are emphasised to modernize the governance system and to move forward to a new governance regime.

Strategy of the Group

The Group held meetings to discuss the various aspects included in the term of reference to suggest measures to be taken by the State during the Fourteenth Plan period. In order to give emphasis on the various issues, subject wise sub groups were formed as shown below:

Sl. No.	Name of Sub group	Members
1	Urbanisation	Sri M. Anil Kumar Sri H. Prasanth (Convenor) Sri A. Kasturi Rangan Sri Jaigopal Govind Rao Sri Rajesh P N Smt. Riby Rachael Mathew
2	Spatial Planning	Sri M. Anil Kumar Sri Mir Mohammed Ali, IAS Sri H. Prasanth (Convenor) Prof. Dr. Bejene Kothari Prof. Dr. Annie John Dr. Ajith Kalliyath Sri Rajesh P N Smt. Sukanya Sri A. Kasturi Rangan
3	Urban Development	Dr. Beena Philip Sri M. Krishna Das Smt. Seetha Raveendran Prof. Dr. Annie John Sri A L Charles Prof. Dr. Bejene Kothari (Convenor) Sri C. P. Pramod Kumar Smt. Riby Rachael Mathew

4	Housing	Sri M. Krishna Das Sri Jaigopal Govinda Rao Prof. Dr. Annie John Sri A. KasturiRangan (Convenor)
5	Waste Management & Role of ULBs	Sri. Mir Mohammed Ali, IAS (Convenor) Sri A L Charles Dr. R. Ajayakumar Varma Sri P. Kesavan Nair Sri Jaigopal Govinda Rao Sri P. D. Philip Sri Renju R Pillai Smt. Resmi P S Sri Aravindan Nagaraj
6	Socio-Economic Development	Sri Mir Mohammed Ali, IAS Dr. Ajith Kaliyath (Convenor) Prof. Dr.Bejene Kothari Dr. Rahul N Smt. Sukanya
7	Local Economic Development	Smt. Seetha Raveendran Sri M Krishna Das Dr. Ajayakumar Varma Sri C.P. Pramod Kumar Sri A. Kasturi.Rangan (Convenor)
8	Urban Governance	Sri M. Anil Kumar Dr. Renu Raj IAS Sri P N Rajesh Dr. Ajith Kaliyath Sri A. Kasturi Rangan Sri V Manoj Kumar Sri Yacoub Z Kuruvila (Convenor) Smt. Riby Rachael Mathew

The report on URBAN ISSUES is prepared mostly based on the inputs given by the sub members of the sub groups. Chapterisation of the report has also been done in the above order of sub group recommendations

CHAPTER- I
URBANISATION

Urbanisation is reckoned as the transformation of a rural area to 'urban' and the growth trend by which human settlements turn 'urban'. The term 'urban' is universally recognised as concentration of people and concentration of non-agricultural activities. However, the definition of 'urban' varies from country to country. In India we have adopted the definition followed by the Census of India, which has not changed for the last four or five decades. Census of India defines urban based on three-fold criteria –

(i)   A human settlement having more than 5000 population;
(ii)   Population density in the settlement more than 400 persons per square kilometre; and
(iii) More than 75% of the male working population in the settlement engaged in no-agricultural occupations.

Apart from these criteria, the State government can declare any human settlement as 'urban' based on certain specified characteristics.

As far as the State is concerned, the first two criteria may be irrelevant since any rural settlement may have more than those specified. The third criteria of occupation mostly guide the Census of India in designating human settlements in Kerala as urban. Such areas are denoted as 'Census Urban' or 'Census Town'. All such areas denoted as Census Towns need not be Statutory Towns. Town become statutory towns assuming municipal status, when declared so by the State government. Such statutory towns, as per the Kerala Municipality Act of 1994, have elected Municipal Councils for urban governance. Though any municipal town having more than population of 100,000 may be referred as 'city', the term 'city' assumes legal status only when a large Municipal Town having a sizeable population is accorded statutory status as 'Municipal City' by the state Government. Such cities have urban governance function entrusted to elected Municipal City Corporations.

It is a known fact that Kerala is having scattered settlement pattern. The human settlement pattern of the State is characterized with dwellings made in individual plots, scattered all over the habitable area in low density sprawl. However, with population of 3.37 crores in 2011, Kerala had average population density of 860 persons per sq.km. With the estimated population growth to about 3.48 crores during 2021, the overall population density may increase. As the 2021 Census figures have not come, we may for the present context use the Census figures of 2011. The urban content of the population was 47.71 percent in 2011, and this was a quantum jump from the 2001 Census. The urban population of 1.593 crores is distributed in 5 Municipal Cities, 54 municipal towns, and 461 census towns and 16 out growths, which are still parts of gram panchayat areas. Together, it can be said that the urban population of the state is contained in 536 'urban' areas (2011 Census).

Kerala is undergoing high level of urbanisation without physical manifestation in tune to it, which is another peculiarity contradicting to the highest urbanised state of Tamil Nadu. When the 2011 census puts the urban content of Kerala at 47.71% with 2001 – 2011 decadal urban growth rate of 82.23%, the Census definition does not correlate urbanisation

with the physical urban growth. Rather than urbanisation in its true sense Kerala has witnessed 'low density urban spread'. Though higher urbanisation is associated with in-migration for rural and smaller urban areas, which lead to more and more concentration of peoples in cities, as seen in cities in the other states of India, this is not the main factor contributing to the urbanisation in the state.

The average population density of India as per 2011 census is 382 person per sq. km., whereas the average population density in Kerala at 859 persons per sq. km. is comparatively higher when compared with other States in India. The low population growth rate and comparatively higher population density are factors deciding the future growth of population of the State. It is also interesting to note that though we have a very high increase in the urbanization, the urban population density has declined.

A significant finding of the urbanisation trend in Kerala is the growth of Urban Agglomeration. An Urban Agglomeration (UA) as per the Census is a continuous urban spread constituting a town/city and its adjoining Urban Outgrowths (OGs) or two or more physical contiguous towns together and any adjoining urban out growths of such towns. One of the constituent towns of an urban agglomeration should necessarily be a statutory town and the total population of all the constituents should not be less than 20,000.

As per census 2011, Kerala is having 19 UAs. namely Thiruvananthapuram, Kollam, Kochi, Thrissur, Kozhikode, Kannur, (each of which, as of now has a Municipal Corporation within the UA area) and Alappuzha, Kayamkulam, Cherthala, Changanasserry, Kottayam, Kothamangalam, Chalakkudy, Palakkad, Chittoor-Thathamangalam, Ottappalam, Malappuram, Kanhangad, and Kasargod (all of which have municipal towns as their mother towns within the respective Urban Agglomeration areas).

Land Utilisation Issues resulting from the present trend of Urbanisation
When UAs (Urban Agglomerations) elsewhere in India have population densities in the range of 12000-24000 persons per sq. km., UAs in Kerala have just 2000-7000 persons / sq.km. Even Cities have low density compared to major cities elsewhere in India. This can be attributed to low density sprawl, which consumes more land area. In effect the urban sprawl in Kerala is the result of the scattered homestead development, rural urban continuum and the better infrastructure scenario in the state, irrespective of an area being urban or rural. Habitable slopes have made lowland and midland more acceptable for settlement development. Though this scattered development pattern has contributed to provision of better infrastructure throughout the state and attributed to many improved social development indices, it results in conversion of agricultural land and ecologically sensitive areas for human habitation and construction uses. This happens when the statutory cities and towns have relatively low density and their population growth rates are low. Hence, it becomes highly essential to aim at compact cities, by improving the existing infrastructure in the major urban areas and facilitating creation of more job opportunities within the cities and major towns. This may necessitate new Urban Development Policy and emphasis on Local Economic Development (LED) focused in the cities and major district headquarters towns. State Urbanization scenarios have to be studied and appropriate 'Guided Urbanisation Strategies' have to be adopted.

Urbanisation and Economic Development

Urbanisation and Economic Development are correlated. Urbanisation has been considered for long in developed countries as a concomitant factor of industrialisation. However, urbanisation in developing countries, like India, has been observed to be dependent on trade and commerce and service sectors. The contribution of urban areas to GDP in India has been studied to be of the order of more than 70 percent. Planned urbanisation offers a colossal opportunity for India's development in the coming decades. It is well known that agglomeration and densification of economic activities (and habitations) in urban conglomerations stimulate economic efficiencies and provides more opportunities for earning livelihoods. Possibilities for entrepreneurship and employment increase when urban concentration takes place, in contrast to the dispersed and less diverse economic possibilities in rural areas. This enables faster inclusion of more people in the growth process and is therefore more inclusive.

Urbanisation trend in Kerala, when suitably guided and strengthened, can be recognized as opportunities to promote economic growth. Agglomeration of secondary and tertiary activities in cities leads to density and spatial contiguity. Firms gain from economies of scale, scope, and complexity. Workers benefit from variety of opportunities, human capital accumulation, knowledge development and knowledge spill overs, and varied consumption opportunities. Both firms and workers benefit from such agglomerations. Concentration of economic activities in city regions involves forward and backward linkages in formal and informal sectors. The informal economies in city regions provide employment to large numbers at the bottom of the pyramid, including migrant labourers.

(Ref: P.K. Mohanty, CITIES AND PUBLIC POLICY, An Urban Agenda for India, Sage Publications India Pvt. Ltd., New Delhi, 2014)

Local economic development (LED) has been the thrust of development in the utilization of Plan Funds devolved by the state government to the LSGs. However, ULBs have not shown remarkable and replicable project ideas towards improving local economy and creation of jobs. Though it is true that many ULBs have been able to provide new skill acquisition opportunities for the youth, it is not yet studied as to what extent the newly acquired skills have been used by the trained youth in self-employment or securing employment. During the fourteenth five year plan period, ULBs can focus on new ideas on LED. The state may provide required guidelines and orientation to the ULBs towards this.

Need for Conservation of Rural Areas, Rural Characteristics and Agricultural Areas

As noted above, the present accelerated growth of urbanisation in Kerala as witnessed during the last four decades has caused low density sprawl, which puts stress on infrastructure expansion without proportionate fiscal returns, depletion of agricultural land, destruction of natural environmental features and conversion of wetlands and water bodies. Geographically lying between the Western Ghats and the sea, Kerala is an ecologically sensitive land. Moreover, Kerala is a 'land constrained' state with limited availability of land (only 38,863 sq.km.) accommodating 3.50 crores of population which escalates pressure on land. After conserving the forest land, wetlands, fertile agricultural fields, water bodies

and ecologically fragile land in the identified hazard prone areas, Kerala may have much less land for human habitation and construction purposes. Moreover, the recurrent occurrence of the recent phenomena of natural disasters and the global concern for Climate Change, necessitate that we plan for optimum utilization of our land resources. This demands that the state of Kerala prepares State Land Utilisation Map leading to State Land Utilisation Plan and declaration of enforceable state level strategies for utilization and conservation of our scarce land resources.

Planning for the Urban Agglomerations
(i) Spatial Priority Urban Region (SPUR)
During 1974-75, the National Commission on Urbanisation (NCU) constituted by Government of India with the late celebrated architect Charles Correa as Chairman studied urbanisation issues in India and the NCU Report contained many commendable recommendations. The NCU had identified Kochi – Thrissur as 'Spatial Priority Urban Region' (SPUR) and recommended that this linear region may grow into a contiguous urban region, requiring planned spatial development strategies. Time has proved that indeed such a corridor urbanisation did take place, though we may contribute this development to the establishment of airport or development sprawl of Kochi urban region. An additional impetus for development of this corridor now is the state government's intention to develop Kochi – Salem industrial corridor, which may necessitate planned development strategies for the Kochi – Thrissur – Palakkad corridor and the urban nodes in this corridor to trigger of develop of manufacturing and service industries hub along these corridor. Strategic Development Plan for identifying development strengths and opportunities along this corridor, to strengthen infrastructure required in specific identified nodes based on their nature of development, land utilization strategies, strategies for human resource development in the corridor region and strategies for attracting private sector investments in the development corridor would be key focus areas for preparing the Spatial Development Plan for this Kochi – Thrissur priority region in the first phase and Thrissur – Palakkad spatial region in the second phase.

(ii) MPC for Planned Development of Urban Agglomerations
The present practice is to prepare Urban Development Plans (Master Plans) for the area of jurisdiction of the individual urban local bodies. The planning approach necessitates overall study of the region around the planning area to understand the specific urban area's context within the immediate region. In this process, we do not capitalize on the development opportunities of the Urban Agglomeration (UA) within which the city/town/ or Gram Panchayat area is situated. Economics of urban areas state that the opportunities of agglomeration economies are high in UAs. These may not be studied and strategies formulated in a District Development Plan since the issues dealt with in the District Development Plan are different. Without preparing a comprehensive development plan and strategy for the UA as a whole, preparation and implementation of individual Master Plans for constituent units within the UA may be against all principles of planning and development of an urban region.

In this context, it would be appropriate that in this five year plan period, 2022-2027,

the state directs preparation of Structure Plan of potential UAs – in this case, concept of Metropolitan Area Plan as envisaged in the Act may also be thought of – enunciating the physical structure, social structure and economic structure –and each constituent unit within such area, may be a Municipal City Corporation, Municipal Town or Gram Panchayat, may prepare individual Master Plans to guide the development of areas of their jurisdiction.

The Chennai Metropolitan Regional Development Plan prepared gave development perspective of how the region should develop, which areas need be developed as Satellite Towns, which areas need be developed as Ring Town, what nature of ring roads need be developed, what would be the economic role of each of the urban nodes within the Metropolitan Region etc. Chennai City Master Plan prepared later follows the general development guidelines. The ring roads and the urban nodes in the region developed accordingly contribute to the holistic development of the metropolitan region and benefit from each other.

Kochi city does not grow in isolation. Individual administrative units like Maradu, Thripunithura, Thrikkakara, Kalamasserry, Aluva etc. are all part of Kochi region. Each of these towns has functional linkages with the main city and vice versa. Therefore it is necessary for planning the Kochi Urban Region. The 74th Constitution Amendment Act and the Kerala Municipality Act, 1994 provide for the constitution of Metropolitan Planning Committee for declared metropolitan areas. Thiruvananthapuram and Kochi urban regions already have more than ten lakhs population to qualify to be declared as metropolitan regions and constitution of MPCs for planning and development of these metropolises.

It is recommended that during this five year plan period the state may delineate metropolitan regions for Thiruvananthapuram, Kochi and Kozhikode, constitute Metropolitan Planning Committees for these three urban regions and issue required orders defining the roles and responsibilities of the MPCs so as to ensure healthy relationship between the individual LSGIs, DPC and the MPC.

(iii) Conservation of Land Resources

As stated above the present low density urban sprawl, as seen in the past trend of urbanisation in Kerala, if allowed to continue unchecked may consume quite some land resources for accommodating the physical development sprawl. This may cause extensive land use conversions which may include fill up of wetlands for construction purposes under the available exclusionary loopholes, filling up of water logged areas and flood basins if the same are not correctly designated as non-buildable areas in the revenue survey maps and land mutation and entitlement registers, alteration of landscapes/demolition of hillocks/removal of earth and flattening of terrain etc. if the revenue maps do not show these land features (revenue survey maps are two dimensional and do not show elevation of ground or other physical features of land) or construction in environmentally sensitive areas (including hazard prone areas) and heritage zones.

Since Kerala is a land scarce state, allowing unchecked urban sprawl may cause escalation of land values and since land market is operated by private sector, those belonging to low income categories may be pushed out of the private land market, denying access to land. Such a development is not inclusive and needs to be avoided by suitable state interventions like

strict land use controls especially in Urban Agglomerations, development and regulations in Urban Agglomeration based on Urban Land Use Plans and state/ULB sponsored land redevelopment plans including housing development plans/schemes based on inclusive strategies, which may accommodate land reservations for households in lower income categories.

Such conservation policies and regulations may also point towards densification of the present towns and cities. These are goals which the Spatial Development Plans for towns and cities may have to address.

(iv) Urbanisation induced Spatial Planning Decisions

The present urbanisation trend with urban population densities of just 4000 to 7000 persons per square kilometre even in major cities of the state, results in low density construction density with low rise structures. This type of development consumes more land per unit area of built up space. Moreover it is observed that larger urban central area plots are used for very low density development and that single family residential uses consume more land than is required.

These indicate that:

(a) Master Plans for the cities and major towns should aim at higher densities – both population densities and built up densities - through various planning techniques and methods

(b) Keeping vacant land parcels in the cities, especially in core areas, for speculative purposes may have to be discouraged by vacant land taxation;

(c) Planned development zones may be designated within the cities for high density developments with incentives such as pre-implemented planned higher order of infrastructure, faster mode of development permissions, tax incentives etc.

(d) Redevelopment of existing residentially built up areas for planned higher density green development

Providing opportunities for higher density development with inclusive development themes may accommodate more people within the major urban areas which may discourage people from urbanizing the peripheral areas around the cities and major towns. Combined with stricter controls on land use conversions in the outer peripheries may discourage people from developing peripheral areas. A major guided development tool could be planning the Urban Agglomerations where zoning regulations could provide for lower built densities (floor space index) for constructions outside the city / town boundaries, so that sensitive land uses can be conserved and peripheral densities can be regulated to be lower.

These are certain planning approaches to be considered for land use planning when preparing Spatial development Plans. However, these approaches need to be context based and so cannot be generalized.

Conclusion

Accepting the fact that Kerala is a land scarce state and that the western coastal areas, midland and the eastern hilly areas are susceptible to natural hazards of varied nature, the state has to have prudent planned approaches for land utilisation. This calls for preparation State Land Utilisation Plan to be considered urgently. Climate Change induced sea level

rise threatens many of our coastal area towns and cities. Studies show that certain parts of the existing coastal towns and cities may be submerged due to sea level rise. Conscious urban land use policies have to avoid further investments by way of building, road or other constructions and urban development activities in those areas which may suffer inundation by sea water within the next 20 -30 years. Similarly, LSGs of cities and towns with hazard prone areas, may plan for 'risk informed hazard resilient plans' for guiding development.

The state has to plan for the twin aims of conservation of our land resources and planning for guided development. Achievement of both these ideals may appear challenging but have to be aimed at for ensuring sustainable development and cashing in on the positive aspects of urbanisation since it is projected that the state may even achieve 80 percent urbanisation by the year 2050. This is both a challenge and opportunity. Success in reaping the benefits may depend on concerted efforts in guided urbanisation through planned strategies.

State Planning Board

CHAPTER -II
SPATIAL PLANNING

Urban Spatial Development Plan

We try to learn the level of developments achieved by the ancient civilizations and the functions undertaken by them from the layout of their settlements and the archaeological remains unearthed by the archaeologists. This means that activities in which human race engages in, the knowledge levels achieved by a society and the kind of functions the society engages in are all reflected in the physical developments in a human settlement. Most of the human actions have spatial implications. Understanding of the spatial context of all human actions and the interrelationships between the various functions and their spatial implications are interpreted in the spatial development plans. Spatial development plan for any urban area not only shapes the living and working environment within the urban settlement and tries to solve the problems faced presently in land use, amenities and infrastructure, but also anticipates the future requirements for the anticipated functions of the urban community and the infrastructure requirements for those functions and plans for the future. Viewed from this context Spatial Development Plans prepared as Master Plans for the urban areas are inevitable requirements for any urban community to guide the community towards future development. Master Plan proposes optimum use of land at the appropriate location for the appropriate use, and the infrastructure required to be provided to support that function/use at that location. Importance of Master Plans for the towns and cities of Kerala can be understood only by knowing the use of Master Plans to guide the development of the settlement.

In addition to the Spatial Perspective Plan for the state, Spatial development Plans are generally prepared at the following levels:

(i)   District Development Plan for the district to propose for the comprehensive development of the district comprising of urban and rural areas;

(ii) Master Plans for the human settlement level – urban or rural or sometimes for the town/city together with the immediate area around; and

(iii) Area Development Plans for areas identified as priority development areas within an urban or rural settlement – as Detailed Town Planning (DTP) Schemes – generally within the broad framework of the Master Plan, if already prepared.

Within the legal framework under the Kerala Town and Country Planning Act 2016 (as amended in 2021), Master Plans for 19 settlements (towns and cities) are currently in force as statutory documents. 24 Master Plans have been prepared and the draft Master Plans have been statutorily published and yet to be processed for final government approval. The works of preparation of draft Master Plans for the remaining towns are also in the anvil.

Government has ensured as per the Town and Country Planning Act that such Spatial Development Plans are prepared with democratic participation through the democratically elected statutory governance institutions. District Panning Committees arrange

for preparation o District Development Plans, Master Plans are prepared by the Gram Panchayat, Municipal Council or Municipal City Corporation, as the case may be, and Area Development Schemes (DTP Schemes) are prepared by the Local Self Government Institution (LSGI), in which the area of the DTP Scheme is located. In case Master Plan is to be prepared for a planning area comprised within more than one LSG area, the Act provides for constitution of 'Joint Town Planning Committee' with representatives from all the constituent LSGIs for causing preparation of Master Plan.

As a subscheme under the Centrally Sponsored Scheme of AMRUT (Atal Mission for Rejuvenation and Urban Transformation), GIS (Geographical Information System) based Master Plans are under preparation for 9 statutory urban areas (including for all the six cities). These Master Plans are prepared using satellite imageries and mapped with field verifications.

Master Plans have largely been used by the Urban Local Government in the past mainly as regulatory document to permit or deny any land development for any specified use. The development proposals and guidelines had not received adequate consideration since the required expertise was not available with the ULBs for interpretation of the Master Plan proposals and to identify and prioritise development projects.

Moreover, the earlier Master Plans prepared through the conventional approach had limited its scope to Land Use Planning, Traffic and Transportation Planning and Zoning regulations and in some cases Subject Plans for subjects like housing, conservation of heritage, etc. as necessitated by the physical / development characteristics of the planning area. However, the last few decades have enlarged the scope of the Spatial Development Plans to include concerns of urban environment including waste management and storm water drainage, natural hazards, urban health, urban informal sector, energy efficient city planning, reduction of intra city travel needs through provision of self contained zones which encourage non-motorised transport (NMT) and pedestrian facilities, urban poor, inclusive planning etc.

The state and the urban governance systems are more and more recognizing the need for spatial planning, especially for urban areas, to promote planned development of the towns and cities. It has become imperative to prepare Urban Development Plans for all the statutory towns and cities, to prepare implementation strategies for the development proposals contained in the Master Plans and to guide urban development accordingly.

(1)Natural Hazards and Climate Change
The last decade has shown that Kerala is no safe haven as the state had not experienced major natural hazards as did a few states like Odisha, Bengal, Gujarat, Maharashtra, or Uttarakhand. Density of population along our coastal areas is high. Those engaged in fishing and fish trade stay close to the sea coast. They are highly vulnerable to the frequent phenomenon of coastal erosion, sea surge due to occasional phenomena like Tsunami. Moreover, the regulations like the Coastal Zone Regulations forbid new constructions close to our 560 km long coastline.

The state has a rich natural asset in the 41 west flowing rivers which flow through the midland enriching the soil for cultivations. But the recent incidents tell us that habitations situated near these rivers and major canals are highly susceptible to flooding causing loss of life and properties.

Similarly, the state is endowed with part of the Western Ghats along the state's eastern boundary. This mountainous region not only ensures continuity of nearly 25 percent of the state's geographical area as forests, from where the state's rivers originate, but the Western Ghats also ensures a comfortable amiable climate for the state throughout the year. Conservation of this asset is of utmost importance to the sustainability of the state. However, recent happenings show us that these hilly areas are highly susceptible to landslides, a few of which have just washed off some hamlets perched along the slopes of this region. Preparation of Hazard Zonation Maps to enforceable scales may be assigned priority by Disaster Management Authority for better application of the same by LSGs through Master Plans. 'Risk informed Master Plans' so prepared by local governments can reduce damages resulting from natural hazards through adequate conservation and habitation strategies.

(2) Waste Management

Of late, solid waste management issues have assumed colossal proportions in India, especially in urban areas, where the urban population generate anywhere between 300 gms to 400 gms of waste per capita per day. The urban waste may comprise of bio-degradable wastes, and non-bio-degradable wastes, which may consist of recyclable wastes like paper, and hazardous wastes like medicines, medical wastes, and e-wastes. A city with a million population may be generating about 400 tonnes of garbage a day, which is a Herculean task for any urban local government to collect, transport and dispose off /or process or recycle. The state having land constraints, urban local bodies find it nearly impossible to procure required vacant land within the urban areas for waste processing. Cities which adopted incinerator technology for burning these wastes have gradually decommissioned these incinerators for the much acclaimed 3-R principle (Reduce, reuse and recycle).

Similarly, our cities and towns have problems with sewage also. Most of our urban areas do not have sewerage systems for centralized sewage conveyance and treatment. Such centralized sewerage systems and construction of Sewage Treatments Plants (STPs) are not only costly propositions for investment and for operations and maintenance, but are also not feasible in many coastal cities and towns due to geographical conditions and existence of high ground water table. Decentralised community level and city level sewage treatment facilities and septage treatment facilities have been implemented successfully in many cities in the country and abroad. Kerala needs to learn from these examples and act.

The state pursues implementation of many options for waste management – both solid waste management and liquid waste management. However, these solutions have spatial implications which need to be addressed in the Spatial Development Plans.

(3) Spatial Implications of Environmental Planning

Gone are the past when we considered the rivers and other water bodies as backyards for dumping waste. Rivers, ponds, canals and backwaters are increasingly revived and rejuvenated to become passive and active recreation areas and to become lifelines of urban living. Water fronts are redeveloped to become active areas. One of functions of the Urban Local Bodies (ULBs) was to provide drainage facilities to drain off storm water by constructing concrete drains to let off surface water into streams or to sea. Importance of rain water harvesting and ground water recharging are now accepted as a better option than draining the storm water away from urban areas. Drainage basins, ponds and other water holding facilities have become part of urban land use planning.

Green cities as well as green buildings are becoming the order of the day especially when we try to combat Climate Change. Cities like Singapore show us the way to greening of the cities and in formation of green corridors, encouraging walking. This greening is also combined with horticulture by which cities are encouraged to grow vegetables, fruits and flowers within the individual plots and in community and public spaces. This also contributes to food sustenance.

Urbanism movements have advocated the concept of hierarchy of public open spaces in the urban areas. Urban areas in Kerala had not been considering the public open space planning as an essential function in urban development. When better outdoor life and outdoor recreation are promoted towards better urban health and better community interaction is promoted as increasing mental health of the people, public open space development has been reckoned as contributing to happiness and is so regarded as a 'happiness index'. Urban Planning has to promote public open space planning. Urban governments in many Indian cities have been promoting creation of open air gyms (gymnasiums) in residential districts for people to spend a few minutes in the open air gyms during walking and jogging. These are becoming popular needs and attractions in many cities.

It is realized that nearly two third of the global carbon emissions are from urban areas. Countries have come together to combat Climate Change by reducing CO_2 (carbon dioxide) emissions, reducing carbon footprint and reducing emission of green house gases. Positive actions need to be adopted by cities through appropriate city planning and through action programmes. It is also emphasized that every individual and household oriented actions are also required. Burning of wastes, throwing of wastes in public areas and roads, increased use of fossil fuels, construction of unwanted built areas whether in houses or in work places, increased use of air conditioners and refrigeration, etc., are said to increase GHG emissions. Many of these though are considered individual actions, there are many which need to be addressed at city level through adequate planning measures.

(4) Intra-city Travels

Traffic in cities is increasing every day. Percentage of people owning vehicles, either four wheelers (cars) or two wheelers, is increasing in geometric proportions. Nearly two third of our city traffic is composed of 'single-passenger-occupied-vehicles'. Though traffic planning approaches say that roads are formed and widened based on traffic volume, no government

can continue to widen roads in proportion to increasing traffic volume. When urban land values are high as in Kerala and road widening affects the residents and livelihood of many traders, governments have to cautiously deal with the question of road widening. Added to the traffic on roads is the problem of vehicle parking facilities. It has become extremely difficult to provide public parking facilities due to the fact that such facilities are extremely cost intensive generating low returns from parking fee.

Many cities have attracted more than 60 percent of the intra city travel needs to public transport by suitable improvements to public transport modes like High Capacity Bus Systems (HCBS), ETBs (electric trolley bus), mono-rail, metro rail etc. However, the easy way is to improve the road-based bus systems to make city bus service more efficient and comfortable.

It is conventionally accepted in city planning that 'traffic is a product of land use' and if so, it should be possible to reduce traffic by suitably planning land use. Urban Land Use Planning and its implementation may to a large extent reduce traffic intensity on city roads by reducing the need to travel by vehicles. Many cities like Barcelona have adopted city planning based on self contained large 'blocks', where in which a large city zone is planned with motorable roads and public transport facility around the blocks and high intensity development facing the roads. Building densities gradually get reduced towards the inner core of the 'blocks' so that open spaces and play spaces occupy the very central areas of the blocks. Earlier, New York City had such a planning approach. Such 'zone' based planning is increasing becoming acceptable in city planning. Large cities also need to adopt multi nodal city approach, rather than attracting all high density activities and traffic towards a single central area.

Traffic and Transportation (T&T) therefore has become a great concern in city planning. Urban Planning in Kerala has to in the coming years focus on studying the various city planning approaches and best practices around the world to reduce 'traffic' related issues in the cities and major towns of the state.

(5) Losing identity of our urban areas

Towns and cities of Kerala had and some still have individual identify due to their specific characteristics they had acquired during the process of their historical evolution. It could be due to the public open spaces and squares, building facades or certain building elements, or greenery or water bodies or other aspects. Contemporary city building practices negate all these individual characteristics and go for universally adopted treatments for the city spaces or for buildings. Sometimes, it looks like the city facades are just uniformly treated with aluminium composite panels (ACP) and glass. Such faceless city forms do not evince attraction and interest in our urban areas. City form is something for the citizens to be proud of and should have character that is typical of that city/town.

This situation reinforces the relationship and need to integrate the discipline of Urban Design (UD) with Urban Planning. Urban Land Use Zoning has gone through many new challenges and have adopted varied approaches for zoning, one of which is 'form based coding' (FBC) in which specific area level planning of cities go for inputs from urban design

to weave in people centric and function specific designs aesthetically integrated into local development. UD inputs bring in three dimensional characters to urban spatial planning. Location within the towns and cities can be identified during urban planning where UD inputs can enhance the quality of development. Such areas could be heritage zones, traditional housing areas, scenic locations where natural landscape elements can be conserved and the quality of environment can be improved, locations where major building complexes are proposed etc.

(6) Sustainable Development Goals
The United Nations' Sustainable Cities and Human Settlements programme aims to make cities sustainable through creation of career and business opportunities, safe and affordable housing, and building resilient societies and economies. Urban spaces can overcome challenges of rapid growth by improving resource use and focusing on reducing pollution and poverty including provisions to provide access to basic services, energy, housing and simultaneously reducing emissions of greenhouse gases. Sustainable city planning involves investment in public transport, creating green public spaces, and improving urban planning and management in participatory and inclusive ways.

The UN Sustainable City Programme considers Spatial Planning as causing changes in the distribution of activities in space and changes in the links between them by land use planning and reconstitution of property boundaries to effect optimum use of urban land.

Data for Spatial Planning
Successful development of spatial plans depends on the availability of spatial information about physical dimensions, social dimension, economic dimensions and ecological dimension. Qualitative and quantitative data on the past trends and the existing situation on aspects related to land, people and economic functions, infrastructure, housing and social amenities is the backbone of all spatial planning exercise. This also means that wrong data may lead to wrong conclusions resulting from ill-informed knowledge about the settlement that is planned. Quality of data is absolutely important for good analytical decisions leading to good Spatial Planning.

Data is procured through two means:
(a) Secondary data: obtained from organisations which have collected and published these data. These organisations could be Government Departments, Parastatals or recognised organisations, which work on various subjects/fields. Secondary data could also come from published books, articles, survey reports or research studies. However, it is necessary to verify the authenticity of such data.

Authentic secondary data for Spatial Planning is usually sought from:
• Survey of India Maps
• Cadastral revenue survey maps produced by the State Survey and Land Records Department
• Google maps, as guidance maps, though they need to be rechecked and improved on the field
• Census of India

- State Department of Economics and Statistics survey reports
- Other reports and data from the state infrastructure development and managing agencies etc.

Even if secondary data is available, each of the agencies which has procured and processed subject wise data might have prepared them in different levels, formats, and scales. These secondary data need to be brought to the level, format and scale required by the Planning Agency so that they become comparable. When required information and data of specific topics required for Spatial Planning are not readily available as secondary data, the Planning Agency goes for Primary Surveys.

(b)   Primary data: obtained by the Planning Agency by arranging to carry out surveys and studies on various aspects in the planning area. This is usually a time consuming cumbersome process involving money.

Different types and forms of data relating to and required for preparation of Urban Spatial Development Plans are collected, compiled and processed by many government agencies and research institutions on regular basis. In addition project specific data are collected by government organisations / agencies and private sector, when they are entrusted with the specific tasks. In addition, many project based project reports and study reports are prepared by various organisations. But Kerala does not have the system of centralised data bank/repository where these data, studies, reports etc. could be stored for recovery whenever required or to make them available for planning/ spatial planning/ project preparation requirements of government and local self governments. It is high time that the state institutes such a regime of Urban Data Repository which can be accessed by all government departments and ULBs. Digital Technology that is now available at our command can help such a centralised facility.

Physical land mapping is regularly carried out by Survey of India (SOI), who generally prepares maps at 1:50,000 scale with 10 meter contours. For selected land areas SOI prepares maps at 1:25,000 scale also. These give general idea of land but are not sufficient for Spatial Planning at settlement level. SOI maps are complemented through procurement of satellite imageries having higher resolutions, by regular mapping is not resorted to. Such mapping may require field validation to mark the ground level details.

Therefore spatial planning mostly depends also on cadastral maps prepared by the state department of Survey and Land Records. Use of such cadastral map is highly desirable, as it facilitates easy enforcement. But these cadastral maps follow the age old practice of denoting only the individual plot boundaries. With the use of modern electronic computerised survey equipments it is possible now to capture all structures and trees and other land features for mapping. When such digitised maps are prepared they can be made in public domain accessible to all. This will avoid the need for buying hard copies from the departmental offices. The state may gear up to arrange for this type of surveying and mapping as practiced by all other countries.

These maps can be transformed into GIS (geographical information system) format so that all sector organisations / parastatals can overlay their sector related information on

individual layers. ULBs can use these GIS maps for updating them by marking every building when it is completed and numbered for assessment. ULBs can use these GIS maps for spatial planning, project planning, and maintenance of assets like roads and also for taxation purposes.

It is projected that in the next 20 years, the state population may 80 percent urban. Considering the importance urban areas may play in future in the state's economic, social and environmental development, urban data and land resource mapping are imperatives. The state may have to gear up its institutional capabilities for GIS mapping especially for the statutory towns and cities in the 2022 – 2027 plan period and for creation of Urban Data Bank. A few states have established Urban Resource Centres to serve the above purpose.

Proof of the pudding.....
On the same tone as the old English saying "the proof of the pudding is in the eating", we can say that the 'success of the Spatial Development Plan is in its implementation'. In the absence of adequate expertise in the Urban Governance Institutions to read and interpret the Master Plans and to inform the elected councils of the plan priorities for implementation and the mode of implementation, the Municipal Councils had been using the Master mostly as 'regulatory documents' to grant or decline land development and building construction projects, thereby creating a negative mindset in the elected members of the councils and among the general public.

The present Town and Country Planning Act provided for preparation of "Priority Action Plan" by the Municipal Councils. Such a plan shall include the identified scheme and project components from within the Master Plan that the municipal councils can themselves implement and/or this which can be implemented by the other state government departments, parastatals like Kerala State Electricity Board (KSEB), Kerala Water Authority (KWA) or through private sector or under public private partnership (PPP). If Priority Action Plan periods can coincide with the term of the elected councils, such developments caused by the councils during their term of office may add colourful feathers in their 'successful governance and urban management' caps.

The main lacuna and deficiency here may be that the ULBs do not have adequate expertise to read and interpret the Master Plans and to identify and justify schemes and projects that can be and need to be implemented for the development of the town/city. Taking cue from the Municipal Corporations in the rest of India, it is recommended that it is high time the state reviews the manpower and staffing in the ULBs, especially in the Municipal City Corporations and the major towns. Services of Urban/Town Planners and Project Planning Staff have become essential in our major ULBs in this five year Plan period. Many Government of India urban missions and schemes have emphasised on the importance and need of PPP in urban development. However, the ULBs in the state hardly have any expertise to process and structure a scheme or project for PPP and to draft Concessionaire Documents. Failures can creep in since such concessionaire agreements are getting drafted by the private partner and get signed from ULB side. Project financing and convergence of funds from various CSS (centrally sponsored schemes), state flagship schemes/missions,

and private sector is a specialised task, for which capability is to be built in the ULBs in this age of decentralised planning.

With the new Town and Country Planning Act, more powers and responsibilities are vested with the LSGs in the preparation of Plans. Hence, sensitisation of the people's representatives in the council and supporting officers are essential. There shall be a support system in place to understand and coordinate plan preparation/variation activities. For this a cell constituting of planner/engineers to handle this support system may be formulated. Necessary training shall be given for capacity building of such support systems.

The state may bestow attention and discuss these aspects for strengthening the capabilities of the urban governance institutions

CHAPTER -III
URBAN DEVELOPMENT

Kerala's urban growth trends, the needs and aspirations of the growing urban population and policies/programmes to provide basic facilities to improve the quality of life in urban areas are becoming more and more challenging to the state as well as to its planning and development authorities. The current pace of urbanization characterises a more dispersed urban population than those concentrated in urban centres. Kerala has 93 Urban Local Bodies (ULB's) including 87 Municipalities and 6 Corporations. State's LSGI's are financially and administratively empowered and are effective agencies for implementation of urban development programmes. As one of the fastest urbanising states among the major states in India, Kerala always occupy a unique position in many development indicators.

In terms of development planning, Master Plans are already implemented for 50 of the 93 ULB's in the State and is in progress for the remaining ULB's. Various urban development initiatives are being implemented across the state through centrally sponsored schemes like AMRUT, Smart Cities, SBM, PMAY etc., externally aided projects like KKL, KSWMP etc., state sponsored schemes like LIFE and Nava Kerala Mission and other ULB level projects under the state plan fund. Kerala's growing wide-spread urbanisation pattern and lack of proper institutional coordination mechanisms for such spatial development policy interventions are adversely affecting the public service delivery systems in urban areas. Following sections hence focuses on the measures to be adopted for effective policy implementation in various sectors reflecting on more inclusive approaches to achieve Sustainable Development Goals.

Urban Infrastructure Development

State's economic development largely depends on its capacity to develop better infrastructure that addresses sustained urban growth. For much improved service delivery ULB's need to function as facilitators and development project needs to have renewed emphasis on exploring the varied options of public-private-social/community-partnership modes. Adequate policy measure needs to be adopted at ULB level to ensure land availability for development for the promoter/developer of public projects and effective government mechanism should be in place to ensure inclusive approach in public service delivery. Effective techniques for identifying appropriate land required for development, efficient land management methods and creation of public land banks for essential development projects at ULB level can be ways to ensure faster implementation of infrastructure projects.

ULB's should engage SPVs for the formulation and implementation of large-scale development projects as a joint venture with private promoters/investors essentially including the involvement of experts in the field. Innovative financing models that integrate ESG (Environment, Social and Corporate Governance) factors will ensure more sustainable and responsive investment decision making for public projects. Financing pattern and investment structure of public projects should also address long-term operation and maintenance as well as provide for essential services like efficient water and waste management systems.

To capitalize on the governmental funding options, development projects envisioned at local area level needs to be aligned with centrally sponsored schemes and state level programs.

Environmental clearances for public infrastructure projects should be the responsibility of respective ULB's essentially involving experts in the field aimed at mitigating micro-climatic impacts and tackle climate change. Impact assessment of the infrastructure project on the environment and vice versa needs to be evaluated for enforcing more resilient construction techniques and for ensuring effective climate change adaptations. Social Impact Assessment (SIA) should be made an essential prerequisite for implementing public infrastructure projects to mitigate the negative impacts and identify opportunities to enhance its benefits for local communities and broader society. Inclusive public infrastructure development that addresses inequality in urban areas should be the prime focus of ULB's to achieve 10th (Reduced Inequalities) and 11th (Sustainable Cities and Communities) Sustainable Development Goals (SDG).

Traffic and Transportation (Walking, Tracks for NMT)
Efficiency of an urban area largely depends upon the effectiveness of its traffic and transportation systems and the ease with which people and goods traverse. Improper mobility systems can adversely affect liveability as well as stifle economic growth and development in urban areas. Use of advanced and innovative technologies and learnings from best practices in traffic management should be adopted by ULB's to plan and regulate traffic and reduce traffic congestion. Effective parking policies and modern mechanised parking systems like multi-level parking should be part of the traffic management plan for urban areas. Use of non-motorised conveyance in urban areas should be encouraged by providing adequate facilities. ULB's should plan for pedestrian/bicycle-oriented development of urban areas by implementing a range of facilities including construction of sidewalks/footpaths and dedicated bicycle lanes, bicycle sharing programmes, park and ride facilities, etc.

Efficient public transportation systems including multiple modes of transportation often provide economic and social opportunities as well as environmental benefits by reducing pollution and congestion in urban areas. ULB's should focus on improving public transport systems, encourage carpooling services and impose of tax and penalties to regulate/reduce/eliminate private vehicle use and parking needs in urban areas. Encouraging the use of electric and other renewable energy vehicles in cities through provision of incentives to public and private sector transportation can help reduce carbon emission and satisfy the need for cleaner energy sources in transportation systems. Adoption of most advanced technological solutions like automated systems for ticketing, fee collection, parking etc. in traffic and transport management is necessary to tackle increasing traffic congestion in urban areas.

Transit oriented development, the most promising approach that envisions vibrant, liveable and sustainable communities through creation of compact, walkable, pedestrian-oriented, mixed-use communities centred around various transit systems (railway stations, bus terminals, water transport etc.) should be one of the key development strategies of ULB's. Development plans should encourage the creation of public space networks that bring people and activities together by providing walking and cycling connection between public

spaces to improve physical and social connectivity within urban areas. Availability of modal choices and paratransit systems as last-mile connectivity, essentially using non-polluting vehicles, should also be ensured at important nodes in urban areas to eventually achieve healthy and car free urban spaces. Efficient traffic and transportation systems in urban areas is one of the primary necessities to attain the 3rd SDG (good health and well-being).

Ecosystem Services (Waterbodies – conservation, rejuvenation, flood avoidance, cleaning, waterfront development)

Every urban area has a unique ecology and varied ecosystem services, hence focusing on critical ecological resources and networks is key to sustainable development of cities. ULB's should hence ensure regulatory mechanisms that conserve, protect and replenish the sensitive natural ecosystem within the urban areas which are currently under threat due to the imminent development pressures. Mapping the existing blue-green infrastructure and developing protocols, rules and regulations in compliance with existing Environmental Laws to reduce further ecological degradation is critical to urban development and management for mitigating the risks due to increasing natural disasters. Centrally sponsored schemes like AMRUT and Smart Cities programmes have integrated waterbody rejuvenation as an important aspect in development planning. ULB's should develop integrated development plans with these central schemes focussing on nature-based solutions for water conservation and disaster risk reduction. Participatory approaches involving communities/CBO's, NGO's and environment activists at ULB level can be effectively developed and utilised to rejuvenate, maintain and manage the blue green infrastructure within urban areas.

Strict regulatory provisions complying to relevant Environmental Acts should be implemented by ULB's to tackle industrial pollution and measures should be taken at the source itself to regulate the discharge of hazardous and non-hazardous pollutants and effluents to waterbodies from factories and units. Innovative wastewater management systems should be adopted by ULB's to check and regulate the discharge of untreated domestic sewage to nearby water sources. ULB's should encourage responsive water-front developments with facilities at an urban scale complying to environment regulations and by fostering community participation for its maintenance and management for enhanced economic opportunities and better quality of life and improved accountability at local level to the fragile ecosystems. Innovative and context-based climate change adaptation measures and development controls focusing on holistic and sustainable approaches to planned development should be the primary focus of local development plans for mitigating flood risks. CRZ norms should be strictly implemented and measures should be in place to mitigate the negative effects of coastal erosion and sea level rise on the communities that are dependent on such ecological resources.

Healthy Cities – greening, public open spaces, walking-jogging tracks, recreational facilities, open gyms. etc.

Healthy city concept identifies the importance of green open spaces and built environment in cities that encourages, enables and supports health, recreation and wellbeing as well as safety, social interaction, accessibility, mobility etc., responsively planned to cater to the needs of all its citizens. Public spaces will essentially play a key role by providing

environments for community connection and social wellbeing while restarting cities, post COVID 19 pandemics. Open green spaces in cities due to the restorative power of nature, offer a wide range of possibilities for establishing renewed activities for the mental and physical wellbeing within neighbourhoods and communities. ULB's should ensure greening redundant urban spaces, create public open space networks, provide walking-jogging tracks along open spaces and water bodies, provide nature based recreational facilities and health care facilities like open gyms etc. for healthy living in urban areas.

Conserving, protecting, developing and nurturing urban forests as lung/breathing spaces should be a priority in the development plans to reduce pollution and mitigate greenhouse gas emissions. Urban agriculture needs to be promoted among neighbourhoods and communities as urban farms play a vital role in our cities for providing access to healthy local food and green spaces that benefits human health. Development plans should ensure adequate social infrastructure facilities at neighbourhood and city level as per URDPFI guidelines for achieving healthy city development. ULB's should align with Smart City initiatives and adopt smart technologies to achieve carbon neutral/ net-zero strategies to combat climate change. Development regulations that address sustainable coexistence of blue-green-grey infrastructure and ensure proper integration for sustainable use of such invaluable resources is essential to achieve healthy and sustainable urban environment.

Old Commercial Establishments (Revitalisation of market streets etc.)

Old CBD's and market streets are important elements in the social and cultural fabric of cities. These markets have provided economic opportunities for generations of traders, shop owners and even vendors and still continue to function as ideal locations for local commerce and traditional traders. Hence the special characteristics of this area like heritage, diversity and density needs to be preserved while addressing efficiency, ecological soundness and social equity to improve the quality of life in these areas. Retrofitting and renewal of old market areas is one among the key strategies of the area-based development initiatives of the Smart City Mission. ULB's need to develop an integrated master plan that incorporates Smart City initiatives so as to effectively implement inclusive market renewal strategies that aspires to the needs of the community and improves economic opportunities for all stakeholders.

Renewal and redevelopment strategies of marketplaces should focus on improving accessibility and mobility of goods and people and developing ancillary physical infrastructure facilities that supports the entire functioning of the marketplace. Adopting green marketing strategies, eco-friendly garbage disposal measures/zero waste management systems, use of renewable energy sources for lighting etc. will facilitate more sustainable environmental practices in traditional marketplaces. The role of traditional markets in the tourism industry needs to be recognized and measures to conserve its cultural heritage and value should be the prime focus of the renewal plan. Market revitalisation should be pursued as a place making exercise that create public places with enhanced experiential qualities through diverse opportunities which will eventually increase public participation and improve the revenue from markets and pay back to the ULB's for the operation and maintenance of the renewed commercial infrastructure.

Land development for Economic Activities (mini-industrial areas etc.)

Land availability is one of the biggest constraints for economic development since access to appropriate land for development activities is absolutely scarce in urban areas. State's land allotment schemes that provide infrastructure assistance for land development for economic activities to stimulate local economic development can be utilised by ULB's for establishing mini-industrial estates. Mini-industrial estates (MIE) /zones can facilitate better investments, promote local entrepreneurship and create employment opportunities, assist and strengthen traditional industries and MSME's as well as encourage women and other weaker sections in the society to become entrepreneurs paving way for inclusive economic development in urban areas. MIE developments should be part of local development plans and land pooling and land reconstitution measures can be adopted for land management and implementation of such economic zones.

ULB's can adopt PPP schemes to develop MIE's in coordination with the state, provide financial assistance, incentivise economy generation activities in these identified zones to encourage investment and development. Integrated township model that cross subsidises other development needs could be adopted by ULB's to ensure the development of such economic zones within urban areas Planned MIE developments can facilitate better utilisation and higher value addition to available local resources, improve industrial, allied and ancillary infrastructure, provide better logistics support, and increase employment opportunities for skilled and semi-skilled labourers as well as increase livelihood opportunities for even the unskilled work force paving way for achieving SDG: 8 Decent Work and Economic Growth.

Role of ULB's in Water supply, Sewerage, PWD Roads etc. (in coordination with parastatals)

Providing state of the art basic services accessible for all through innovative technologies and achieving service level benchmarks is one of the key prerequisites for sustainable development of urban areas. Integrated infrastructure development plans need to be developed for urban infrastructure facilities that covers schemes like water supply, waste management systems, city sanitation plans, establishment and enhancement of public comfort facilities, local road development, implementation and improvement of sewerage schemes, storm water drainage schemes etc. and its implementation should be coordinated by the ULB's. Decentralisation and distributed management of all urban utilities in coordination with various parastatals (KWA, Water Resources Department., KSEB, KSPCB, PWD, Revenue Department etc.), at ULB level is critical to ensure more equitable distribution of public services. Service level benchmarking by measuring and monitoring the performance of service providers in a systematic manner should be adopted by ULB's to ensure better performance in service delivery. ULB's should formulate policies for food security (addressing rural development and multiplier effects) and tackle water scarcity (sustainable management of water) by encouraging urban agriculture/forestry, water harvesting and ground water recharge mechanisms in urban areas.

Waste management is one of the biggest challenges in urban sanitation. It requires capital investment, skilled personnel, coordination between different government departments

and organisations, and awareness of the issues by the public. For better solid waste management ULB's should adopt regulations that promote reduction and reuse at source, zero waste concepts by effectively categorising urban areas into zones based on solid waste generation types and management techniques. ULB's should incentivise household/community waste recycling/management units adopting advanced technological solutions with the help of CBO's for better waste management at source. Decentralised liquid waste management and sewage treatment facilities which are technologically advanced and designed monitored and managed by ULB's is the most effective strategy to handle and dispose liquid waste. ULB's have a larger role in ensuring availability and sustainable management of water and sanitation in urban areas to achieve SDG 6: Clean water and Sanitation.

Heritage Management (Conservation of Heritage & Tourism)
Heritage management essentially deals with the identification, protection, and stewardship of cultural heritage in the public interest. It is imperative to value and protect the cultural heritage, including traditional settlements and historic districts, religious and historical monuments and sites, archaeological areas and cultural landscapes. ULB's should formulate Art and Heritage Committees AHC's) at local level and adopt regulations for more responsible adaptive reuse of heritage buildings and pro-actively involved in the urban conservation and renewal missions in urban areas. Active community participation should be encouraged in preserving the cultural heritage of the locality through institutional mechanisms like INTACH also involving NGO's and activists in the field. Cultural/heritage awareness/sensitisation programs promoted by ULB's should be conducted in such localities to improve public participation and community involvement in preserving heritage structures and for conserving the cultural values of the place. Adequate institutional measures should be in place to obtain revenue for heritage conservation through tourism promotion. Cultural museums and theatres that preserve and uphold local culture and social diversity also play a vital role in enhancing tourism.

Urban Design
Urban design inspires, illustrates and defines how urban spaces could be improved or protected inorder to provide larger benefits to the society through improved economic opportunities and enhanced quality of life. Urban public spaces should be designed in consultation with various stakeholders and beneficiaries including local authorities, local communities, development institutions etc. to resolve problems and conflicts to create better places for everyone. Participatory approach in urban design and development process can ensure the creation of more responsive environments and improves accountability. Revitalization of urban spaces including streets development, creating parks and open space networks, pedestrian friendly neighbourhoods, conserving water bodies and defining distinctive urban form and skyline can strengthen the cultural identity of a place. Responsive urban design ensures gender equality in the use of urban spaces, more inclusive urban spaces including street vendors, and informal sector workers and provision of barrier free environments for the elderly and differently abled.

The Priority Action Plans (PAP's) as envisaged by the Kerala Town and Country Planning (Amendment) Bill, 2021 for identifying urban projects that resolve urban issues comes

under the purview of Urban Design. PAP's should be developed by ULB's involving professionals in the field of Urban Design and Development Authorities should be strengthened by including all allied experts in the field of development planning and implementation for commissioning various development projects. Urban design plans work on a larger vision formulated for places, involves indepth research of people and places to inform decision making, foster partnership with various institutions and expertise, formulate strategies, policies and guidelines based on the context for design and redevelopment, as well as formulate inclusive strategies for efficient management and implementation of urban projects. Urban Design structure plans can hence address core issues like agility, adaptability and resilience to confront the ongoing challenges to urban development due to climate change and ensure sustainable development of urban areas.

Emerging Needs

- Change development planning focus at ULB level from formulating mere land-use development plan to spatio-economic development plan inherently responsive to social and ecological concerns of urban areas
- Flexible spatial development plans to be developed in the form of structure plans having maximum perspective of 5 years with short term goals which can adopt changing social and climatic needs for building resilience in the existing urban system
- Formulate long term legal framework for development planning at ULB level as well as annual financial plan for implementation of various development projects that facilitates better accountability and transparency.
- Implement measures to analyse the unique urban ecology focusing on critical ecological resources and networks and the importance of developing blue-green-grey infrastructure that conserves, protect and replenish the sensitive natural ecosystem
- Tackle increasing urban density through strategic development planning based on carrying capacity studies of urban areas, resorting to advanced technological platforms that model and simulate emerging urban growth and predict optimum carrying capacity for development planning in new growth areas.
- Ensure inclusive development by exploring the options of CSR in large scale private development projects by ULB's as means to tackle urban poverty and make essential services, facilities and utilities gender friendly and accessible for all including the poor, disadvantaged, differently abled as well as for old and young lives.
- Analyse ongoing transformations in urban economics and its emerging networks and flows to assess the scope for new livelihood opportunities and employments, better investment options (small scale and large scale) as well as to identify the spatial spread of investments and employments and its inequalities and ensure equitable growth in urban areas through development planning.
- Develop integrated/comprehensive development plans that address issues related to urban ecological resources and services, land use development, economic infrastructure: industrial and commercial, heritage and tourism infrastructure, transport infrastructure and other social and physical infrastructure and explore its networks and implications at local, city and regional spatial scales

- Develop efficient overall urban management system at city level networked with the public facility management systems at local area level for effective service delivery and improved solid and liquid waste management mechanisms.
- Learn and adopt best practices in urban governance by LSGI's for better planning and management of urban areas so as to eradicate poverty, homelessness, crime and other social ills
- Evaluate urban agglomeration: trends and patterns by assessing urbanization characteristics and the direction of urban growth and sprawl and devise strategies for Planned Urban and Rural Development (PURD)at regional scale to achieve ecologically and socially sustainable planned and guided 'Rurbanisation' and reduce fragmentation especially in cities that are growing beyond metropolises to mega cities.
- Develop local area development plans and area-based renewal and redevelopment schemes that have an urban design perspective focussing on devising short term implementable structure plans with a larger vision which also identifies public projects and other built and unbuilt interventions required to improve the quality of life of the locality and its inhabitants

Way Forward
Policy Level
As envisaged in Kerala Municipal Act 1994 (74 CAA:18 functions under 12th schedule), empower the ULGs with human resources and financial resources to exercise their duty diligently. Formal system should be in place to integrate various infrastructure projects implemented through Centrally Sponsored Schemes (AMRUT, Smart Cities, SBM, PMAY, etc), Externally aided projects (RKI, KSWMP, etc), State-Sponsored Schemes (LIFE, Projects under Nava Kerala Mission), and ULB level Projects under state plan fund. DPC should be strengthened with interdepartmental coordination among LSGIs and other parastatal agencies (KWA, Water Resources Department, KSEB, KSPCB, Revenue department, Tourism department, Culture Heritage Department, etc). Technical team (ideally in every ULB or at least at district level) for infrastructure planning, project design, tendering, execution, and management should be constituted. Technical Wings at LSGs should be strengthened with professionals from the field of Urban Planning, Urban Design, Architecture, Law, Geology, GIS mapping, Land survey, Development Economics, Sociology, etc. Technical Wing of DPC should also engage with Academic Institutions to support the Local Governments.

Digitally aided Command and Control centre should be established at district level to ensure inter-departmental coordination, timely monitoring, and seamless decision making. Budget allocation should be made for periodic capacity building programmes (awareness programmes, workshops, training, etc, for ULB staffs, on multi-year planning, SLBs, risk resilient planning, GIS mapping, environmental laws, heritage conservation and tourism, slum free cities, healthy cities, street market development, e-tendering process, PPP, procurement, etc.). Annual Citizen satisfaction survey on service delivery should be conducted and annual Improvement plan based on the citizen's survey result should be formulated.

Urban Local Body Level

ULBs should prepare Service Level Benchmarking (SLB) reports and prepare Rapid Baseline Assessment (RBA) for identifying the priority sectors as part of 5-year plans. Also using the latest data for identifying the priority sectors and projects for the next 5 years. RBA may also include a strategy for resource mobilization. Strategies should be adopted for Integration of Master Plan with ULB's 5-year plans and Annual Plans. The projects for annual planning should be based on the service levels benchmarking. Muti-year infrastructure investment plans should be made by ULBs in line with the proposals in the Master Plan. Dedicated platform for interdepartmental coordination should ensure the functioning of "Sectoral Working Groups" (formed for Master Plan preparation) as a dedicated platform for interdepartmental coordination and project integration

Strengthening of Ward Communities (WC) to ensure the participation of citizens/CBOs/NGOs in the participatory planning process. Competitions should be organised, or proposals should be invited from professional associations/academic institutions to identity /plan projects under sectors like Tourism, Heritage, Placemaking, Street design, etc, to be deliberated in WC. ULB's should adopt digital technologies/digital infrastructure to improve the service delivery. Digital data base preparation should be in line with indicators identified by NITI AYOG for all infrastructure sectors and to be made available to the public through websites.

CHAPTER -IV
URBAN HOUSING

Housing in Kerala is a major topic dealt with separately in the 14th Five Year Plan Report. However there are a few housing issues which are specifically important when discussing Urban Issues and this necessitates a brief separate note on Urban Housing.

Residential dwelling unit is widely accepted as a fundamental human right. The United Nations Committee on Economic, Social and Cultural Rights has underlined that the right to adequate housing should be seen as a right to live in security, peace and dignity. A house gives safety, security, identity, address, status, emotional satisfaction, livelihood support services and linkages with the society. House also provides a comfortable environment conducive to physical and mental well-being. Urban area is characterised by concentration of people and concentration of non-agricultural activities. Therefore there is increasing pressure on land since most of the human activities have spatial dimensions. Such spatial implications of concentrated economic activities reflect in increased demand for land which escalates urban land prices. Urban activities compete with each other to occupy on urban land and urban land utilisation is guided by maximisation of returns from land. Housing being low productive has lower utilisation value when higher order uses push housing activities farther and farther away from activity centres of urban areas. People with lower income are marginalised since they cannot afford to compete in the privately operated urban land market and so are pushed away to the peripheral areas. Low income group people find it difficult to own land in major urban areas and hence find housing in slum-like housing areas, or floodable low lying areas or in the immediate areas around the cities and towns. Cities and towns necessarily have to have the services of the people in the lower service sectors too and they need to be supported to secure housing within the urban areas by suitable urban land use policies and urban land market interventions.

On the economic front, construction sector is a major economic activity. More than two third of the construction sector activities are in house building either by individual house builders for own occupancy or by real estate developers. As an investment good, investment in construction sector has wider multiplier and accelerator impacts on the economy and society depending upon the material use pattern, technologies, building processes, relations of production and so on. Its environmental and ecological footprint is far higher than that in any investment sectors. In any society the quality of housing conditions is equated to the standard of living of the people, their human development achievements, economic development of the region and the values that shape the social and political system.

Since urban housing is dynamic in nature, it may not be possible to address urban housing needs for forever. However 'housing for all' is the State's aim and there needs to be a continuous effort to tackle housing issues, especially urban housing issues as the State's urbanisation growth is rapidly rising and more and more demand is generated for urban housing.

The national government's flagship programme of PMAY (Prime Minister's Awas Yojana) aims at 'housing for all'. Kerala has been focusing on social housing with the implementation

of several innovative housing schemes. Both in the Centrally Sponsored Scheme and the State Scheme, importance is given for 'affordable housing' for the households in the lower income groups. The State Government has been implementing the scheme named LIFE (Livelihood Inclusion and Financial Empowerment) with focus on vulnerable sections of society. Under this scheme housing support is supplemented with training, skill upgradation, employment, income-generation and benefits of social security schemes etc. to the beneficiaries. All these would be dealt with separately under HOUSING in this Fiver Year Plan Report.

However, it is observed that cities and towns have a few housing related needs which need special attention. Some of these housing needs are addressed here.

(i) Housing Statistics
'Residential house' is location specific and therefore, housing problem or the issue of housing shortage/homelessness or the poor quality of housing is location specific. Factual data on the housing situation in each locality is required for proper housing planning. As far as Kerala is concerned, we now have different sources of macro-level data on housing situation which do not necessarily match, depending on how we define the housing problem/shortage. Major sources are Decennial Census data, Socio-economic data, estimates based on NSSO data and data compiled by the State Department of Economics and Statistics. These data sets provide an overall picture about the quantitative and qualitative aspects of housing. Qualitative aspects are measured on the basis of arbitrarily fixed standards. Such data may be used for macro level planning but are not sufficient for addressing location specific housing issues. LSG wise database is therefore an urgent necessity.

We need to assess housing data, not just broad quantification, but detailed data on size, type and ownership of all houses in each urban area. ULBs do have the data on houses built in their areas of jurisdiction when building construction permits are granted and when such completed buildings are assessed to numbering and taxation. Local knowledge is available with the local representatives on the houseless households, on doubled up dwelling units and on households living in critical areas – floodable areas, road, canal, river and railway purambokes, and in areas affected regularly by coastal erosion. Local knowledge is also available on slum housing. These are sometimes collected, though not scientifically, on ad-hoc basis for specific purposes. There is likelihood of factual data getting manipulated by local interests. However, urban local governments are in a position to collect, compile, categorise and update housing data in each urban local body are using modern tools and by designated persons working on this continuously working within the ULBs. With appropriate IT tools, quantitative and qualitative techniques and methods it is not difficult to collect factual information on houses and households and create a database at the LSG level. From such a database it is easy to identify the households that require public support, the nature of support required and so on. Households which require housing support can be grouped in different categories based on their resource endowments, capabilities and potentials and priorities. That in turn helps local level housing planning and project preparation.

The State has to designate the Urban Local Bodies as the mandatory agencies to collect,

compile, categorise and update housing data and to enable this function the ULBs have to be capacitated.'

(ii) Empowering the ULBs for housing development / planning and implementation of housing schemes

Housing, being a location specific durable customized good, the state government has to adopt policies to recognize the critical role of Urban Local Government institutions not only in the identification of beneficiaries but also in programme planning, implementation of sustainable solutions and monitoring of all state sponsored housing schemes like LIFE and to empower ULBs to evolve housing schemes specifically required in each city or town. Such schemes identified, planned and projected by the ULB – Municipal City Corporation or Municipality – may be approved by a designated expert team for financial assistance of the State Missions and or other State funds for Housing. This proposed approach is to empower and capacitate the ULBs, for housing scheme formulation and implementation may absolve the state level agencies to directly formulate housing scheme in any urban area and to contract the project for implementation. However, the state level agency/mission may monitor the scheme implementation and advise for ULB for required improvements/corrections. In addition to policy decisions on these, the state may issue specific guidelines with regard to housing project formulation, funding, methods of 'covergence' to source assistance of all available schemes like PMAY, Urban Housing Mission for Slum Free City Plan of Action (SFCPoA) under the PMAY, Swachch Bharat Scheme for Water Supply and Sanitation, Ujjawala Scheme for LPG connection, Saubhagya Electricity Connection Scheme, National Urban Health Mission (NUHM) scheme, and other similar schemes and other State Schemes under 'Life' Mission, Suchitwa Mission Scheme etc., can be converged to a single housing scheme to achieve total housing development. The ULBs may also be encouraged to implement housing schemes with social participation and use cost and energy efficient technologies, to adopt green building practices and methods and to encourage use of environment friendly building materials. Establishment of an exclusive housing unit with required experts in Urban Planning, Housing, Project Planning and Project Management within the Municipal City Corporations and within the district headquarters towns in the 14th Five Year Plan period may enable the state to achieve its aim of 'Housing for All' and Slum Free Cities by the year 2026.

(iii) Housing for Households in Critical Areas/Locations

Critical locations include:

- Coastal areas including many fisherfolk housing areas, which are regularly affected by coastal erosions, damages/loss to existing dwelling units and loss of livelihood. There are many towns and cities located by the sea side. The ULBs along with the state Government machineries have to deal with relocation, provision of free food, and other facilities and reconstruction of houses after the disaster.
- Dwelling units located along the road, railway, river and canal margins which get inundated by flood waters every time there are cloudbursts.
- Dwelling units located in environmentally fragile hilly areas subjected to landslides and identified to be hazard prone areas.

Frequency of natural hazards like sea surge, coastal erosion, sea level rise, floods and landslides have increased in Kerala in the recent years. There could be many reasons like Climate Change, deforestation, terracing of slopes, blocking of natural drainage channels etc. attributed to this phenomena, but the most important cause may be that people develop habitation is such areas due to various reasons. Though total avoidance of natural disasters may be impossible, the state and the people can minimise losses by prudent relocation of dwelling houses to safer areas, without of course, without loss of livelihood. Perhaps, the state has to evolve strategies for gradual relocation of the susceptible households to safer areas. It may be prudent to evolve a new Scheme with convergence of the existing schemes to relocate these dwelling houses in critical areas to safer places, under specific housing schemes originated by the ULBs.

(iv) Slum free cities

Though in-situ urban slum redevelopment schemes were under implementation in the Urban Areas of the State under various state and government of India, these addressed only certain housing components like dwelling unit construction, access road/ street improvements, providing sanitary latrines, and storm water drainage. However under the centrally sponsored Rajiv Aawas Yojana (RAY) urban slum improvement was proposed as total redevelopment of the urban slum areas. When such a total redevelopment takes place, that housing area may cease to be a slum and would be only a LIG (low income group) housing area. About 40 years ago, though one of the towns declared a total scheme to convert the town into a slum free town, that town could not make headway perhaps because of managerial issues and since during that period there were not many schemes from which financial resources could be drawn for effecting 'convergence' in total slum redevelopment. However, now the situation has changed. RAY is presently subsumed in the Slum Free City Plan of Action (SFCPoA) under the PMAY. This scheme is better facilitated under LIFE by including livelihood activities.

In the 14th five year plan period, all the Municipal City Corporations in the state may be encouraged and capacitated to propose a comprehensive Slum free City Master Plan and strategies which can be evaluated by a designated state level expert team for scheme feasibility and resource mobilisation. Every city may propose within the Strategy Plan a 'plan of action' with FOP (financial operations plan) showing the time lines of each slum improvement plan and the sources from which each component of the specific schemes could be financed.

(v) Rental Housing

The cities, especially the major cities, face shortage of rental housing. Thiruvananthapuram being the capital city attracts a large number of single migrant officers who work in government sector and in private establishments. Some opt to shift their employment temporarily to be with their children who get admitted to local educational institutions. Such people require housing only for two or three years and they seek rental accommodation. This situation may be there in Kochi city and a few other cities also. Therefore there is demand for rental housing in such cities.

Since investment in housing does not yield high returns compared to other investment avenues, people rarely invest in housing. However, some do invest in housing expecting value appreciation. However, many of them who own second or third houses in the cities do not prefer to rent them out and keep such dwelling units locked. It is estimated (exact statistics not available) that there may about 12 lakhs of such locked up and/or sparingly used dwelling units/residential apartments in Kerala.

The present Rent Control Act needs to be reviewed since it is alleged that its provisions are biased towards the tenants and that the interests of the owners are not taken care of. The model Rent Control Act and the model Tenancy Act circulated by Government of India may be studied for necessary improvements in the present act or to bring in new legislation which takes into consideration the interests of both the owners and tenants. It is hoped that with this new legislation people may be attracted to invest in rental housing in the major cities.

Rental housing projects in cities need to be supported and facilitated by the state and City Governments. Necessary steps towards such facilitation actions need to be evolved.

(vi) Studio Apartments as serviced apartments
Cities require mini dwelling units for singe persons who get transferred to the State capital and other cities on promotion as senior officers and heads of departments. Such serviced dwelling units / apartments are also required for senior executives /professionals of private companies who temporarily get posted to a city like Thiruvananthapuram, Kochi or Kozhikode and may remain in that city for an year or two. They need single occupancy facility like a suite room in a hotel, where they can also receive guests visiting them. They need furnished serviced small apartments, with kitchenette, pantry, toilet and bed and sitting rooms. Such residential facility may also have common catering facility with dining room and kitchen.

The city governments may identify the need for such housing accommodation based on surveys and facilitate such residential construction with State support. Buildings can be constructed and operated by the private sector.

The number of senior citizens living alone and with spouse is increasing. As their children are away, many of them live in big houses which they cannot look after. Some of them are not healthy enough to live without housekeeping assistance and /or health assistance. Big houses are thus underutilised and many may find such houses as liability. There is need for paid senior living facilities in major urban areas. Senior living facility with independent small dwelling units providing common kitchen and dining facility, assisted living facility for those require it, common library and recreation rooms, periodical health visitor facility, walking tracts, and with outdoor spaces where they can engage in outdoor activities etc. State government scheme and norms and standards for senior homes as gated communities would help private sector to invest in such housing developments in the urban areas. Such facilities not only provide safe and secure housing facilities for senior citizens, this may also enable the big furnished houses to be used as rental houses for the needy.

Many of the old housing colonies in the cities and towns were planned with 400 to 600 square metre plots for large residential buildings. It is seen that in some these HIG housing colonies only one or two occupants are living in the big houses. Many of them are aged to maintain these houses. In such housing colonies 'pooled housing redevelopment' can be planned by which the owners do not lose their ownership rights, but they receive better returns from their houses and the additional dwelling units which can be constructed in the pooled left over side open spaces and additional vertical expansion. Such re-densifying redevelopment as pooled scheme can be planned and implemented by the private sector. Housing research in academic institutions can demonstrate such housing projects for adoption by private sector real estate developer or as cooperative house redevelopment project by the house owners themselves. The advantages of the 'pooled housing redevelopment' scheme are:

- Densification of the cities;
- Optimum use of urban land, (most of these in the central areas of cities and towns) which otherwise are underutilised;
- Safe and secure residential facility for senior residents, who also earn from their idle dwelling units;
- Redevelopment and retrofitting can aim at green sustainable neighbourhoods as gated communities; and
- Minimise the intra-city travel needs since such neighbourhoods can be planned as self sustaining neighbourhoods which provide day-to-day needs of the community within walking distance.

(vii) Building Materials
Housing industry in the state faces acute scarcity of basic building materials like rubble/ stone, sand, and mud/clay for bricks. The state has to consciously promote local building materials like timber and bamboo. If timber is to be promoted, there should be adequate supply of timber in the market. This would be possible if the state encourages more and more tree planting in private land and in the forests and relaxing the existing forest utilisation laws to fell and sell forest timber. Most of the western world has already turned to use of CLT (cross laminated timber) as an excellent building material. Wooden houses need to be encouraged.

Similarly treated reconstituted bamboo also is a good proven building material. This needs to be popularised and at the same time more and more bamboo cultivation in public lands and in the forest areas has to be encouraged.

The State should encourage the ULBs to promote building material manufacturing/fabricating units to produce building components for house building. Innovative building material manufacturing units may have good scope for business, provided such entrepreneurs tie up with engineering research institutions like NIIST of CSIR, KERI and engineering academic institutions. Alternatives for bricks, sand, binding materials to reduce the use of cement, etc. may have to be found. Prefabricated housing components like wall panels,

door and window units, kitchen units, roof panels etc. could also be manufactured to facilitate DIY (do-it-yourself) in house building. Local CLT (timber) panel manufacturing units may also be encouraged and supported.

URBAN WASTE MANAGEMENT

Discussions here is mainly on Solid Waste Management (SWM) and Sewerage (SEW) which have recently grown as major concerns for the Urban Local Governments. Though a good percentage of the ULB expenditure on health sector is on SWM, problems of solid waste management have become much more complex than just collection and disposal. Presently, most of the urban areas in the state of Kerala have no sustainable solutions for all the solid waste generated from the urban areas. Gone are the old days and old ways of solid waste dumps. Such crude dumping in some vacant land is no longer a solution due to the ground, air and water pollution such dumps create and also since such dumping yards generate methane gas, which is one of the green house gases contributing to climate change. Action programmes for reducing the adverse impacts of climate change point towards need for good SWM solutions in urban areas, since waste generation in urban areas has the highest contribution in speeding up climate change.

Similarly, the urban Kerala has also a major problem with sewage disposal. Only Thiruvananthapuram city has a good coverage with sewer network and a centrallised sewage treatment plant (STP). Part of the Kochi city has sewerage system. All other urban areas still continue with septic tanks or soak pits. Though we are proud that we have completely abolished open defecation and manual scavenging, it is disgraceful that such insanitary conditions still rarely exist unnoticed by surveyors. There are a number of urban areas especially coastal towns and cities, which have high ground water table or water logged, where conventional types of soak pits, or septic tanks do not work. Therefore, such areas experience high level of water pollution. Taking cognizance of criminal attitudes of some septage clearing agents in disposing such raw sewage in public vacant lands or in water bodies, the highest law court of the state had issued strictures to establish septage treatment plants. We have not successfully addressed this issue till now though earnest efforts were taken by the state to establish septage treatment plants.

In this context, the ULBs in the state have primary responsibility to address the above two issues during the fourteenth five year plan period, though many cities and towns find these as insurmountable problems, which they alone may not be able to tackle. State interventions and supports, technical and financial, may be needed to find sustainable solutions to these vexing problems.

A. SOLID WASTE MANAGEMENT
Assessment of previous plan and the problem of waste management

- Waste management and its minimization is of importance for Kerala in relation to the concerns of urbanization, environmental monitoring, and achieving the targets of various regulations and compliances on waste and pollution
- The recent estimates from the submissions made to the NGT indicate that in 2021, the quantity of solid waste generated in Kerala was about 11,449 tonnes per day (this is almost twice the estimated waste generation reported in 2006; (6506 tonnes per day).

It is estimated that urban areas produce 3521 tonnes per day while rural areas produce 7928 tonnes per day. For 2021, it is also estimated that 2,981 tonnes per day of waste is untreated.

- Estimates for solid waste in Kerala vary widely. This is primarily due to the absence of a uniform methodology for data collection and the lack of capacity for periodic data collection. This applies to urban and rural bodies. Studies by NEERI (1996), Centre for Earth Sciences Studies (2001), Varma (2015), and recent submissions to the Principal Bench of the National Green Tribunal provide some statistics on this.

- A few of the state level actions to improve solid waste management practices in the state are noted below. This has reference also to the 13th Five Year Plan and the Kerala Development Report (2020).

- Kerala Sustainable Urban Development Project (KSUDP) for the six cities of the state funded by the Asian Development Bank: SWM was a major component under this project. Considering the difficulties in locating a new piece of land for composting and acquisition of land, the project envisaged using the earlier solid waste dumping sites to be converted to waste processing and scientific composting. But due to various reasons of detailed project preparation, environmental issues and/or implementation, peoples' agitation against the compost plants delayed these projects till the closure of the KSUDP period. The efforts taken by the state programme management unit (PMU) and the City Governments and the money spent till the closure of the scheme did not have desired outcome.

- Jawaharlal Nehru National Urban Renewal Mission (JnNURM): NURM was mainly for cities selected for scheme implementation by the Ministry of Urban Development, Government of India. Thiruvananthapuram and Kochi were two cities selected for inclusion in the scheme. However, this mission had a sub-mission named "Urban Infrastructure Development Scheme for Small and Medium Towns' (UIDSSMT). Any city could approach the scheme sanctioning committee with any infrastructure project (as per scheme guidelines) for availing scheme assistance. A few cities and towns had prepared SWM projects under this scheme and partial implementation did take place. But fulfillment of the objectives and outcome envisaged did not happen. It was alleged that the ULBs did not demonstrate adequate skill and will in implementing these projects. JnNURM was closed in 2012.

- Decentralised Waste Management actions initiated by the ULBs with State support: For biodegradable solid wastes - (i) Household level recycling like pipe composting, vermin composting, bio-composting bins, and pit composting, discouraging incineration; (ii) area/ward level collection and composting through aerobic bins (after Thumbarmuzhi model) and (iii) urban area level mini composting plants following Windrow Composting.

- For non-bio degradable wastes – urban area level collection centres were established for recyclable wastes like paper, plastics, leather, glass etc. which were taken to material recovery facilities (MRF) for packing and transport to recycling centres through agents. For bio-medical wastes from hospitals, the Indian Medical Association (IMA)

has established collection facilities and bio-medical waste handling facilities.

- HarithaKeralam Mission: It was reported that under the HarithaKeralam mission 45% of bio-waste in the State was treated through source level treatment systems set up in 52.93 lakh houses. Creation and operation of collection and recycling centres was an important component of this scheme. As on January 2021 it was reported that 1339 Material Collection Facility (MCF) centres and 157 Resource Recovery Facility (RRF) were operational. A total of 1,220 tonnes plastic waste and 93.21 tonnes e-waste were collected and handed over for recycling. With the setting up of Haritha Karma Sena units in 1,033 local governments with the participation of 32,003 members, thirty-seven Harithasahaya institutions have started functioning to give technical support for waste management facilities of local governments. 2,350 scrap merchants were registered in local governments.
- Kerala Solid Waste Management Project (aided by the World Bank): Creation of Integrated Solid Waste Management Projects with primary focus on setting up Waste to Energy (W2E) plants across various centres in Kerala. W2E plant proposed as PPP project at Kochi was delayed by the concessionaire for long alleging various reasons, which ultimately led to the private partner's withdrawal from the project.
- Waste management schemes under the Ministry of Housing and Urban Affairs (MoHUA): Schemes for the implementation of decentralised waste management infrastructure and proposed targets for waste reduction (including treatment of biodegradable and non bio-degradable waste).

Magnitude of the issue and possible approaches

At the moderate rate of 300grams per person per day, (it is presumed that major cities may produce as much as 500 gm./capita/day of solid waste), the total solid waste generation in a city/town of 5 lakh population would be of the order of 175 tonnes per day. At this rate one million plus city like Thiruvananthapuram may be producing 350 to 500 tonnes per day of solid waste. As far as the statutory urban areas are concerned, the primary responsibility for solid waste management is with the urban local self governments (Art. 326 to 345 of the Kerala Municipality Act, 1994). The Municipal Solid Waste Management Rules say that 100 percent of solid waste generated in a town may be collected and disposed off/processed scientifically. It may be a insurmountable task for the Municipalities, especially Municipal City Corporation to arrange for collection of the entire waste generated in a city and to arrange for processing or disposal. The capability of the ULBs in terms of manpower and finances is limited. Moreover, to find a suitable location and to mobilise land required for centralised facility for solid waste processing plant.

The stipulation in the MSW Rules for 100 percent collection may be read as arrangement for collection at the producer level, neighbourhood level and at city level. The producer responsibility has to be recognised to a particular level in waste management along with the responsibility of the community and the ULB. This would mean that to a large extent we recognise decentralisation in waste management, instead of dumping this responsibility wholly on the ULBs.

The decentralised waste management facilities established by the ULBs have to a large extent mitigated the problems of urban SW. However, Kerala also faces problems with many other waste materials, like tree cuttings and rejects especially from coconut trees, construction debris, the increasing rate of e-waste generation, other non- recyclable wastes etc. We recognize the fact that in major urban areas, which face with the sheer increase in the quantity of waste generated, we need both decentralized facilities and centralised facilities, especially for sanitary land fill schemes for non-biodegradable non-recyclable rejects. Initiatives taken by the state to establish waste to energy plants to serve an urban region, comprising of a major town/city and the immediately surrounding area, are yet to yield results. A major problem in the state to establish any such large facility is to find land for such projects, whatever be the engineering feasibility and financial viability of such projects. Since we have no such plant to demonstrate to the apprehensive population about the non-existence of the feared pollution that may be caused by such plants, people are in general antagonistic about setting up of such projects. The other states may not have such a problem in locating a suitable large vacant land outside the city limits because of sparse population density and habitation beyond city limits. Since Kerala generally has low density sprawled out habitation, no such large vacant land can be found even in rural areas. Moreover, every location has environmental issues to be tackled.

Waste Reduction
It is now globally recommended to adopt the 3R Principle – the principle of reduce waste, reuse waste and recycle waste considering the waste as resource. Reducing means choosing to use things with care to reduce the amount of waste generated. Reusing involves repeated use of items or parts of items which have usable components. It is proved in countries which followed 3R Initiatives that the amount of waste generated could be considerably reduced.

Reduce
Reducing is the best way to go about managing solid waste. The less of unnecessary things we bring home, the less waste we will produce. We need to cut back on everything on what we do not actually need. By just doing a few things to cut back one can noticeably reduce waste without totally altering one's lifestyle. This can be done by:

- Buying products with less packaging. It is estimated that 30% of the waste in landfills comes from product packaging. When shopping for items we can choose to avoid products with double and triple packagings.
- Buying products in bulk. Frequent purchases of the same goods in small quantities result in bringing home or to our establishment more of packaging materials and discarding these as waste.
- As far as possible avoid using disposable goods, particularly, paper plates, cups, and plastic utensils.
- Buy durable goods, especially when making big purchases looking at reviews on experiences with the products help us to locate durable goods. By buying something that will last we tend to throw out less of wastes..

Reuse

The second R is for reuse. Perhaps, most of the things that we throw out as waste can be reused with or without alterations, modifications and improvements. Several of such things can be reused and turned into new useful things. Garments that go out of size can be given out to the needy. Similarly, books, kitchen utensils, kitchen gadgets, furniture etc. that one household may find not useful may be useful to others. Perhaps, second hand/used products stores and flea markets can be encouraged to facilitate such exchanges.

Recycle

The final and probably the best known 'R' stands for recycling. Recycling is the process of remanufacturing a product from the old products. Recycled paper, plastic, glass, and cardboard are already in the market. Recycled furniture and other household articles are also common in a few places. Some urban local governments collect such recyclable articles thrown out as waste to be handed to recycling agents who cart them away to appropriate recycling factories. Such recycling units can be promoted in urban areas.

Initiating this 3R processes, major cities like Tokyo which depended almost fully on incinerators for waste burning, have gradually decommissioned incinerators. Practice of 3R principles have forced manufacturers to adopt alternating for packaging their goods. A good example is the ready-made garment (shirt) manufactures who have abandoned the old ways of packing their products.

Initiatives by Kerala Suchitwa Mission

Suchitwa Mission is the Technical Support Group (TSG) in Waste Management sector under the Local Self Government Department, Government of Kerala. It is responsible for providing technical and managerial support to the Local Self Governments of the State. This organisation is also responsible for conceptualizing, action planning, conducting creative workshops, organizing training programmes, initiating sector related studies, bringing out occasional papers, initiating action research, conducting monitoring and such other activities in Waste Management Sector. The Mission is also the Nodal agency for implementing Swachh Bharat Mission (Urban), Swachh Bharat Mission (Rural) and Communication and Capacity Development Unit (CCDU) in the State
(Source: Suchitwa Mission)

Solid Waste Management

Out of the 10,044 TPD of Solid Waste generated in Kerala, 49% of the waste is generated in households, 36% in institutions and 15% in public places. 77% of wastes are biodegradable, 18% are non-biodegradable, and 5% are insert wastes. Biodegradable Waste and Plastic Waste are the major segments of Solid Wastes which need to be addressed on a priority basis. In the context of Covid 19 there is also an increasing trend of bio-medical wastes and plastics.

Currently, 70% of biodegradable waste is treated at households, institutions, and community level. With the present envisaged projects for installation of 14, 89,000 household level composting or bio-methanation units, the waste treatment capacity will increase to 85%. The non-biodegradable waste is collected from the sources and temporarily stored in

Material Collection Facility (MCF). There are a total of 1000 operational MCFs and 176 RRF facilities across the state and 977 LSGIs are having Haritha karmasena operations under its purview.

The non-biodegradable waste is collected by LSGs from the door-steps of 46 lakh sources (35.7 Lakh in RLBs and 10.3 Lakh in ULBs) by 977(91 in RLBs and 886 in ULBs) active Haritha Karma Sena (Micro-enterprise groups formed and trained under Kudumbasree) and other partner collection agencies. These door-to- door collected and other directly received non-biodegradable wastes are temporarily stored in 1089 Material Collection Facilities (MCF & Mini MCFs) operated across the state.

As part of Haritha Keralam Mission activities, 715 Grama Panchayats and 74 Urban Local bodies achieved 'Suchitwa Padavi' Status.

The Plastic Waste stored in the MCF are then sub-segregated and sold to partner companies for recycling or processed (shredded and bailed) in the 169 Resource Recovery Facilities (RRF-Plastic Shredding Units) in the state and then sold to Clean Kerala Company to be reused particularly for road-tarring. The government has also issued an order for mandatory usage of shredded plastics for road tarring public works.

E-Waste of 173 tonnes is collected by Clean Kerala Company in 2019-20 FY and 77 tonnes collected during the 2020-21 financial year. The e-waste collected are now being transported to recycling plants of other states since the state does not have own e-Waste recycling facilities. An E-Waste processing plant of 5 TPD capacity is under construction in Kuttippuram, Malappuram.

Bio-Medical Waste generation has quickly risen in the context of Covid 19 pandemic. And the local bodies have partnered with the IMAGE to handle these wastes. Kerala already has a Common Bio-medical Waste Treatment Plant of 55.8 TPD in Palakkad and another one of 16 TPD capacity owned by KEIL at Ambalamedu in Ernakulam.

Industries themselves are legally bound to manage Hazardous Wastes and thus prevented them from entering the ecosystem. A Common hazardous Waste Disposal facility of 130 TPD capacity is functioning at Ambalamedu, Ernakulam which is managed by Kerala Enviro Infastructure Limited.

As stated above, the local governments are mandated to manage the waste generated within their domain as per the prevailing rules under Environmental (Protection) Act, 1986, Kerala Municipality Act, 1994 and Kerala Panchayat Raj Act, 1994.

Legal interventions

As mandated in the Solid waste management Rules 2016, Govt. of Kerala constituted a State Level Advisory Board vide G.O (Rt) No. 140/2018/LSGD dated 16.01.2018. Kerala have also notified a State Policy on Solid Waste Management in terms of Rule 11 and 15 of Solid Waste Management Rules, 2016. Also as per G.O (Rt.) No.811/2020/LSGD dated 01/05/2020, Government has published the Integrated Solid Waste Management Strategy document.

As per the provisions of Plastic Waste Management Rules 2016, Government has notified model Plastic Waste Management By-law vide G.O (Rt.) No.18/2021/LSGD dated 04.01.2021. Also as per various orders the state has banned the use of one time use plastic with effect from 01.01.2020.

Vide G.O (Rt) No. 1918/2021 dated 16.09.2021, the Government has issued Guidelines for Licensing Poultry Meat Stalls and Poultry Waste Rendering Plants in the State.

Key interventions in pipeline

The Kerala Solid Waste Management Project (KSWMP) of Rs 2100 Crore with the financial aid of World Bank and Asian Infrastructure Investment Bank (AIIB) spanning over a period of 6 Years is initiated for scientific and sustainable solid waste management in 93 Urban local bodies in the State. Objective of the Kerala Solid Waste Management Project (KSWMP) is to strengthen the institutional and service delivery systems for municipal solid waste management (SWM) in Kerala. The project adopts an integrated service delivery value chain approach to address the key institutional, financial, service delivery and infrastructure constraints in the SWM system in Kerala. The project includes three main components;

Institutional development, capacity building and project management-The component will provide (i) technical assistance (TA) and capacity building (CB) at state and local levels for undertaking SWM institutional, financial and policy reforms; (ii) training and awareness generation and Information Education Communication (IEC) support; (iii) project management, coordination and monitoring support at state, district and local levels, and (iv) technical support for developing guidelines and systems for COVID-19 related SWM issues.

Support to ULBs for SWM- The component will provide incentive grants to the participating ULBs on per capita basis, for activities to improve SWM services. Grants will be provided over and above their existing plan fund allocations, based on a two-tranche system, comprising a basic grant (BG) and an incentive grant (IG).

Development of regional SWM facilities - The component will finance regional SWM infrastructure investments including (a) regional processing and recycling facilities; (b) regional construction and demolition (C&D) waste management facilities; (c) transfer stations and regional sanitary landfills for municipal solid waste disposal; and (d) closure/remediation of existing waste dumpsites and development of incremental disposal cells as interim safe disposal facility. In addition, this component will finance the biomedical waste management facilities to expand the state's capacity to deal with increased volumes of biomedical waste in the context of COVID-19.

The draft Extended Producer Responsibility Policy of Solid and Plastic waste has already been developed and is under the consideration of Government for further approval.

The state is in the process of developing 'Smart Garbage App' for an MIS mechanism for monitoring the day to day management of Solid Waste in the local bodies right from the source of generation to disposal.

Current issues
- Lack of 100% door to door collection of non-biodegradable waste: The Haritha Karma Sena system setup at each local body needs to be strengthened. Also to ensure sustainable functioning of HKS, proper collection of user fee has to be mandated. Also the collection of valuable non-biodegradable waste is collected in parallel by the informal sector which causes value reduction in the waste available for HKS to collect. This creates conflict of interest at the field level.
- Lack of availability of public land for setting up regional facilities such as Sanitary landfills, recycling parks, Construction & Demolition Plants etc.
- Lack of involvement of technical support bodies such as HarithaSahayasthapanam, technical institutions.
- Lack of enforcement at Local body level.
- SBM-U 2.0
- Expected outcomes of SBM - U 2.0 are:
- All cities become at least ODF+
- All cities with less than 1 lakh population become at least ODF++
- 50% of cities with less than 1 lakh population become water +
- All cities are certified at least 3 star Garbage Free.

Bulk Waste Generators Compliance:
Bulk Waste Generators Compliance is one of the mandatory provisions for Star Rating. All Bulk Waste Generators (BWGs) as defined by SWM Rules 2016, including RWAs, identified and issued official notice for compliance with SWM Rule

Some priority action programmes which need to be initiated in the 14th Five Year Plan period could be:
- Strengthening the implementation and enforcement mechanism in the ULBs – establishment of Environmental Engineering Division, at least the Municipal City Corporations and the major Municipalities as solid waste management, sewerage and storm water drainage etc. (Greening, Reduction of Carbon and other Green House Gas emissions, and combating Climate Change) are technical subjects requiring technically qualified personnel to handle these.
- It shall be mandated for all local bodies to attain ODF+ status within 3 Years
- IEC in Waste Management to be implemented on a larger scale
- Good practices such as Green Protocol, Green Offices to be promoted for reduction in generation of waste
- State level ranking of Local bodies based on the performance indicators in Solid waste management to be implemented
- Linking educational institutions to provide technical expertise at local bodies.
- State level policy shall be developed to setup waste management facilities in lands not owned by Local Self Government Institutions

B. SEWERAGE

Kerala declared its rural areas ODF on November 01, 2016. In urban areas, as of January 2020, 84 of the 93 Local Self Governments (LSGs) or more than 90% including all the six Municipal City Corporations have been declared and certified ODF by third-party verifications. The floods of 2018 and repeat events of2019 have caused some setbacks in terms of the number of households with access to latrines. The National Sample Survey Organisation (NSSO) survey of 2018 reports that 5.9% urban households use shared or community facilities, while the remaining enjoy exclusive access. In 2018, the NSSO reported 37.7% of the urban households to have "septic tank" containment structures, 1.1% connected to sewers (in the two urban centres of Thiruvananthapuram and Kochi) and about 61% of the urban households connected to pit latrines.

(1) Faecal Sludge / Septage

The state of Kerala has a large number of households with their own toilets. With household access to toilets and most connected to septic tanks, periodic emptying of septic tanks is essential. Since there are not enough post treatment units for human excreta and since sewage treatment units exist only in the Municipal Corporations of Thiruvananthapuram and Kochi and cater to only a fraction of the resident population, the effluent from onsite systems often end up polluting the water bodies, either when they overflow the tanks or when the tanks are emptied (as a part of demand de-sludging) and the contents disposed of into open streams/rivers, paddy fields and other areas. Though open dumping of septage is illegal, in the absence of facilities to receive septage from the private operators and treat it for safe disposal, the law enforcement agencies are finding it difficult to regulate and control open dumping. Open dumping of septage could be viewed as equivalent to open defecation in an indirect way and so these illegal dumping have to be stopped. Surveys of water-quality in the wells across the State over the last decade indicate that a significant proportion of the wells - about 70% - are polluted with faecal contaminants. Of the 351 polluted river stretches identified in the country under the National Water Quality Monitoring Program by Central Pollution Control Board (CPCB) (September, 2018) using water quality data collected for the years 2016 and 2017, 21 stretches are in Kerala. Human excreta and wastewater from urban areas are identified as one of the major contributors to this river pollution.

(2) Grey water Management

Excluding a few number of sources, the grey water generated from almost all sources is being sent outside without proper treatment. In very few cases, which may include some houses and/or institutions, there exists either a soak pit system or an effluent treatment or sewage treatment plant where it gets treated along with effluent/sewage.

(a) Industrial Effluents

Treatment of effluent generated from industries/ factories are being ensured by the regulatory body Kerala State Pollution Control Board (KSPCB) through monitoring and inspection. But still, there exists a gap between the quantum generated and that sent out after treatment.

(b) Wastewater from Commercial Establishments:

Commercial Establishments like shops, hotels, restaurants, etc., generate huge quantities of grey and black water and over a period these sources could also generate faecal sludge/septage, in case they have onsite containment/treatment systems. Similarly, the different markets like vegetable, fish and meat etc., also generate considerable amounts of wastewater. All these places lack proper treatment systems.

c) Hospital Wastewater Management:

Hospitals or any Healthcare Establishments generate lots of liquid waste either as a part of diagnosis, treatment or research or as a part of domestic usage. The Biomedical Waste Management Rules, 2016 directs on how the chemical liquid waste generated in healthcare centres need to be treated and disposed of, as Chemical Liquid waste forms one of the types of biomedical waste as per Schedule I of the Rules. But the Rules do not specify anything related to the management of domestic wastewater there.

A few Actions Initiated

- Kerala Liquid waste management Policy is prepared and multiple stakeholder consultations were done and submitted to the Govt for approval.
- Liquid waste action plan has been prepared by the LSGD (Planning) (Department Town and Country Planning). As per this, liquid waste management status of all ULBs has been prepared and land has been proposed in 93 ULBs for the implementation of STPs. Accordingly necessary actions have been initiated for the steps way forward.
- However, experience shows that city level centralised sewerage system (whole city sewer networks and a centralised STP) may be difficult proposition for a few cities/towns like Kochi and Alappuzha, due to their flat terrain and high ground water table. In such situations, it may be better to go for decentralised smaller area level sewer network and mini STPs. Moreover, acquisition of land for big STPs become difficult due to local level peoples' objections as they fear 'indirect condemnation of land' which may lower local land prices around such STP locations.
- Implementation of institutional level STPs is one of the main LWM activities which comes under the purview of Suchitwa Mission. Accordingly 5 functional STPs are functional, 5 STPs are under construction and 8 STPs are in tendering stage and 30 projects are in DPR stage.
- Suchitwa Mission has taken initiative to set up STP in at least one modern medicine hospitals in all districts. Accordingly 13 DPRs are being prepared for STPs in CHC hospitals
- Suchitwa mission has empanelled 21 agencies as Consultants for DPR Preparation and handholding to LSGIs.
- Agricultural farms – Surplus land is available in district agricultural farms in Kerala for the implementation of STPs. Accordingly 11 agricultural farms in 11 districts of Kerala has been selected and land is identified. Implementation of STPs in district agricultural farms can be a very effective step towards liquid waste management in Kerala. Sludge and effluent water generated from the treatment process can be used as manure

and irrigation water respectively. Moreover the land availability issues and public protest problems are also ruled out. The proposal for implementation of septage treatment plants in agricultural farms has been submitted and is under the consideration of the Government of Kerala.

Actions which need to be initiated

- Rejuvenate water bodies and prevent their pollution by untreated sewage, septage, grey- water, untreated effluents from industries, commercial establishments, markets, health-care institutions, etc
- Provide modern, aspirational treatment systems for various Liquid Wastes generated, ensure efficient operations and maintenance and accountable services delivery
- Promote Entrepreneurship across the liquid waste management value-chain; build implementation capacities; and promote research and development across the public, private and non-government sector institutions

From the review of the 13th five year plan of the state and the existing assessments of waste and pollution in Kerala three broad strategies can be identified to address this problem for the 14th Five year plan

- Extended producer responsibility for waste minimization
- The strengthening of such data collection capacities
- Training and awareness of workers and personnel

The state had proposed that these may be integrated with the Haritha Kerala Mission, proposals of integrated solid waste management, and the Kerala Solid Waste Management Project schemes.

Way forward

- The State needs a Liquid Waste Management Policy
- We need to ensure land availability for establishing STP/FSTP
- Lack of awareness about assigning priority for human excreta and grey-water management amongst ULB officers, and lack of capacity and incentives to enforce rules (already noted above)
- Laissez-faire attitude to emptying/ de-sludging and conveyance of septage happening through private initiatives as long as disposal is not visible or "not in my backyard or neighbourhood" (NIMBY)
- Absence of any meaningful data with the ULBs, for diagnostics and planning for management of sewage, septage and grey-water
- Absence of any public awareness-creation or mobilisation around the issue of human excreta and grey-water management and impacts on quality of water in water bodies
- Multiple institutions are tasked with sewerage and septage management. These need to be under the sole responsibility of the ULBs, (with adequate qualified manpower), who should coordinate between the various organisations/ partners/ stakeholders for planning and implementation of such action programmes.

CHAPTER -VI
SOCIO-ECONOMIC DEVELOPMENT

A. Demographic Change

Kerala is simultaneously confronting rapid urbanisation, ageing, in-migration of labourers from other states along with return of natives from various regions as a result of job loss due to COVID-19. The ecosystem disturbances within the territory and caused by regional climate change add complexities to this scenario. These affect the demography, structure, composition and their spatiality. The regional urban upsurge in the southern and western regions of India is going to have direct impact on Kerala's urban future.

According to the Kerala Economic Review 2020, the estimate is that population will grow from 3.34 to 3.69 crores during 2011 to 2036. This will contribute to an increase in the density from 860 to 951 per square kilometre. The transition to an urban economy can be understood from the change in the density during 1961 to 2011 which were 435 and 860 respectively. There had been structural changes related to the ratio of children and aged in the population. It is estimated that the percentage of children below 15 years will decrease from 23.5 to 17.7 during 2011-2036. The Technical Group on Population Projections for India and States 2011-2036, has observed that in 2021, Kerala has 16.5 percent elderly population. This is the highest among the Indian states. It is estimated that it would grow to 20.9 percent in 2031 and 23 percent in 2036. As per the Census 2011, the overall old-age dependency ratio among major Indian states varied from 10.4 percent in Delhi to 19.6 percent in Kerala. This again varies across the districts of Kerala. While Malappuram has registered 8.4 percent, 17.9 percent of Pathanamthitta's population has crossed 60 years. Kottayam and Alappuzha districts respectively have 15.9 and 15.2 percent elderly population.

Studies show that during 2001-2011, the number of migrants to Kerala has increased from 4.5 to 6.5 lakhs. Census 2011 revealed that 32.4 percent of the migrants have lived in Kerala for more than 10 years. While highest share (9.4%) of this cohort lives in Idukki district, 29.9 percent of the total migrants from other states have been received by Ernakulam district. As of 2017-18, the number of migrant children living in Kerala were 9.76 lakhs (Parida and Raman, 2021). Since many of these people live-in poor-quality dwellings, there are some slums in the bigger cities. While Kochi and Trivandrum have not reported large number of people living in slums, the 2011 Census has recorded that there were 79,801 and 50, 343 people living in slums in Thrissur and Kozhikkode respectively. Parida and Raman (2021) has reported that in 2030, the projected number of migrant populations in Kerala would be in the range of 52 to 59.7 lakhs.

Thus, it is evident that the society is changing rapidly and the socio-cultural practices, dwelling requirements, type and hierarchy of public spaces, quality and network of public transport will undergo a transformation. Considering urbanisation as a product of socio-political processes, it is important to shape the next five-year plan with a comprehensive approach on urban development.

B. Sex Ratio – Opportunities for Women

Kerala had historically maintained positive sex ratio. It changed from 1022 in 1961 to 1084 in 2011. It is also worthy to note that all the districts of Kerala show a positive sex ratio. According to Census 2011, in Kerala, where the female literacy rate was 92.7 percent, the life expectancy of women was 78.15 whereas that of men was 72.19. While it is a positive indicator, there are urgent needs to ensure greater community support for women during the working years as well as old age. The recent instances of crime and violence against women both indoor and outdoor spaces is an indicates the inadequacy of past and ongoing interventions to ensure safety and security for women. The shift of several educational, professional and cultural activities to online modes have also brought forward challenges of cyber bullying. Hence, the need is for a social education which equip adults to update and refine their personal values and behaviours to engage with the opposite gender without any prejudices and conflicts. The key aspects of such a module should also be made part of the School and University Curricula.

Supplier diversity programmes should be devised in state and local governments for women entrepreneurs and entrepreneurs from disadvantaged sections. Earmarking certain percentages in tender and purchase in office purchases and purchases of goods and services for government schemes and projects to MSME enterprises owned and run by women and SC/ST would enable participation of such groups. Social procurement is an established way of using the procurement process in public institutions for supporting the social enterprises. Many of the European and Canadian City and Regional Governments have implemented such frameworks. Kudumbashree can be involved to create new processes and procurement models. It would be a progressive approach if the State Government and Urban Local Governments can take lead in facilitating research in branding, production and marketing in MSME sector with special focus on women and transgender entrepreneurs. Providing built up spaces for women run cooperative in housing estates and major housing projects can enhance the opportunity for women entrepreneurs. Urban Local Governments should proactively engage in projecting women and transgender persons as successful change agents in their schemes and projects. The traditional image of women as mere beneficiaries needs to be changed through systematic and across the scale initiatives.

A thorough audit of the Internal Complaints Committees (ICC) at all the local self-government bodies should be undertaken under the aegis of Women's Commission and LSGD with local, national and international experts. Structure and functions of the ICCs need to be urgently streamlined. The implementation of 'Athena Swan Charter' established in 2005 has helped in promoting equality of women in Science, Technology, Engineering, Mathematics and Medicine in Higher Education Institutions in UK. Urban Local Government should encourage and develop female students as STEM Ambassadors. Such schemes should be promoted by the State Government. In order to make women, transgenders, students, entrepreneurs and professionals as active stakeholders urban governance, Local Governments can develop schemes and projects in partnership with Resident Welfare Associations, NGOs, Chambers of Commerce and Educational Institutions. Local Governments should proactively develop special campaigns and programmes to sensitize school going boys and

adult men with respect to democratizing gender relationships. Such a worldview should be in built in the programmes, schemes, projects, social media messages and public speeches of the Urban Local Governments.

C. Geriatric Care - Senior Citizens

Kerala is ageing faster than other states of India. The estimates suggest that aged population would grow from 12.55 percent (2011) to 23 percent in 2036. Physical and mental health, livelihood, socialisation and lack of adequate avenues for meeting the peers and contributing with their knowledge or social capital. Mainstreaming of the Care Economy' and associated opportunities. There are large number of scientific evidences arising from Geriatry, Neurology, Psychology, Sociology, Law and Urban Planning which need to be integrated into a cohesive strategy before defining the values and governance strategies for future built environment. The Diagram-1 provides the vision of World Health Organisation (WHO) on the essential components of age-friendly environments. Ageing cannot be seen as a temporary issue as the challenges associated with ageing especially related to physical and mental health, family and social relationships, financial stability had their origins earlier in life. The growing number of scientific evidences on ageing has compelled rapidly ageing societies to study and address the issues earlier. Ageing in the workforce is one of the approaches the International Longevity Centre in United Kingdom has made part of their agenda. ASEM Global Ageing Center in South Korea focuses on the rights of elderly population. The National Innovation Centre-Ageing, United Kingdom has the mandate to develop data driven insights required for design solutions and assistive technologies. Since the Government data suggests that the proportion of working age population in Kerala will drop from 63.9 in 2011 to 59.5 percent in 2036 by when the share of aged population would have reached 23 percent. This necessitates a preparation for ageing through careful design of work places and community spaces. The significance of such an approach has increased due to the changed work culture during COVID-19 where the physical mobility
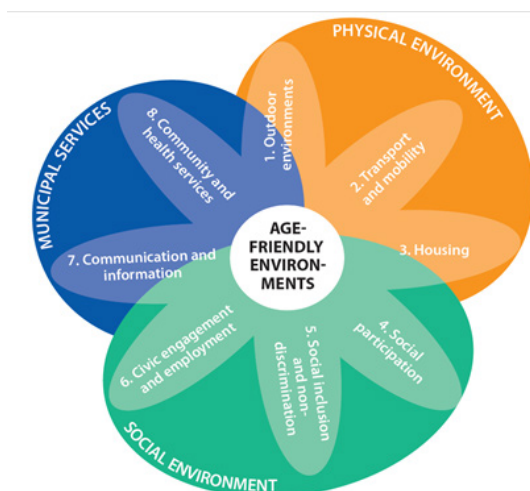
Source: WHO Regional Office for Europe (2016)

and social interaction has reduced substantially while the workload of most of the working age population has expanded manifold. Lack of good quality public spaces and green spaces in urban areas invigorates the problem of toxic stress produced due to changing socio-cultural and ethical conflicts at work and in wider society. These are powerful catalysts for lifestyle diseases, depression, antisocial and criminal behaviours as well as neurological disorders which manifest as people progress in their age. Hence, the issue of ageing can not be tackled merely through Geriatric or Palliative Care, but more effectively through purposefully designed communities and public spaces which facilitates secure and easy social exchanges. In order to understand this issue in its entirety and develop a strategy which can be mainstreamed through Master Plans for Local Governments, a comprehensive assessment of ageing should be done through an Interdisciplinary Team of Experts. It would be timely if the Government can establish 'Commission for Age Friendly Kerala' which can then call for evidences from senior citizens, researchers, practitioners, leading public and private sector employers as well as community leaders on issues and solutions relevant for an ageing society.

D. Gender Planning – Safety

A two-tier system, including central and state governments defined by the Indian Constitution was the governing system in India in the initial phase. The 73rd and 74th Amendments to the Constitution in 1992, a milestone in the process of decentralisation, transferred more administrative rights to local governments and strengthened these institutions to become autonomous institutions with constitutional back up. Including 11th and 12thschedule to the Indian Constitution aimed at forming local self-government under central and state governments which can consequently bring financial development, cemented in social justice. Involvement of local body in responsible governance in addition to central and state governments was the first priority of a constitution. As a result, the three-tier panchayat system and municipalities became part of the Constitution, as did the central and state, which are important in the governance of India. Subsequently, general elections were held at five-year intervals in the three-tier government system, as had been done in the previous two-tier system. The discretion over the transfer of powers to the local bodies was vested in the respective state governments. As the part of the constitutional amendment, systems like the Grama Sabha, Ward Sabha, District Planning Committee, Ombudsman, Tribunal, Finance Commission and Election Commission where people could directly participate in administrative and development activities were formed.

It has been 23 years since Women Component Plan was launched as part of decentralised planning in the local self-governments in Kerala. Development can only be achieved by addressing the practical and strategic needs of women, who make up more than half of the population. So it was decided to allocate at least 10 per cent of the annual plan fund of the local self-governments for improving the condition and status of women. This initiative has helped improve the status of women in local self-governments in general and the visibility of women has been achieved in all walks of life. However, we realize that the status of women in the public sphere and in the domestic environment of Kerala has still not improved.

Gender Equality and Local Government

Women's rights are human rights. Therefore, the human rights violations faced by women deny the personal development of women in the world, thereby leaving a huge gap in human resource development. This is where gender equality becomes the goal of sustainable development.

Gender equality was declared as global agenda which also formulated an action plan for the next 20 years. UN Policy on Gender Equality was approved and the 12 areas mentioned in it highlight the unique issues of women globally.

1. Women and poverty
2. Education and training of women
3. Women and health
4. Violence against women and girls
5. Women and armed conflict
6. Women and the economy
7. Women in power and decision
8. Institutional Mechanisms
9. Human Rights of Women
10. Women and the media
11. Women and the environment
12. The girl child

Development ensures all the basic human needs such as food, shelter, the right to participate in decision-making that affect them, and everything they need to live with dignity. An individual's basic existence and identity, security and liberty can be protected and all the potential of human resource can also be developed and utilised. Development can only be meaningful if it involves the active participation of women and transgender at all stages of the development process.

Engendering of Governance constitutes a fundamental litmus test of the success of women's political representation and access to and involvement in public office. The governance discourse itself is altered when women's mobilization and empowerment is considered.

Governance is about power and engendering governance is the ability women as a constituency, acquire to reconfigure power relations to advance women's interests and thereby transform the practice of governance itself.

Mainstreaming Gender into Planning Circle

The planning process in LSGIs in Kerala have four phases like (1) Participatory Policy framing – in community level discussion meetings called Gramasabhas, (2) Designing a policy strategy – in Development seminar & preparation of Development report, (3) From policy to planning – Setting up of working groups for various fields, such as education, health, agriculture, local economic growth, women development etc. (4) Plan formulation by LSGIs – preparation of plan document & Annual Budget. The local development plan

and annual budget has formulated through these steps. In the annual development plan and budget 10% of the total budget has earmarked for Women Component Plan (WCP). Development projects that directly address the practical and strategic needs of women and exclusively benefitting women are included in WCP. Apart from this, there is a government directive that all the general projects should be gender sensitive and should not be negatively affect the situation of women.

In the case of certain others, building perspectives and intervention strategies are important.

Women Component Plan – WCP

WCP is for earmarking 10% of the Plan funds mandatory for development projects that directly benefitted to women. It started in 1998-99 and effectively implemented in terms of allocation, but having problems in effective implementation, sustainability, enhancing employability and local economic growth and, conceptualisation and innovation. A thorough revamping is needed.

Kudumbasree Network (Women citizens/Kudumbasree)

The ayalkoottams should be made truly participatory and specially trained Local Resource Groups of Women (LRGW) could help ayalkoottams for articulation of gender specific needs and priorities. Before the gram sabha, there should be facilitation for different groups of women (SC/ST, Fishing, youth, senior women etc) to meet separately and assistance by LRGW to articulate their specific needs.

The mobilisation part of Kudumbasree is successful, but creating more opportunities for micro-enterprises, services, skilling and effective management systems for monitoring and marketing are the challenges ahead. Inclusion of young women, women from marginalised communities, women from middle income groups, educated & skilled women are the areas that needed attention.

1. Panchayat level development programmes for women (WCP and Gender in general programmes)
2. Programmes for women should not be limited to WCP. The idea of WCP was to bring in schemes/programmes which are specifically designed to help women to improve their status in society by addressing their strategic interests.
3. All developmental Interventions should be with gender concern. Not only in Gender projects and programs.
4. Now the working group dealing with women issues in the local bodies is Women Development. It is to be upgraded to Gender and Development to deal with all genders (Women, Men and Transgender/Intersex persons). LGBTIQA issues also to be discussed there.
5. Lot of Central, State Govt programs and schemes are there as Gender Equity measures. Local bodies also framing lot of projects for the same purpose. It is the responsibility of Local Bodies to converge all these together and make available to the beneficiaries.
6. Gender sensitisation programs are conducted in different levels. It is to be continued and extended to all levels. Along with that our curriculum and the whole educational processes are to be gender sensitive. Gender Audit of text books can be done.

7. Gender disaggregated data should be collected at local level in all sectors.
8. Intersectional approach should be there in our plans and programs.
9. Strengthening the gender component in urban LSGIs

Grama Panchayats have achieved a considerable change in the gender and development sector in general. The procedures and development plans are incorporating gender to some extent, though there are issues and lapses. The urban local bodies are still lagging behind in incorporating gender concerns in their perspective and procedures of planning and implementation. The main obstacle is lack of conceptual clarity in understanding gender disparities and its resultant issues in an urban context. Also, the Kerala specific urban-rural continuum is a problem that needs special attention. A major advantage is that the urban local bodies have enough funds available as WCP funds, special gender components in many urban schemes (state and central) and chances of mobilising CSR funds and external assistance. Gender component of urban planning and development needs urgent attention.

Gender Responsive Monitoring & Evaluation (ULBs)
Developing gender responsive tools for monitoring and evaluation of LSGI projects

LSGIs at all levels are to be equipped for developing Gender responsive monitoring and evaluations tools and develop gender disaggregate data for better planning will also be part of this initiative.

Sustainable Development Goal (SDG) related to Goal 5
Sustainable Development Goal 5 - Achieve gender equality and empower all women and girls - Engendering Development

Gender equality is not only a fundamental human right, but inevitable for a peaceful and sustainable future. The exclusion of women places half of the world's population outside the realm of opportunity to partner in building prosperous societies and economies. Equal access to education, decent work, and representation in political and economic decision making processes are not only rights women should have, they benefit humanity at large. Goal 5 aims to eliminate all forms of discrimination and violence against women in the public and private spheres and to undertake reforms to give women equal rights to economic resources and access to ownership of property. Ending all discrimination against women and girls is not only a basic human right, it's crucial for sustainable future; it's proven that empowering women and girls helps economic growth and development. The Constitution of India envisages a discrimination-free India. Without ensuring gender equity and equal rights for women, social and developmental disparities cannot be eradicated. Some of the Challenges to Gender Equity in the society are:

- Physical and mental violence towards women
- Child marriage, Early marriage, Forced marriage
- Trafficking of women for sex work and bonded labour, forced migration
- Abuse of Disabled and Aged women and lack of support for their health, nutrition and social interaction
- Lack of support to adolescent girls on education, health and nutrition
- Lack of value for unpaid domestic work generally carried out by women.

Globally women spend roughly three times the amount of time spent by men on unpaid work. In India it is 9.8 times that of men Local level development and local interventions are very important for addressing these disparities because social institutions at the local level are the key players in influencing the social practices which affect empowerment of women and girls. Local social networks also play an important role in addressing gender disparities through strategic interventions, disseminating new ideas and reforming governance practices for achieving desired results on gender equality.

Linkage of SDG Goal.5 with other Goals

Inter linkages of SDG five and associated targets with respect to other goals are established among and between each other to form a network of inter linkages. This Understanding of inter linkages among the goals and between the targets is crucial for integrated governance and policy coherence for the implementation of SDGs.

Goal 5 with other Goals

- Gender sensitive development strategies, equal rights and access to resources and services for men and women (1.b & 1.4) will catalyze timely achievement of SDG 5.
- Attainment of SDG2 (2.2 & 2.3) - Nutritional needs adolescent girls, pregnant and lactating women, increase income of female small scale food producers, will substantiate to end discrimination in all forms (5.1).
- Target 3.7 offers universal access to sexual and reproductive health services and rights
- Targets 4.5, 4.6, 4.7& 4b will loosen up gender disparities in education, promote education on gender equality, and gender sensitive learning environments and literacy to end discrimination.
- Improved sanitation and hygiene with special attention to the needs of women and girls (6.2) will upkeep gender equality.
- Targets 8.5 & 8.8 focuses on - equal pay for equal work, protects female migrant's workers, and recognize care and domestic work.
- Target 10.2 is for social, economic and political inclusion irrespective of sex, end discrimination, equal participation and decision making.

- Access to public transport and public space with particular attention to women (11.2, 11.7) will encourage marginalized groups.
- Raise capacity for climate change planning and management including focusing on women (13.b) and End all forms of violence against children (16.2) will hopefully address SDG 5 indeed.

Role of Urban Local Governments on specific Goals

The role of SDG five and the relation with respect to 29 subjects transferred to the Panchayats/ULBs shows that there are areas in which ULBs have a role and the potential of contributing to the eradication of poverty. Those subjects with respect to goal five are:
- Women development
- Child development

Urban Local Governments –Action Points
- Bring issues of gender disparity and violence to the attention of Panchayat/ULBs Committees for action
- Promote a gender status study or analyse the gender and development
- Experience of last few years scope of intervention (undertake a Situational Analysis)
- Ensure continuous discussion and trainings for GP committee to promote attitudinal changes
- Formation of a committee to carry out and follow the tasks prioritized towards gender equality
- Facilitate a convergence meeting with different line departments/ Agencies/community organizations involved in addressing gender issues
- Promote campaigns to address various issues identified as goals and targets
- Develop a monitoring mechanism for actions on gender issues
- All developmental issues should be reviewed through gender lens, educated women are moving into urban areas, gender projects and programmes, measurable indicators and need for local data, safety of women, Internal Complaints Committee,
- Horticulture and floriculture as a livelihood for women in urban areas especially using institutions land in urban areas.

Recommendations:
1. The Women Component Plan schemes will be able to significantly increase the level of benefits available to women in general especially to those who are divorced, widows and families, including unmarried women.
2. Capacity building of elected women representatives and Women Task Forces will be significantly through the Women Component Plan.
3. Integration of SDGs into Gender Planning will help to analyse the gap in human resource development.
E. In-migration of Unskilled Labourers

Kerala has been receiving large number of migrants who have been engaged in casual, semi-skilled jobs particularly in urban areas. There are specific source regions such as Odisha,

West Bengal, Assam, Bihar, UP, Karnataka and Tamil Nadu. Through these people Kerala society has been building socio-economic relationships with their states. Kerala has a rich history of supplying labour as well as trained human resources to various parts of the world. The state's development fueled through remittance money is now supporting the economic needs of the unskilled and under privileged sections of other societies through remittance. The future strategy should help Kerala understanding the strength of these economic relations and facilitate upskilling, placement and entrepreneurship development of these people through the state regulated systems. Developed economies have shown the value of such approaches as it helps the state to attract investments, labour while they evolve as a digital service economy. Following the trends depicted by the Government data, there are both short term and long-term migration to Kerala. While, the type of people, skills and aspirations might have changed over a period of time, the number of migrants have been increasing. The estimates suggest that by 2030, there would be about 52 lakh migrants. This will constitute about 14 percent of the State's population of 3.65 Crores. Since it is expected that by then Kerala would have become an urban society where a more resilient physical infrastructure would be complemented by good quality blue-green infrastructure and robust digital infrastructure, the job families and required skillsets would have become more advanced. It is only prudent for the State to invest in upskilling and mentoring the migrants who can create economic exchanges with their own states and international destinations. Kerala has proven its mettle in human resource development and the dividends for the state in extending such opportunities to the migrants would be unprecedented. This will also ensure constant flow of talent into the State's educational ecosystem consisting of Universities, Professional and Technical Education Institutions, Community Colleges and Community Skill Parks. The evolving start up ecosystem along with institutions such as Kudumbashree and NORKA can create new services for this section of the society.

F. Planning for barrier-free environment

Physical disability is no longer a limitation if one has the talent and the will, and it is hence important to understand that an accessible environment is a precondition for persons with disabilities to realize their full potential or to lead a normal life. Lack of access to public places (including, buildings, parks, open spaces and streets) as well as public amenities, utilities and services to persons with disabilities is one of the most discriminating aspects of everyday life in cities. Four of the 17 Sustainable Development Goals (SDG's) outlined by the United Nations (UN): good health and wellbeing (3rd SDG), reduced inequalities (10th SDG), sustainable cities and communities (11th SDG), peace, justice and strong

"Cross-cultural experiences can trigger creative responses as interacting with two or more cultural processes can lead to combining of diverse ideas, solutions, and customer problems in order to create something totally new. Since in-migration is many times perceived as a threat, evidences suggest that more in-migration can contribute to gain in entrepreneurial activity. Public funds spent on building incubators for migrant entrepreneurs can secure greater economic benefits for the territories than building border walls" (Vandor and Franke, 2016).

'People with disabilities are vulnerable because of the many barriers they face attitudinal, physical, and financial … addressing these barriers will unlock the potential of so many people with so much to contribute to the world.' -Stephen Hawking

institutions (16th SDG) also targets inclusive development. For cities and communities to be sustainable, creating barrier free environments should be an inevitable component of development planning and design of built and unbuilt spaces that ensure well-being and enforce equality and justice to the disabled and differently abled people in the society.

Equal opportunity and participation in public sphere to enjoy human rights and fundamental freedom is the primary objective of barrier free environment. Like persons with disabilities and differently abled, small children, elderly persons, pregnant women and temporarily disabled are all vulnerable to barriers. The goal of barrier free design is to provide an environment that supports the independent functioning of individuals so that even the most vulnerable get equal opportunity to participate in everyday activities without assistance, enjoy public services, community living, employment and leisure as any other person in the society. Barrier free design of public places is therefore a professional obligation and a societal commitment of the Local Self Government Institutions (LSGI's) to ensure equal participation by providing equal opportunities for every citizen to use all facilities and move around safely and freely in the public realm.

Current Issues
As per Census of India 2011, 2.68 crore persons in the country (2.2% of the total population) are differently abled. They have very poor access to the public realm as none of our public places are designed to include the differently abled.   Accessibility India Campaign launched by Government of India in 2015 aimed at making public facilities barrier free and differently abled friendly. Later India enacted Rights of Persons with Disabilities (RPWD) Act in 2016, to make real the constitutional obligation of right to freedom and equality to all citizens including the differently abled to lead a life with dignity by legally enforcing barrier free access to all public facilities in the country. The law ensures the need for active measures to enable persons with disabilities to move freely by removing the barriers to free movement and make effective provisions for securing the right to work, to education, and to assist the disabled.

In December 2017, the Supreme Court of India further directed Government of India to take adequate measures to provide proper and safe access to public spaces, roads, transport facilities, and movement on footpaths for the disabled persons. Court acknowledged the need for anti-discriminative measures to be implemented, that enable access to all community services and ensure equal opportunity for participation by removing various barriers that challenge the civil and political, and socio-economic rights of the differently abled. Despite all these efforts most of the built and unbuilt public spaces in our cities still do not provide easy access to persons with disabilities.

Way Forward

ULB's needs to adopt the Accessible India Campaign (Sugamya Bharat Abhiyan) for achieving universal accessibility for persons with disabilities by enforcing its three important verticals: built environment accessibility, transportation system accessibility and information and communication ecosystem accessibility. Key goals should be to conduct accessibility audit of all public infrastructure including government offices, transport terminals, parks and streets and convert them into fully accessible spaces. This covers the built surfaces, steps and ramps, corridors, entry ways, emergency exits, parking and other indoor and outdoor facilities including lighting, signage, alarm systems and toilets. Ensure conversion of public documents published by the national/state/local government websites including laws, regulations, reports, forms and informational brochures into fully accessible websites by training and employing sign language interpreters. Without being able to access all facilities and services found in the communities, persons with disabilities will never be fully included

ULB's needs to engage accessibility consultants/agencies for audit and training of its public facilities and GOI's Ministry of Social Justice and Empowerment (DEoPWD) along with State's Social Justice Department (SJD) should serve as institutions for accrediting public spaces and facilities based on accessibility. Benchmarking accessibility in cities by formulating an urban accessibility framework can be initiated by ULB's which precisely compares and rates the performance of various public services and facilities based on the level of accessibility.

Harmonized guidelines and space standards for barrier free environment for persons with disability and elderly persons (2016) formulated by Ministry of Urban Development GOI, provides design guidelines that ensure easy and equitable access to all. These guidelines need to be proactively implemented by the State and Urban Local Bodies (ULB's) in consensus with RPWD Act. Building codes based on universal design principles (Accessibility Codes) should be enforced in Architectural and allied practice through building bye laws (KMBR), master plans, zonal development plans and DTP schemes and TP schemes to ensure inclusive design of public and private spaces and to empower disabled and elderly to participate actively in the society.

Barrier free construction and universal design principles should be mandatorily included in Architecture, Planning and Design curriculum and these schools along with ULB's can proactively engage in providing training and certification programs for professionals and practitioners in the design and construction of barrier free environments. Research and development should also be encouraged by the SJD and ULB's in these institutions to enhance and promote design thinking and behavior studies and develop new approaches in barrier free design and disabled friendly products and services. Case studies of best practices in universal design should also be an integral part of the R & D initiatives for evolving better design solutions for creating barrier free public spaces. Schools should also encourage social education and organize community awareness camps as part of institution's social responsibility to sensitize people regarding the need to ensure and protect the rights of the disabled and the elderly by providing safe and easy access to community facilities and ensure a dignified life for the disabled and elderly like every other in the society.

Centrally sponsored city renewal and modernization schemes like AMRUT scheme, Smart City mission etc. that aims at comprehensive development of cities in a systematic and qualitative way through implementing core infrastructure and services should essentially comply with the RPWD Act and include mandatory provision that ensure barrier free public spaces and universal accessibility for inclusive development. City renewal/redevelopment projects should also aim at 'urban retrofitting' by redesigning the existing built/unbuilt environment to enable barrier free access as an essential part of catering to the social needs of the city. Implementing disabled friendly products and services should be an integral part of retrofitting and design of urban spaces in cities for achieving the core objectives of these central schemes.

RPWD Act (2016) also mandates the development of assistive technology, assistive devices and equipments to facilitate inclusivity in urban spaces by expanding the meaning of the term accessibility beyond the physical environment to also include ICT's. Assistive technology encourages an ecosystem for innovation and promote the production and access to quality assured and affordable ICT technologies and devices to change the narrative of universal accessibility from disability to functionality including its availability, affordability and adaptability. State departments including ULB's should hence explore and identify opportunities in central schemes like Atmanirbhar Bharat Abhiyaan, Digital India, Smart Cities Mission, Make in India, Atal Innovation Mission etc. to develop and implement assistive technologies that aid enhanced access to livelihood opportunities, improved skill education that provide not only safe and free access to public spaces but also ensure the well-being of the disabled and differently abled in the society.

LSGI's should obligatorily prepare and update the inventory of disabled and differently abled in their jurisdiction as well as identify the various types of disability and provide for equal participation and opportunities for all based on their special needs and promote inclusivity in the public realm for every person in the society. Focus groups should be formed at every LSGI's as 'friends of the disabled' to collectively discover and generate ideas to eliminate exclusion as well as encourage the participation of the disadvantaged people in mainstream urban activities. LSGI's can initiate clubs and small-scale work centres for the disadvantaged with the help of NGO's and CBO's and provide better options for sustainable living including the disabled and other vulnerable persons within communities.

Corporate Social Responsibility should be made mandatory and could be used as a potential means to financially aid inclusive development of urban areas. Large corporations and private entrepreneurs should be encouraged to adopt village panchayats and work with NGO's, CBO's and elected representatives to address issues of accessibility and inclusivity for improving the quality of life of people in these locations. Community funding scheme initiatives can be driven by ULB's to generate funds within every housing society as in-situ provisions for mandatorily ensuring safe and free community spaces accessible for all within these housing societies to make community living more inclusive and lively for every persons in the society.

Chapter -VII
LOCAL ECONOMIC DEVELOPMENT

For the last more than two years the World suffers from the continuance of the pandemic which strikes a deadly blow in economic development. As in many parts of India, the state of Kerala also had to shut down its activities for many months. Loss of working days, close down of many economic activities for many months and loss production and business in various establishments have had adverse impact on the life of the people and the economy of the state. The state also suffers loss of revenue income, which reflected in inadequacy of financial resources for many development activities. But the greatest adverse effect of the Covid 19 situation is the loss of jobs in many sectors. Many establishments reduced their workforce inside the state. Similarly, such a situation in many West Asian Countries resulted in exodus of migrant workers from those countries. Kerala has a sizeable proportion of its workforce working in those countries and joblessness in those countries resulted in return of many workers to Kerala. The state has to facilitate job opportunities for such Gulf returnees within the state, together with others rendered jobless within the state. The state already has a high unemployment rate. Though no government can create that many jobs within the government establishments to accommodate all the unemployed, it can strive to facilitate creation of jobs in the private sector by creating favourable economic conditions for people to find self-employment and/or to seek employment in private sector establishments.

Kerala is also due to face a decline in foreign remittance which used to play major role in the economic progress of the state. In the evolving scenario, it is necessary to focus on major initiatives for increasing the production of goods, value addition, employment generation etc. However, our experience in the past for boosting the local economic development is not very encouraging. Though various projects have been taken up in the sectors of agriculture, animal husbandry, fisheries etc., the Local Governments (LGs), particularly, the Urban Local Governments (ULGs) and the concerned departments (Agriculture, Animal Husbandry, Fisheries, Industry) they often did not reached desired success due to lack of collaborative implementation plan, integration with associated sectors and lack of visualization in terms of value addition, employment generation and sustainability potential. It is therefore, important to build appropriate coordination and handholding support between the ULBs and the concerned department as well as confidence within the ULBs to initiate such projects through Public Private Participation (PPP) mode. The ULBs do not have the wherewithal and manpower capacity to establish and operate such local economic development activities, but they can facilitate such LED projects.

Kerala is a land scarce state and so the pressure on land escalates land prices. This deters efforts to establish land intensive large scale and medium scale industries within the state. However, the available high skill levels and entrepreneurship encourage establishment of micro, mini and small scale production houses, service centres and trading establishments to boost the local economy. To avail of such opportunities employability of the youth and the Gulf returnees have to be improved by imparting skills enabling them to start economic activities on their own either single handed or jointly with similarly skilled others.

From the start of the State's efforts at decentralisation and empowering the local self-governments consequent to the 73rd and 74th Constitution Amendment Acts and the State's Peoples' Planning Campaign, the state had devolved a share of the state's plan funds to the LSGs and had stipulated that a specified percentage of the Plan funds be spent on Local Economic Development (LED). Since the last three decades, state witnesses high growth of urbanisation and convergence of people in urban areas mainly on economic pursuits, the hitherto attempts by the Urban Local Governments in limiting their activities on LED to imparting technical and service skills to enable the unemployed to take part in the available economic activities in the locality are no longer sufficient. Though such skilling of the youth had resulted in enabling them to actively engage in the trades in which they received training, surveys have not been conducted. However, the present situation warrants that the state and the urban local governments take active role to facilitate Local Economic Development through new initiatives.

It is in this context that the 14th five year plan discusses the various possible options for Local Economic Development (LED) in the cities and towns of Kerala under Urban Issues.

City Advisory Forum for LED
Most of city governments in the Europe have focus on local economic development and an exclusive organisational unit within the City Governments to study, advise, attract and initiate economic activities to generate economic development within the cities. The ULBs in the state do not have the skilled manpower or wherewithal to be entrusted with this task. However, the City Governments can be allowed to constitute non- political City Advisory Forum for LED comprising of experts in the field. During the 2022 – 2057 period, the Municipal City Corporations may be permitted to constitute City Advisory Forums for LED. The state may issue general guidelines in this regard. If the concept of LED and CAF are found effective and successful during the 14th FYP period, the concept can be extended to other major towns also.

City Advisory Forum (CAF) for LED shall necessarily be apolitical and shall work with the existing organisation structures of the ULBs and the state departments and Parastatals. The CAF may assess the strengths, weaknesses and opportunities existing within the city and identify the nature of economic activities that can be promoted within the city.

Since all the cities in the state have highly urbanised surrounding regions, both towns and gram panchayats, within the Urban Agglomerations (UAs), the CAF may explore the possibilities of LED within the entire UA. If some identified LED function are found feasible in any area outside the city limits, the city local government may with the approval and direction of the state government may participate and coordinate with in that Local Government also for LED activity.

The CAF for LED may comprise of representatives of Chamber of Commerce, Management Association, leading manufacturing and service industries in that UA, business/management institutions, and professional experts - Urban Planners, Urban Designers /Architects. The number of members of the CAF shall not be unwieldy and may preferably be limited to fifteen for the ease of interactions and adopting recommendations. The Government may

decide on the composition of the CAF. Suggestion is that the Mayor of the Municipal City Corporation shall be the Chairperson and the Deputy Mayor, who is also the Chairman of the Finance Standing Committee of the Municipal Corporation, may be the Convenor of CAF. The Secretary of the CAF shall be the Joint Convenor and Secretary of the CAF. The Chairperson shall nominate two elected members of the Council to be members of the CAF.

Though the CAF may advise the ULBs on the nature of LED schemes and projects that can be initiated, how financial resources can be mobilised, how PPP projects could be structured and on how private sector could be attracted and facilitated, some suggestions on LED projects are noted below for guidance.

(i) Industrial Parks
It is known that by grouping similar activities, many units can share common facilities and logistics. Such industrial parks can also be established in private land holdings either single person owned or owned by a few persons. The participation and profit sharing structure of be drafted in a legally tenable format to instil confidence in the private land owners in agreeing to participate in the venture. Takers of industrial plots may be permitted to construct factory sheds within the regulations and guidelines adopted by the industrial estate governing committee. The Municipal City Corporation can either act as catalyst to promote the idea or become an investment partner as decided by the Municipal Corporation. The Municipal Corporation may also mobilise support of CSR funding, Venture Capital funding, Start Up funding etc. for such industrial parks, which can be developed into manufacturing hubs.

Industrial parks can also be established as single purpose parks like electronic park, textiles/garments parks, food processing/food parks, toys' park, engineering industry park, medicinal/pharmaceutical park etc. depending on the strengths of the city /area and availability of skill levels. It may also be possible to develop associations with research and academic institutions to enable translation of research findings from Lab-to-Production process. Association with institutions like CFTRI, Mysore and Catering Institutions for food crafts, with NIFT or other Fashion Technology Institutions and other Textile Institutions for fabric/garment designs etc. may be useful to the entrepreneurs. This may especially be suitable for single purpose industrial parks.

The immediate need of the state to find alternative construction materials (since some natural basic construction materials have become scarce and difficult to be replenished) indicate to the need for construction materials park to transfer findings of engineering colleges and research institutions like NIIST to manufacture alternative building materials, building components, construction equipments(newer tools for weeding the yards, plastering, wall construction, flooring, painting etc. are already in construction markets outside the state/India) and to develop newer construction technologies.

Need is also there for markets for all sorts of construction/building materials market in one place (example: HOME DEPOT super markets in the USA for building materials, gardening materials, tools and equipment which are sold with DIY kits, as required). Such

building materials market occupied by different material traders and located in the city peripheral areas with adequate space for parking vehicles may be highly productive use of land in the city peripheral areas for people who large extent of land presently put to unproductive uses. Such markets may also trigger off local economy in the neighbourhood by attracting opportunities for many service providers and traders.

(ii) Street Vending

There was a time when street vending was considered a menace and that such street vending practices be abolished by removing such vendors forcibly. During the last few decades, we have recognised the importance of such informal sector activities as economic pursuits and necessary part of the economic life of the cities. It is also recognising such illegal occupation on streets/road adversely affect pedestrian and vehicular movement. Such activities also cause accidents and unhygienic urban environment.

Strategies for relocating Street Vendors

India's National Policy on Urban Street Vendor (NPUSV) 2009 aims to provide and promote a supportive environment for street vendors to earn livelihoods, while reducing congestion and maintaining sanitary conditions in public spaces and streets.

Salient features of the National Policy for Urban Street Vendors

(1) To give vendors legal status by amending, enacting, repealing and implementing appropriate laws and providing legitimate hawking zones in urban development/ zoning plans.
(2) To provide facilities for appropriate use of identified space including the creation of hawking zones in the urban development/ zoning plans
(3) To make street vendors/informal sector a special component of the urban development/ zoning plans by treating them as an integral and legitimate part of the urban distribution system.
(4) To promote self-compliance amongst street vendors
(5) To set up participatory mechanisms with representation by urban vendors, voluntary organizations, local authorities, the police, Residents Welfare Associations (RWAs) and others for orderly conduct of urban vending activities.
(6) To facilitate access to credit facilities for street vendors

The success of the policy depends upon its implementation. By formalising such informal sector vending, it may be possible to avoid harassment from authorities and payment of bribe to local police, municipal authorities and 'dadas' of different localities.

The problems of street vending exist in most of the cities around the world, only the scale and nature of operations may differ. Varied solutions have been implemented by cities. A few examples are shown below.

Alternatives can be sought as:

• Unused road side spaces can be paved and provided with water taps/ washing arrangements and left without any shop structure for vendors (ex. Space near the Commercial

Singapore hawkers' food court Kadayanallur Street

**Views of Singapore Food Court –
solution to street food vending**

**Petty coat lane Market in East
London where the street is closed
for traffic one day of the moth
to allow for informal market**

Small Vendors' Market Bali, Indonesia

**Bali market to relocate the street vendors –
provided with sanitation facilities and biogas plant**

Street food market China

Street Vending Solution under Smart City Programme of Bhubaneswara

Street in Bangalore which has been converted and maintained by the traders as pay & park facility)

- Privately owned vacant plots can be converted as paid vending area with or without shoplets generating income for the land owners
- Conversion of a select road for street vending by making it vehicle free once a month – the same system can be rotated on a few city roads
- Building small shop areas under an open roof and allotting them on payment for small vendors on daily basis –on first come first served basis – without any permanent right on any shop space – as is done in regulated markets in TN and other states
4. The Municipal City Corporation may prepare a Master Plan for relocating street vendors on road stretch basis and identify solutions to each stretch based on surveys and identification of possible options. Once the ULB implements relocation of the street vendors of one road stretch, it shall be ensured that that road stretch shall be free from street vending in future. The state may propose financial assistance scheme on approval of the Master Plan for Relocation of Street Vendors prepared by each ULB. The 14th FYP may propose state assistance programme for relocation of street vendors to support the ULB programmes.
5. (iii) Mechanism for fast tracking of granting permission for micro economic development projects

Municipal permit is required for construction of any land development and building construction for starting any manufacturing or service unit. License is required also for starting the unit from the Municipality and a number of statutory licensing authorities. Instead of an entrepreneur being made to go after each of these authorities, it should be possible to arrange a transparent 'single window' system of licensing avoiding hassles in obtaining official permissions to start an industrial/manufacturing/production/service unit by an entrepreneur. If there a consolidated declared set of stipulations and procedures issued by the ULB, the intending entrepreneur can strictly abide by them in his proposals and seek

online permissions. This would as far as possible avoid the need for person-to-person contact and delay in granting required permissions. Such a system may work if all the responsible authorities jointly agree for a fast tracking transparent mechanism of granting necessary approvals for a new venture. Such ease-of-doing business may encourage more and more small investors to start new business ventures. Nature and type of enterprises which shall be allowed in such a fast track mechanism can be declared by government.

(iv) Skill Development Programmes

ULBs had been implementing many skill development programmes under the LED component of the Plan Proposals. These skilling programmes have been of regular nature in service tasks. In the 14th FYP period, such skill development programmes shall be dovetailed to the LED programmes identified by the City Advisory Forum (CAF) and approved by the Municipal Council as suitable to be promoted in the ULB or UA area.

The ULB may for this purpose associate with suitable academic institutions of repute in the area. There may be a number of new entrepreneurship opportunities that the CAF for LED may identify through interactions with the academic institutions and research organisations in the state. It is often reported that employability of our youth is deficient in communication skills and new technology skills. The state needs to align with existing academic institutions for 'finishing school' type orientation and training programmes for overcoming this deficiency. In addition entrepreneurs may also gain knowledge in business management, human resource management, financial management and marketing. Finishing School models may be useful to impart training in these skills.

(v) Urban Horticulture

ULBs have to promote urban horticulture (growing of vegetables, fruits and flowers and medicinal plants) not only as gainful employment and to gain self-sufficiency, but also as greening the cities/urban areas to reduce extremes of weather and to combat 'climate change'. It is studied that two third of the green house emissions are from the urban areas. Urban areas also face air pollution which affects the health of the people through vehicle emissions. Cities and towns have to reduce carbon emissions and reduce formation of heat islands within the city centres dominated by masonry and concrete structures.

Singapore shows that greening –green corridors, green public open spaces, green fields, terrace farming, vertical greening and balcony greening can reduce temperature and make micro-climate comfortable for people and animals. ULBs need to work on green city concepts and make urban areas healthier for the people to live and work. The LED opportunities, involved in this, need to be explored.

Chapter -VIII
URBAN GOVERNANCE

Prior to decentralisation effected by the Central and the State Governments through the Panchayati Raj and Nagarpalika Acts (the 73rd and the 74th Constitution Amendment Acts) and the subsequent Kerala Panchayat Raj and Kerala Municipality Act of 1994, respectively, Kerala had Local Administration. Urban Local Bodies were administered by elected Municipal Councils and Municipal Corporations, which had limited functions and powers. Decentralisation effected in Kerala through the much acclaimed 'Peoples' Planning Campaign' had revolutionised the way our statutory towns and cities were 'administered'. Urban Administration has been replaced by 'Urban Governance', which has brought in sea change in urban management.

Concept of 'administration' is more of a top-down process, in which a government makes decisions and administers the decisions through executive measures. This process hardly has participation of the people in decision making and in implementation. Urban local bodies which had very little powers and functions acted as local level organisations with powers that were delegated to them by the state governments. Decentralisation as effected through laws, empowers the urban local bodies (ULBs) to function as Urban Local Self Governments, with powers, functions, funds and functionaries as provided by laws and regulations. From 'administration' the Urban LSGs have moved over to 'governance', which involves adoption of new values of urban participatory management, in public service delivery and in development management, by establishing greater efficiency, legitimacy and credibility of the urban governance system. In simple terms, governance can be considered as citizen-friendly, citizen-caring and citizen-responsive administration. Urban Governance amongst other things, also deal with the capacity of LSGs to formulate and implement management and development policies and functions, through systems in which those who govern and those who are governed participate in the governance process.

Elements of Governance
- Participation – People should be able to voice their own opinions through legitimate immediate organizations or representatives. Example: MP's, Pressure Groups.
- Rule of Law – Legal framework should be enforced impartially, especially on human right laws. Example: independent judiciary.
- Consensus Oriented – Mediates differing interests to meet the broad consensus on the best interests of a community. Example: GST council- centre and states together.
- Equity and Inclusiveness – People should have opportunities to improve or maintain their well-being. Example: affirmative policies for women, children and backward classes.
- Effectiveness and Efficiency – Processes and institutions should be able to produce results that meet the needs of their community while making the best of their resources.
- Accountability – Governmental institutions, private sectors, and civil society organizations should be held accountable to the public and institutional stakeholders. Example: elections.

- Transparency – Information should be accessible to the public and should be understandable and monitored. Example: RTI, Draft bills made public to get feedback.
- Responsiveness – Institutions and processes should serve all stakeholders, respond to their grievances.

The United Nations Development Programme (UNDP), 1997, defined governance as "the exercise of economic, political and administrative authority to manage a country's affairs at all levels. It comprises the mechanisms, processes and institutions, through which citizens and groups articulate their interests, exercise their legal rights, meet their obligations and mediate their wants." Thus, governance focuses on the formal and informal institutions involved in decision-making and implementing those.

Urban Governance can be interpreted as effective undertaking of urban management including activities associated with good public service delivery, good management of public assets and urban resources, planning for sustainable inclusive development of the urban area, undertake effective measures to ensure good health for the citizens, ensuring active people's participation in the areas of decision making and implementation, ensuring result oriented discussions with all elected representatives, effecting good coordination with the various government departments, parastatals and private stakeholders who have roles to play in maintenance and development functions of the urban area and ensuring good planned financial management. In the state of Kerala, we have ensured positioning all the procedural structures to ensure urban good governance through laws. The urban local self governments can now make necessary reforms in their functioning with the laws for ensuring good governance.

The functional efficiency of an ULB can be measured from the active working of the Standing Committees of the Municipality / Municipal Corporation. Each of the subjects handled by the urban local government is under one of the standing committees. The Municipality Act has envisaged that every elected councillor would be a member of one of the standing committees. This law ensures that every councillor takes active part in recommending policies and decisions related to one of the subjects to the council for adoption. These subject wise standing committees can discuss among themselves and/or invite subject experts to discuss with them on the subject. The Standing Committees also monitor the progress of work in that sphere. Effective working of the Standing Committees ensures greater efficiency of working of the Municipal Council / Municipal City Corporation.

These being fast changing times, emerging technological changes and opportunities, newer aspirations of the people with regard to service levels and service delivery mechanisms, newer environmental challenges and demanding fiscal management needs etc. need to be respected by the urban governance institutions and urban management needs to be dynamic and adapting to changing environment. The functionaries of the Urban Local Self Government are the political representatives, for whom it is a vocation and the municipal officials, for whom it is a career. A dynamic urban governance institution, which respects and works for good governance need to   requires that there be good rapport, interaction

and understanding between the political representatives and the officials, who should together work as a team for urban governance. The 'substantive' effects of the 'procedural' systems of urban governance would result only when the team work between political functionaries, official functionaries, people and other stake holders work in unison for general good. Governance also accepts the fact in a fast changing society, with increasing development and service needs, all that are required may not be possible for a government/urban local government to provide. Governments cannot assume the role of 'provider' always, but have to act both as a 'provider and facilitator' to bring in development and to manage the urban assets. Urban local governments may not have the manpower and fiscal resources to be a 'provider' and order development. It is in this context that Public Private Participation (PPP) is stressed.

Participatory Urban Governance

Participatory urban governance aims at participation of all stakeholders in the urban area, namely the political and administrative functionaries of the urban local self government, the government and quasi government organizations and the public and private sectors. The procedural systems like standing committees within the municipal councils, ward sabhas/ward committees, women's groups at the hierarchical structures like ayalkoottams (NHGs – neighbourhood groups), area development societies (ADSs) and Community Development Societies (CDSs), voluntary groups and expert level committees constituted for specific functions/subjects by the ULBs which are all structured in the Municipality Act are aimed at ensuring participation of citizens and subjects experts in decision making in the ULBs.

In spite of the 'procedural systems' for public participation that have been created by law, Public Participation as envisioned in the Janakeeya Aasoothranam (Peoples' Planning) can happen only when the political and administrative functionaries of the urban local self governments provide 'space' for such participation. Political parties are the social agents who create such avenues for public participation. Though there could be biases caused by the social structures, meaningful dialogues can happen with stakeholders and the people at large when the political institutions allow spaces for participatory decision making and participatory governance.

This idea is illustrated through the Figure 8.1 given below:
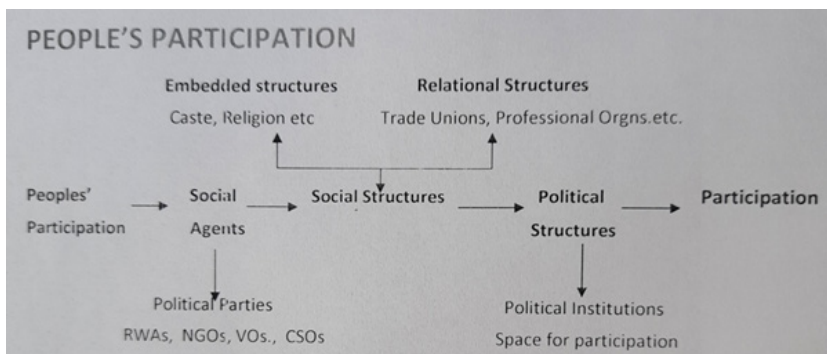

Chart prepared by A. Kasturi Rangan

From the above figure, it is clear that people's participation happens through the social agents (political parties etc.) when such space for participation is provided. It may not be enough that laws provide for such participation, such participation at various levels need to be accommodated within the functioning of the ULBs. It is often alleged that 'name-sake' ward sabhas or ward committees are held without adequate people's representation. Similarly, it is said that expert level committees convened by the ULBs do not have effective participation of the elected councillors. Such expert level consultations have great contributions to make when such meetings and opinions are taken forward seriously.

In order to obtain expert level opinions /advises for policy and strategy formulation, Municipal City Corporations and major Municipalities in the state can constitute a non-political expert level advisory / consultative committee comprising of a few experts, so that the Mayor/Chairperson, chairing such committees can interact with expert group on major issues like local economic development (LED), conservation of water bodies, public open spaces, heritage conservation, local tourism development, public service delivery etc. Such committees can include chairman of the standing committee related to the subject, one or two nominated interested councillors and the ULB's Secretary and department official, concerned with the subject. Perhaps, such a committee can have a few permanent (may be for one year or during the tenure of the council) members and specific subject experts can be invited when such related topics are considered by the consultative committee.

Reconstitution of the urban governance capabilities

During the last 25 years, the state had made considerable reorientation of urban administrative systems. The new urban challenges in functions demand that such reforms have to be both administrative and structural. It is to be accepted that any government or urban local government cannot have all the expertise and staffing required on various emerging services/subjects required in an urban area. However, in these changing times, Urban Local Governments need the required core staff with expertise to mobilise additional expertise for planning, project formulation, structuring the projects for financing and /or for private sector participation, for drafting of contracting agreements for execution etc. It is considering these that the following discussion on restructuring and capacity building of urban local governments is attempted.

(1) Spatial Planning, Project Planning and Design, Devising Strategies for Implementation, PPP, drafting Concessionaire agreements etc.

The Town and Country Planning Act, 2016 (as amended in 2021) empowers the Local Self Government with the responsibility for causing preparation of Master Plans and Area Development Plans. From adopting resolutions to prepare a Spatial Development Plan to discussing with the planning agency assigned to prepare the schemes (usually the LSGD (Planning) assists in the preparation of Spatial Development Plans) and further to publication of the draft Plan, arranging discussions within the Standing Committee/ Expert Committee, if any constituted and the Municipal Council, publication to mobilise the suggestions for improvements from the public (either through ward sabhas/ward committees or through general public meeting), compiling all the suggestions and objections and discussing with the Planning Agency are all actions to be taken by the ULB. Moreover,

after the Master Plan or TP Scheme is approved by the state government, ULB has to read and interpret the Master Plan for Implementation. For this, the law prescribes preparation of 'five-year Priority Action Plan' by the Municipal Council. Even our Municipal City Corporations do not have man power capacity for these.

Project Identification, preparation of preliminary Project Plans for approval and further preparation of detailed project reports are responsibilities of the ULB. Though this task is now being entrusted to Consultants, only architectural consultants are available to do building projects. For formulation and design of urban development projects adequate expertise is not available to the ULBs. Urban Development Projects in selected areas are prepared as Urban Design projects and adopting 'form based coding' (FBC) principles, especially in heritage conservation zones and in areas where specific architectural design guidelines are to be followed. Such project designs are prepared using consultancy services, the core staff within the Municipal Urban Local Body has to have knowledge to hire such consultancy services and to vet the project proposals. Structuring of any urban development project for PPP and drafting concessionaire documents need to be done at the client side so as to safeguard the interests of the client agencies. This requires project management skills.

Considering the above aspects, it may be required to create Planning and Project Preparation Unit within the Municipal City Corporations, in the first phase and such Planning and Project units can be extended to the district headquarters towns at the second phase.

(2) Environmental Engineering
Environmental Engineering issues are presently posing as big challenges to the ULBs. Solid waste management, sewerage, storm water management and drainage, rain water harvesting, regulation of emissions of carbon-di-oxide (CO_2) and other green house gases (GHGs), urban greening, conservation of urban water resources, planning, development and maintenance of urban public open spaces, play fields etc. have become very essential for our urban areas, especially when we are faced with issues like Climate Change, Waste Management and Urban Water Management. The present pandemic has raised concerns about building 'healthy cities'. Most of these issues are relegated to lower importance since at present we do not have adequate expertise in the ULBs to plan and implement projects for these environmental engineering aspects. A medical doctor heading the Health Division of the Municipal City Corporation is hardly equipped with knowledge on environmental engineering. The present waste management problems faced by the ULBs could be partly due to the lack of expertise in the ULBs on the various solid waste management (SWM) options and understanding the suitability to the specific urban area and expertise to design and operate such projects.

It is high time that we create such expertise within the Local Self Government Department. With solid waste generation of about 300 to 400 tonnes per day in a city of about one million population, the city government now looks up to the state government for solutions. It is necessary for the ULBs to handle such environmental engineering projects.

(3) Financial Management
The urban financial management is the key to the success of the ULBs in handling asset

management and development functions. Any centrally sponsored scheme like Jawaharlal Nehru National Urban Renewal Mission (JnNURM) or the presently implemented AMRUT or the like insist on building the financial strength of the ULBs and Credit Rating. Financial sector reforms have been stipulating on 90 to 95 percent generation of demand for property tax (which is the bulk of the tax income of the ULBs) and at least 85 percent collection. Though we have succeeded in digitalisation of property tax collection our performance in generating demand and collection of property tax are still inadequate. Improper record keeping gives room for pilfering. Municipal revenue generation is mainly through:

- Tax revenue, comprising of property tax, profession tax, entertainment tax, advertisement tax etc.
- Non-tax revenue, comprising of income (mostly, rental income) from assets, service charges etc.

Though computerised account keeping, revenue monitoring, management of financial resources, ensuring budget based expenditure etc. are now possible the ULBs are yet to learn the full scope and potential of such systems. Though management of municipal revenue and exploring new ways of resource generation have become of great importance to the urban local governments, deployment of persons with inadequate qualifications, expertise and experience even in positions to head revenue and accounts wings has not helped the financial capability of the ULBs. Municipal Budgets are often prepared and approved to satisfy the statutory responsibility and there often are inexactitudes in estimates of revenue generation and expenditure.

The state needs to consider formation of municipal revenue and accounts cadre in LSGs and post qualified persons with experience in Municipal Finance, finance planning, budgeting, financial management etc. in middle level and top level posts either on contract basis or on permanent basis. Improving the financial strength of the ULBs is essential to secure good credit rating, improve municipal resources through municipal bonds or other instruments, to improve the credit service capability and to provide better services to the citizens. As of now, the urban local governments are financial supported by the state through establishment grants and devolution of State's Plan Funds. Own Source Revenue (OSR) of the ULBs are abysmally poor even to support establishment expenses. In such a financial situation, ULBs would be left hardly with any own funds to expend for development projects and for maintenance of assets. Being financially self supporting is also an inherent meaning and objective of our term 'Local Self Government', if not financially self standing, our ULBs may continue to be organisations dependent on the State and an appendage of the state, which may defeat the state's goal of creation of 'the third tier of government' as Local Self Government. The Urban Local Governments have to necessarily become financially strong through effective and resourceful municipal financial management and through improving/augmenting their Municipal Financial Management capabilities.

(4) LSGD Engineering Wing

The Local Self Government Department's Engineering Wing is a unified structure for administration of engineering staff under the Municipalities, Gram panchayats, Block

Panchayats and District Panchayats. The Engineering Wing is constituted under a Chief Engineer and other requisites of a department. The unit has also got to gain experience in Municipal Engineering related tasks, a few of which are given below:

- Project Identification and project formulation – including preparation of project identification report with broad costing for routine engineering projects like road formation/maintenances, markets, drains, repairs and maintenance, commercial buildings, drafting contract agreements etc.;
- Project Management – including expertise in project cycle, preparation of project identification reports, project feasibility reports, detailed project reports etc., project monitoring, project financing, resource generation from projects, project monitoring etc.
- Special Project Expertise – environmental engineering related projects like solid waste management projects like composting plants, capping of earlier waste dumps, technology and establishment of various forms of waste composting facilities like biogas plants, windrow composting, vermin-composting, bio-bin composting, waste-to-energy plants, handling of hazardous wastes etc., construction of leachate treatment plants, construction and operation of sewage treatment plants (STPs), including mini-STPs for decentralised sewage treatment facilities, septage treatment plants, rain water harvesting techniques, community level solar energy tapping, conservation of urban water bodies, urban greening, etc. (An earlier incident of delaying approval for execution by a Corporation Engineer (citing lack of knowledge on such plants) delayed for more than a month execution of a 'consultant prepared' leachate treatment plant, resulting in escalation of local agitation against leachate, ultimately leading to closure of an SWM Plant is worth learning in this context).

Urban renewal projects forming part of major flagship schemes like KSUDP, JnNURM, AMRUT and Smart City, are challenging they mostly are brown field redevelopment programmes requiring good technical expertise. Such projects have not shown desired results since the ULBs do not have adequate exposure to such projects and they have inadequate experience to hire the services of consultants through preparation of appropriate invitation notices for EOI (expression of interest) or TOR (terms of reference) for the projects or work with the consultants. Some of these or similar major projects have to structured to attract Private Participation. ULBs need to have experience in structuring projects suitably for PPP.

• Asset Management – In spite of government directions in this regard, we are yet to prepare and update urban asset registers. Since many ULBs have little knowledge about the present use, present condition of such assets or about the income generated or the regular expenditure incurred on these assets, municipal asset management is nothing to be lauded. Many assets created as part of major schemes and projects are seen not to live its life span nor are they refurbished or retrofitted to enhance their value/user value to slow down ageing, or to suit new uses from such assets. Such negligence in maintenance and retrofitting for existing assets is a big loss for the cities and towns. ULBs need to be guided not only in the preparation of asset registers and in updating them, but also in asset maintenance and retrofitting.

Since all the ULBs may not be able to develop expertise and post staff required for each of these tasks, the LSGD Engineering Wing has to gain expertise in the head office and has to create a central unit with civil and environmental engineers trained on the above and other specialised tasks so as to guide and assist the ULB engineers for the same.

(5) Urban E-Governance

The World has made rapid advancements in the field of computers and information technology. Concept of Digital India is becoming a reality. Technological advancements in information communication technology (ICT) has revolutionised the working of government and private organisations. Governments try to reinvent their functioning for bringing about better efficiency, better transparency and improved mechanisms for service delivery. ICT is a major tool relied upon to bring about administrative and technical changes in governance. Concept of Urban e-governance is discussed in this context.

Urban e-governance, as a concept of application of ICT, aims to improve information and service delivery, remove delays and 'red-tapism', enable quick decision making, encourage citizen participation and making urban government more accountable, transparent, efficient and citizen-friendly.

E-Governance goes far beyond mere computerisation of certain sections of urban administration. It implies fundamental changes in ULB operations and in work culture. The official processes get modified and decision-making is made faster. The culture of change modifies the working and inter-relationship between various functionary arms of the urban local bodies and becomes citizen friendly.

E-Governance can also be termed as use of ICT in urban governance to bring about smart governance implying: simple, moral, efficient, accountable, responsive and transparent governance. When urban local government changes to e-governance through use of ICT, systemic changes and procedural changes by re-capacitated functionaries, it not only brings in improvement in service delivery, but also betterment in decision making process. Needless to say that improvements in municipal – citizen relationships result in better participatory urban governance.

E-Government is modernisation of processes and function of government using ICT. This includes computerisation and use of stand-alone computerised office operations. However, e-governance goes beyond this to use of such information in analysis and comprehending issues and decision making. E-governance is successfully used by urban governments to monitor progress in various fields, to effect improvements in inter-departmental relations, and to take management decisions. Management Information System (MIS) in an urban local body acquires data from various functional units of the ULB on a continual basis and processes the data into structural information to be made available for policy decision making. Such consolidated structured information would be useful for urban managers to monitor the working of the various functional units, to consolidate and understand the overall functioning of the ULB and to present policies for adoption.

Despite ULBs going for section-wise computerisation and improving public service delivery,

the Urban Local Bodies face dearth of quality manpower. The existing personnel in ULBs also need to be trained to improve in-house capacities. Every official manning every section shall be able to use computers and ICT for uses and applications specific to that function. The existing tendency to depend on external hired personnel to manage IT systems and even for use of computers, for service delivery and for managing front office needs to be changed to trained ICT friendly and ICT capable municipal staff.

Appointments and regularisation of appointments in municipal organisations are subject to qualifications and eligibility conditions, which also include clearing of certain mandatory tests on government and municipal laws and rules. It may be worth considering whether mandatory training and certifications in the use of computers and e-governance should also be made compulsory for appointments and promotion to higher cadres. A situation has risen in modern times when no officer, in any local government – urban or rural - at whatever level she/he works, can work without being part of e-governance.

(6) Human Resource Development

In the present world of fast changing technology, no organisation can continue to exist and work in the manner they were working in the past. Conventional ideas and work culture are changing in tune with the changes in the economic and social wants and aspirations of the people. Newer and newer areas of economic activities are emerging in the cities, which demand newer spatial requirements and newer infrastructure and services support. Challenges in certain areas of environmental engineering like waste management, urban water management and environmental issues require innovative and urban area specific approaches. Such dynamic urban systems can be planned and managed by any urban local government only if the organisation continually adapts and renews its work environment to cope with the changing urban environment. Concept of "learning Organisation" becomes relevant in this context.

A learning organization learns and encourages learning among its people, promoting exchange of information, and making people adaptable to new ideas and changes through a shared vision. This means that the organisation as a whole and its individual functionaries need to be continually learning and adapting. In a competitive and constantly renewing urban scenario, urban local governments need to transform the workplace into a dynamic and effective place to optimize the talent of the people and to align them with the goals and objectives delineated by the urban local government.

A learning urban local government should encourage and support the development process skills and attitudes to improve performance in a com¬petitive urban situation. Learning develops organizational intellectual capital, which is the only sustainable competitive strength for any organiza¬tion. Organizational learning involves individual learning, to enable personnel to shift from the traditional organization thinking and working nature to learning organizations and to enable its personnel to develop the ability to think critically and creatively. These skill-transfers match the values and assumptions of the organizational development (OD) process. OD is a continuous, long-term effort to effect improvement in all spheres of organizational activities and to set the premises for organizational change.

Such a learning urban local government shall:

- Encourage and support its personnel to acquire new appropriate skills through regular training programmes and through self learning;
- When engaging consultants for various technical tasks, the opportunity shall be used for the ULB personnel to work with them and get trained in the process of 'learning by doing';
- Regular orientation and exposure talks shall be conducted so that the Municipal functionaries (both elected members and officials) get to know newer approaches in planning, urban development, financial management, budgeting, urban health programmes, asset management etc. Recent decades have seen that cities in many developed countries have oriented their personnel to the new faculty of 'facility management' which devices methods to take stock of the municipal assets and approaches to (i) operate and maintain the assets on regular basis and (ii) alter and retrofit the existing assets to increase their life span and to yield better returns/uses from existing assets.
- Exposure visits for the elected councillors and officials to cities which have implemented innovative practices or projects.

Human resource training is not a one-time affair. Both elected members and officials need to consider such learning experiences seriously and shall reflect on these learning within the ULB and see how these information can be used in their respective ULBs. Perhaps, an ideal platform for these 'reflections' could be the Steering Committee, which can be chaired by the Mayor / Chairperson and comprising of all the chairpersons of the standing committees and the unit heads of the ULB. Regular monthly meetings of the steering committee can discuss such matters in addition to policy and strategy level discussions. Such ideas for reforms/improvement can also be posed to the expert level consultative group for advice.

Kerala Institute of Local Administration (KILA) is an exclusive organisation of the LSGD established to impart required training to the elected members and officials of the local self government institutions. Considering the rapid urbanisation happening within the state and also the economic importance of urban areas, KILA need to focus their HRD programmes to more challenging areas of urban governance including spatial development planning, infrastructure planning and implementation, project planning, project management, integrated urban water management, LED, urban environment and Climate Change, urban health, urban financial management, resource mobilisation etc.

Urban Governance is passing through challenges and increased expectations from people. It may not be possible to capacitate only Urban Local Governments to meet all these challenges. Participatory urban governance and PPP become relevant in this context. However, the ULBs need to recognise the various challenges and provide space for participatory governance. To that extent ULBs need to act as facilitators to promote development and good urban governance.

PROCEEDINGS OF THE MEMBER SECRETARY
STATE PLANNING BOARD
(Present: Sri. Teeka Ram Meena IAS)

Sub: - Formulation of Fourteenth Five Year Plan (2022-27) - Constitution of Working Group on Urban Issues - reg.

Read: 1. Note No. 297/2021/PCD/SPB dated: 27/08/2021
    2. Guidelines on Working Groups

<u>ORDER No.SPB/446/2021-DPD/WG5 Dated:10 /09/2021</u>

As part of the formulation of Fourteenth Five Year Plan, it has been decided to constitute various Working Groups under the priority sectors. Accordingly, the Working Group on **Urban Issues** is here by constituted with the following members. The Working Group shall also take into consideration the guidelines read 2nd above in fulfilling the tasks outlined in the ToR for the Group.

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Terms of Reference

1. To review the spatial issues in urbanisation in Kerala.
2. To review and suggest policy interventions with regard to the delivery of public services in urban areas in Kerala.
3. To study the major problems of urbanisation faced by urban Local Governments and suggest measures to address them.

Terms of Reference (General)

1. The non-official members (and invitees) of the Working Group will be entitled to travelling allowances as per existing government norms. The Class I Officers of GoI will be entitled to travelling allowances as per rules if reimbursement is not allowed from Departments.
2. The expenditure towards TA, DA and Honorarium will be met from the following Head of Account of the State Planning Board "3451-00-101-93"- Preparation of Plans and Conduct of Surveys and Studies.

Member Secretary

To

The Members concerned

Copy to

PS to VC

PA to MS

CA to Member concerned

Sr. A.O, SPB

The Accountant General, Kerala

Finance Officer, SPB

Publication Officer, SPB

Sub Treasury, Vellayambalam

Accounts Section

File/Stock File