DYNAMICS OF URBAN LAND MARKET IN KERALA

By

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DECLARATION

I, C. C. Babu, do hereby declare that this written account titled DYNAMICS OF URBAN LAND MARKET IN KERALA is a bonafide record of research work done by me under the guidance of Dr. D. Retnaraj, Professor, Department of Economics, University of Calicut, Dr. John Matthai Centre. I also declare that this has not been submitted by me earlier for the award of any degree, diploma, title or recognition.

Thrissur C.C. Babu

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This thesis is an earnest enquiry into the dynamics of land market to the speedy urban growth in Kerala.

The successful completion of a project like this would not have been possible but for the unstinted support and encouragement of host of individuals and institutions.

The chief among them is Dr.D.Ratnaraj, who though technically my research guide, was far more than that. He has always instilled in me the enthusiasm and confidence with his logical and intellectual rigour. I extend to him my heartfelt gratitude.

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Pof.K.J Davis was always a source of inspiration to me. The technical, intellectual and academic support rendered by Dr.Martin Patrick,and Dr.S.Muraleedharan are gratefully placed on record. The words of encouragements and selfless acts of magnificence shown by all my colleagues especially Prof. V.S Dileep of my 'alma mater', Panampilly memorial Government College Chalakudy, have helped beyond measure Prof.T.A.Ajith Kumar has always been my second self.

Above all, I acknowledge the love and patience of my family which gave me enough strength and confidence to complete the work in this form.

C.C.Babu

Dedicated to

my beloved children

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Babu

CONTENTS

List of Tables

List of Figures

List of Figures

CHAPTER I

INTRODUCTION

Land has always been in the core of debates in recent days of Kerala. The discussions on land are mainly centered on the two major domains. The first one is on the primary livelihood aspect and the other on market related issues of land. The former issue is raised and lead by the ethnic and the traditional communities of Kerala, for which the market failure is common and therefore warrants strong policy interventions. The prominent place of discussions is centered on the issues related to the land market. Land market is the arrangements constituted by the system to make available land and allied properties for both development and non-development activities. It permits private parties to directly enter into the field and perform market operations without much hurdle. Government also intervenes in allocation of land for development activities through a set of policies such as the acquisition and ceiling of land[1] and supplying adequate amount of land to the prospective investors.

The demand for land increases stupendously from all the corners of Kerala. People from all walks of life, in one way or the other, rely mainly on land market to satisfy their land requirements. There are a lot of attributes that can be cited to the growth of demand for land in Kerala. The urbanisation and the peculiar growth pattern of SDP experienced in Kerala are prominent among them.

Urbanization, in the demographic sense, is increase in the proportion of urban population to the total population over a period of one year (Bose, 1978). It is defined as the process by which the proportion of total population concentrated in urban settlements increases over

[1] The developmental role of Kerala state is widely acknowledged for its supply of land to the landless by ceiling and acquisition of surplus of land, which is out of the purview of present study.

time. Historically urbanization is conceived in the womb of industrial sector development. But in Kerala's context it may have a different story. The urbanization visible in Kerala may not be linked to the growth of industrial sector but can be attributed to the service sector growth, which has been transformed into a major contributor to Kerala's NSDP since mid 1980's[2]. One of the leading sub-sectors within the service sector is the real estate, which has emerged as an investment hot pot for both domestic as well as foreign investors. A boom in the demand for residential and commercial space has aroused the industry from its sluggish periods. Increasing disposable income, booming IT and ITES along with other service and manufacturing sectors, easy accessibility of banking loans at low interest rate and people's friendly policies including tax incentives for home buyers might have encouraged the demand for home ownership among people, especially the salaried class. In Kerala, the role of remittances can also be considered as an important factor in influencing the demand for land.

With strong potentials in socio-economic spheres, Kerala receives huge amounts of investments both from the internal and external sources. Interestingly, a large share of the investments in Kerala is mainly put in the urban areas and the out skirts of Kochi. Investment projects like Metro Rail, Container Trans-shipment Terminal at Vallarpadam, LNG Terminal, Smart City and other medium and small investments are at the edge of the operation in Kochi area. The impacts of these projects will immediately reflect on the land market in different ways - such as the variation in size and number of plots in transaction and also in the secular growth of land value over time and space. Also, the literature highlights that the land value will be different across different regions of the same city, i.e., the value of land in the core areas of the city would obviously be different from that of the value on periphery areas.

[2] There are a number of studies which highlight that the share of service sector in state domestic product of Kerala is predominant since mid 1980s. Please see Pillai and Shanta (2005), Kannan (2005), Achin Chakravarty (2005).

However, there is hardly any study that attempts to explore the pattern of urbanization, the trend in land transaction and variation in land value over time in Kerala. The present study, therefore, is an attempt to examine the dynamics of land transaction with special emphasis on the trend in land value and its determinants.

The next section deals with an overview of the existing literature followed by the objective, methodology and data sources of the study.

1. Review of Literature

In this section we examine the various studies that have been conducted at the international, national and state level in the area of urbanization and land market. An overview of the available literature, the studies on land market are limited and the most of them are concentrating on certain specific issues such as land policy, land use pattern, land acquisition and land ceiling. Hence, we planned to focus on those studies which centered around on both urbanization and land market issues separately. The studies are arranged schematically: first the theoretical debates on urbanisation and land; and then empirical debates on urbanization and land.

1.2 Theoretical Debates on Urbanization

MC Gee (1971)[3] emphasises the experience of the developed countries to analyze the urbanization in the developing countries “Industrial Urban development in the west and the under developed countries today is the same process although greatly separated in time and space” .This approach stresses the historically observed the relationship between the technological changes in the economy and the relationship between technological changes in

[3] McGee T.G (1971), 'the process of urbanization in the third world: explorations in search of a theory', G. Bell and sons Ltd., London. 1971

agricultural transport of capital and labour from rural to urban areas. Based on this relationship, Hoselitz (1957)[4] agreed that the present day developing countries are over urbanized implying that at comparable levels, low percentage of work force is absorbed in industry than developed countries – this school includes, Todaro (1979)[5], Williamson (1988)[6], Becker and Williamson (1986)[7] Rogers (1982) Ledent (1982)[8] Rogers and Williamson (1982).

The high urban growth was attributed to rapid rural-urban migration by Rogers and Williamson (1982) and Ledent (1982) According to them the difference in the natural growth rate of population in rural and urban areas is so small, that the high urban growth in developing countries cannot be accounted for by the difference in natural growth of population alone. They argued that the increasing rural to urban migration was the basic reason for high urban growth in developing countries. But Todaro argues that the higher urban growth in developing countries is due to high natural growth of population in urban areas which was in turn because of the age structure of the migrants. That is the migrants who came to city are young and in the high reproductive age group with low mortality rates. Hence, urban areas have a high natural growth rate leading to high urban growth. These theories rely heavily on the demographic aspects of urbanization, highlighting the demographic specification of the developing countries, ignoring the socio-economic and institutional

[4] Bert F. Hoselitz (1957), 'Urbanization and Economics growth in Asia', Economic development and cultural Change Vol.6

[5] Haris J.R. and Todaro M P (1970), 'Migration Unemployment and development- A two sector Analysis', American Economic Review, Vol. L. X – No.1

[6] Rogers A and Williamson J.G (1982), 'Migration Urbanization and third world development: An over view', Economic Development ad Cultural change. Vol. No. 30.

[7] Mills E.S and Becker C.M (1986) ,'Studies in Indian Urban Development,' Oxford City Press, Oxford

[8] Ledent J. (1982),'Rural-Urban migration, urbanization and Economic Development', Vol.30,3

realities of the third world. Other school-MC Gee T G (1971) Raza and Habeeb (1976)[9] Kundu (1980)[10] and 1983 Kundu (1983)[11] Nagaraj (1985) Rukumani (1993) this school tries to explain urbanization process in terms of economy wide process like industrialization, agricultural transformation and modernization.

MCGee says that the underdeveloped countries are skipping the sequence of structural transformation i.e., from agriculture to industry and then industry to service. They are getting increasingly 'urbanized' that in the labor force absorption in service sector is increasingly faster than in industry. He says that different economic structure exist in the third world countries. A similar view is expressed by Rukmani (1993)[12]. She argues that even in the developed countries a whole complex set of Socio-economic changes has facilitated industrialization and urbanization. She says "to infer a casual link between industrialization or economic development on the one hand and level of urbanization on the other, on the basis of correlation between industrialization and urbanization is to close one's eyes to the complex set of socio economic changes underlying the process of urbanization even in the case of advanced countries. In the case of third world such a view may be doubly flawed for the simple reason that the complex set of socioeconomic changes witnessed by these countries in the rural as well as the industrial sector may be entirely different from the changes observed in the developed countries. Apart from the specific socioeconomic factors, institutional factors

[9] Monis Raza and Atiya Habeeb (1976), 'Characteristics of colonial urbanization –A case study of the satellite "Primacy" of Calcutta (1851-1921)'

[10] Kundu Amitab (1980), 'Measurement in urbanization process: A study in regionalization', *Populies Prakasn*, Bombay.

[11] Kundu Abanti, (1983), 'Urbanization in India: A contrast with western experience'. *Social scientist* Vol.2 – No.4

[12] Rukumani, R (1993), 'The process of urbanization and socio-economic change in Tamil Nadu 1901-81' – Unpublished *PhD thesis, Madras Institute of Development studies.*

were stressed by Kundu (1980) Raza and Habeeb (1976) and Kundu (1983).The Institutional factors include the impact of colonization and the developmental path followed by the nationalist government in the post independence phase.

According to them, urbanization experienced by the developing countries is a result of the changes in socio-economic structure brought about by colonialist policy and the nationalist government especially through their impact on the agriculture and industrial sector, development of transport and development of growth centers. According to Kundu these institutional factors led to the development of a pattern called "Urban Accretion'-as "The distorted growth of urban centers in relation to their own economic base on one hand and to the regional economy on the other."

Nagaraj (1985)[13] and Rukmani (1993) argue that there exists a duality in the process of urbanization in the third world. They call it as 'stable' and 'unstable' pattern of urbanization. These 'stable' and 'unstable' patterns were the result and also the regional specific patterns of the region like agrarian structure, agricultural transformation.

1.3 Theoretical debates on Land value

The concept of land value is generally explained as "the monetary evaluation of land use. It is dependent upon both the present and future use which, in turn is influenced by the physical and economic characteristics of the site and the social control of land use" (Clarke, 1965). [14] According to Lichfield (1956),[15] values are created and changed by the same forces that create

[13] Nagaraj K (1987), 'Urbanization in Tamil Nadu, Karnataka and Andhra Pradesh. A comparative Picture for 1961-81' in S. Manjuar Alam and Fatima Alikan (Ed.) '*Respective on urbanization in India and U.S.S.R*' – Allied Publishers Pvt. Ltd, New Delhi

[14] Clarke, P. N., (1965), 'Site value Rating and the Recovery of Betterment', *Peter Hall (Ed), Land values, London*: 73

[15] Lichfield, N, (1956), 'Economics of Planned Development', *Estates Gazette, London*

and change uses. Clarke has clarified that the value may also change before any change of use actually takes place. For example, where the site possesses value for a future use its potential is reflected in the present price or rent. Value may, therefore, be classified as "current value", i.e., value for the present use or "potential value", i.e. value for a different and usually more valuable use at some future date.

Land value is discussed in two contexts. One is the market value, which is the price of a land parcel negotiated at the time of sale of the plots, and the other is the assessed value, which is the estimated worth of the parcel made by a competent private or public assessor Northam, 1975)[16]. The market value of a piece of land may be different from the assessed value.

The first attempt on urban land value was done by Hurd (1901), often regarded as the father of modern land economics. He used the principles given by Ricardo for agricultural land to the urban field: "Value in urban land, as in agricultural land, is the resultant of economic or ground rent capitalized." Nevertheless, his work recognized the importance of land use: "the patterns of land uses and land values will be mutually determining". He emphasized the role of competitive bidding for land in determining urban land uses and the influence of accessibility on land values. He concluded the work thus: "Since value depends on economic rent and rent on location and location on convenience and convenience on nearness, we may eliminate the intermediate steps and say that value depends on nearness" (Hurd, 1924)[17]. However, Hurd recognized that 'nearness' is a relative term and factors like physical structures (height of building, layout) and the nature of use must be taken into account.

[16] Northam, R.M, (1975),'Urban Geography, John Wiley& Sons', *New York*

[17] Hurd.R M,(1924),Principal of city Land Values, New York

Marshall (1916)[18] introduced the concept of 'location value', which is expressed in the financial advantage derived from the location of the site. According to him, the site value was equal to the agricultural rental and the location value. In other words, the urban land value is determined by adding the location factor to the agricultural land value. One other factor influencing the value of urban land is the amount of floor space in a building.

Haig (1926)[19] coined the notion of the 'friction of space', i.e. hindrance to perfect or immediate accessibility, for without such 'friction' there would be no transport costs and all locations would be perfect. He tries to establish a three-way relation of rent, transport costs and location which is interdependent. Rent constituted the charge for accessibility or the saving in transport cost while the occupancy and use of land is determined by a bidding process.

Ratcliff (1949)[20] opines that the utilization of land was ultimately determined by the relative efficiencies of the uses in various locations. Efficiency in use is measured by the ability to pay rent and the use that can extract the greatest return from a given site will be the successful bidder. And, from all this emerges an "orderly pattern of land use spatially organized to perform most efficiency the economic functions that characterize urban life".

The theories of Hurd and Ratcliff are based on certain assumptions – for instance, all users are assumed to require equal quantities of land, which are not proven. Factors like substitution of a large piece of land for a less convenient location or buying cheaper land in distant location

[18] Marshall. A., (1916),'Principles of Economics', *MacMillan, London*

[19] Haig R.M., (1926), 'Toward an Understanding of a metropolis', *Quarterly Journal of Economics*: 40,421

[20] Ratcliff, (1949), 'Urban Land Economics', New York

are not taken into account. A more detailed model was presented by Alonso (1964)[21] who introduced two further variables – the quantity of land which each user would wish to acquire and the amount of disposable income which will be devoted to land and travel costs on the one hand, and all goods and services, including savings on the other. "The price of land … decreases with increasing distance from the centre. Therefore, the quantity of land that may be bought to the market increases with the distance, since land is becoming cheaper. On the other hand, distance enters … in the form of community costs. As the distance increases, so do commuting costs and consequently the amount of land that may be purchased decreases". The formulation is like an individual equilibrium solution, a pattern of preferences set against different contributions of land, goods and accessibility. This model is again different contributions of land, goods and accessibility. This model is again based on assumptions such as all land of equal quality, land ready for use without improvement, land freely bought and sold without legal or planning restraints.

Northam (1975) formulated a theory of urban land values based on the concept of 'bid-rent', meaning the amount of capital one is willing to bid or offer for use of a specified land parcel. In the case of urban land, different land users have different abilities to pay. The rent paying ability of users depends on a number of factors like the size of the city, the specific use to which the land parcel would be put, individual preferences and the land stock available in a particular city. Northam (1975) has shown that the bid rent curve for commercial users of land reaches the greatest level. This level would be greatest at the point of greatest desirability, coinciding with the point of maximum value. The willingness to buy locations

[21] Alonso, W., (1964), *'Location and Land Use'*, Cambridge, Mass

away from this point gradually diminishes and the bid rent curve gradually slopes downward, although it remains higher than those of other potential users.

It must be pointed out here that the user of residential land competes on a different basis than other land users. Thus the value of urban residential land is determined less by the bid rent curve than by the indifference curve. Land values at some distance from the centre of the city may be less but those locations may be most desirable for residential purposes. This may again lead to a situation where commercial centers come unto serve this residential population and land values in these places (away from city centre) go up. This may lead to local maxima in bid rent curves and in the spatial distribution of land values.

If urban land values are primarily influenced by location, it would suggest there is an optimum location of land. The site or location of the highest value is referred to as the 'hundred per cent location' or the 'peak land value intersection'. From this concept it should logically follow that land values of all other locations would be less than that of the hundred per cent location. Studies in American cities have shown that there is a curvilinear relationship between decreases in land values and distance from the point of maximum value where land values decrease at a decreasing rate with greater distance from the peak value. There is a relatively small area of high land values near the city centre surmounted by a single peak of highest land values. There may be secondary peaks like posh residential areas or outlying commercial centers. There may also be pockets of substandard housing (slums) representing a depression in the statistical surface.

1.4 Empirical Studies on Urbanization

There exists a wide range of studies on urbanisation in the Indian and international context. In the present section we first present the studies at international level, then national level studies and finally we discuss the works on Kerala context.

1.4.1 Studies at International Level

Bali Singh (1989)[22] examined the role of urbanization and economic development especially of developing countries. According to him urbanization is inter-limited with industrialization and economic development. It is the concomitant of whole gamut of factors underlying the process of growth and social change. But in the developing countries urbanization is apace without commensurate growth in industrialization and rise in the level of economic development.

Mandal and Peters (1981)[23] investigated the growth of urbanization and planning process in the developed and developing countries of the world in order to assess the far reaching consequences of and their effect on regional development as a whole. Their study expressed the hope that, the world's urban future is heading towards a better tomorrow with the speeding of the process of urbanization. According to them in the developed countries urbanization is occurred in consonance with industrialization but in the developed countries including India urbanization is not the consequence of industrialization.

[22] Ram Bali Singh, (1989), 'Process of Urbanization in the third world', Rawat Publications, New Delhi

[23] R B Mandal and G L Peters (1981) 'Urbanization and regional development', *Concept publishing company*, New Delhi

Fan (1978)[24] developed a system model for simulation the development dynamics of a class of developing countries .The interrelation among socio- economic variables; feedback relation and the recursive relationship of inter-temporal solution are emphasized. A multi sector adaptive model of Economic Development and Rural and urban Migration were used. The model generated results generally consistent with experience of many developing countries. Emerging from the dynamics were, the rapid urbanization accompanied by little industrial growth, increasingly unbalanced spatial distribution of ever-worsening distribution of income unemployment, underemployment in both rural and urban areas, and other familiar features of the developing world unexplained by comprehensive-static models. The static models were inadequate for explaining the development pattern and urbanization experience being witnessed in developing countries, but the system modeling offers a fruitful approach to tackle those problems. It also observed that, the factors affecting the decision to migrate, and feedback relation of migration to population growth and quality of life in the areas.

Davies and Crouchley (1983)[25] discussed the problems of controlling for omitted variable in estimating the structural parameters of longitudinal model and focused upon an assessment of a non-parametric marginal maximum likelihood approach suggested by the results of Laird (1978). That approach was shown to be statically valid for a plausible discrete- time model of the incidence of residential or migration moves, at least for data in which no household moves in every time period. Two separate data sets were used in the empirical analysis. The first

[24] Yiu-Kwan Fan (1978), 'The Dynamics of structural Change –A model of Economic Development and Urbanization', *Regional science and urban Economics* Vol. 8 Book No.2 PP 249-270

[25] Davis and Crouchley (1983),*'A family of Markovian Model of recurrent choice', Regional Science and Urban Economics* Vol. 12 Book No2 PP 330-344

consists of intra –urban migration histories for a sample of older (aged 45-64), owner-occupier residents of southeast Wisconsin. The second set was also concern with residential mobility in USA, although in this case the sample was national one covering 887 families over nine consecutive one-year interval from 1969to1977.The results of this initial evaluation were extremely promising .The non-parametric maximum likelihood estimation the variation due to omitted variables was concentrated at a finite number of mass points. It demonstrated that a plausible discrete-time model of recurrent residence or migration move may be parameterized to satisfy Laird's conditions, at least if the time interval are small to ensure that no household move in every time interval. Moreover, empirical analysis with two dataset suggests that the actual number of mass points may be surprisingly low. The empirical analysis also demonstrated that model calibration, including the identification of the appropriate number of mass points, was readily carried out using library computer subroutines.

Schweizer (1984)[26] presented a positive theory of city systems driven by local governments. The purpose was to discuss potential relations between increased spending of central cities and their decline .The study mainly explored the normative aspects of city system structures. The study was, divided in to six sections, the first section apart for introduction; in the section two the basic model was introduced. Section, 3 and 4 dealt with the case of identical consumers. In section 3 shown that the optimum number of cites were to be chosen from among two candidates. In section 4, different notion of equilibrium of were discussed, the Tiebout equilibriums was defined as a stabile configuration in the sense of cooperative game theory. Such equilibriums led to optimum assignments. Section 5 dealt with several consumer

[26] Urs Schweitzer (1984), 'theory of city system structure', *Regional science and urban Economics*, Vol. 15 Book No3 pp159-180

types. Section 6, finally presented three examples with different consumer types which however were simple enough to be essentially handled by the theory developed for one type. The discussion of these examples led to the conclusion, that, fractional Tiebout equilibriums might be interpreted as approximate solution of the integral optimum city system problem provided that the national population is large enough.

Smith and Friesz (1985)[27] analyzed the existence and uniqueness of spatial price equilibriums for a single commodity market network in which supply and demand levels were allowed depending on commodity flow as well as market price. The central purpose of the study was to introduce a flow-dependent supply and demand function in to the analysis. In order to focus on the spatial aspects of supply and demand, they limited the study in to classical case of single homogeneous commodity. Within this single- commodity frame work, their central result was to show the spatial market system with flow dependent supplies and demand continues to exhibit equilibrium behavior. To establish this results they described the market networks, including the important special case of arc-generated networks were used. This framework makes possible the explicit incorporation of flow- dependent shipment cost in to market supply and demand functions. Moreover, many quantity are also expressible as flow-dependent variables, it is possible to incorporate a number of models of supply and demand behavior, which allow for quantity signal as well as price signal. The main result of this study was that, establishment of the spatial price equilibriums for such market networks under quite general condition. In addition certain unique results were established for the case of arc-generated networks.

[27] Tony E. Smith and Terry L. Friesz (1985), 'Spatial market equilibira with flow – dependent supply and demand: the single commodity case', *Regional science and urban Economics* Vol.15 Book No2 pp159-180.

Weinberg's (1979)[28] study integrated the sociological and economic approaches in explaining mobility of households were hypothesized to be likely to move when they have been experienced unforeseen changes in the short run equilibrium. Linear probability model of mobility were estimated on cross section of 3187 San Francisco households. In 1965, the Bay area Transportation Study Commission conducted both large origin-and –destination survey and small home –interview survey of San Francisco Bay Area household .The data from the former survey had been extensively studied elsewhere .In the interview survey, an effort was made to obtain a retrospective ten-year (1956-1965) history of residences and employment, as well as a personal history for a sample of 3187 households. Households made their residential and workplace mobility decisions inter-dependently. Probability of residential increases with a change in work place, family size, and changes in family size and decrease with age and housing market tightness. The probability of work place mobility increase with a change in residence and labor market tightness, decrease with age, and varies by occupation. The effects of income and equation are unclear. The description of each residence includes dates and type of tenure, value or rent, age of structure, structural type, and number of rooms, lot size, and location. All location was given by census tract. In the study a linear probability model of residential and workplace mobility was estimated using the Zellner-Lee joint estimation technique. The time series and cross section was pooled, allowing more estimation, additional independent variables and wider converge of the sample sub-population .The major conclusion were ,a change in workplace significantly increases the probability of residential mobility and that a change in residence significantly increases the probability of work place mobility.

[28] Daniel H. Weinberg (1979), 'The determinants of intra-urban household mobility', *Regional science and urban Economics* Vol. 9 Book No2/3 pp219-246

Kvalseth (1979)[29] presented a multivariate second-order model of the certain types of crimes as they relate to various socioeconomic, demographic and other characteristics of an urban area. The present study was primarily concerned with the first problem, i.e. trying to determine some of the basic causes of crime in an urban community and particularly how they related to various socio economic, demographic and other characteristics of the community. More, specifically, the objective of this study was to develop multivariate statistical model foe which the rate of different types of crimes were the endogenous variable while exogenous variable characterized the citizen population and the community in which the crimes were omitted in the city of Atland, Georgia, provided the data base for the study. Advanced techniques O 'ridge regression' were used to estimate the model parameters rather than the ordinary least squares technique, which was known to have a number of limitations for the multicolinear case. The result obtained by the ridge analysis is compared with those derived from a related Bayesian approach and from the ordinary least squire's method.

Miron's (1979)[30] study undertaken of empirical models of urban and regional economic growth. In general, an attempt was put on the postulated cause of city growth. The level of net migration into an urban area was highly correlated with its rate of growth; the review puts a specific emphasis on the relationship between the two. To what extent can migration be viewed as a cause or merely as a consequence of the growth of cities? The over-riding emphasis in current model of urban economic growth was on the urban labour market In

[29] Tarald O.Kvalseth (1979), 'Ridge regression model of Urban Crime', Regional science and urban Economics Vol. 9 Book No2/3 pp 219-246

[30] John R.Miron (1979), *'Migration and Urban Economic Growth*', *Regional science and urban Economics* ,Vol .9 Book pp159-183

particular, emphasis was placed on exogenous forces, which affect the supply of and demand for labour in a particular city. The first area of interest of the study involved an examination of the concept of short run labour market dynamics, especially on the supply side. The second area of interest concerns some spatial aspects of urban growth. The question raised was that the two-way linkage between urban growth and a city‘s hinterland or market area. To what extent, the migration to a city in any period was limited by the nature of urban system? How did improvement in technology alter the relationship between the city and its hinterland so that hinterland labour was free to migrate to the city? It was concluded that the model taken very narrow view of the growth process and that promising area of future research lies in model of urban labour market dynamics.

Liew and Liew (1983)[31] introduced a methodology of measuring economic development impact of proposed Coosa River Navigation project was discussed. The basic input data employed in the study included the estimates of (1) base year’s regional output, value added, technical coefficients, and trade coefficients ;(2) the projected regional output in targets years; and (3) the projected transportation cost saving by the proposed Coosa River Navigation project. The methodology used in this study was a Multi-Regional Variable Input –output model. The empirical measurement was done in terms of industrials output, personal income and employment of each of 31 industries in four regions in decennial years starting in 1990and ending in 2039.Major findings of the study are: 1)The industrial out put in the Coosa River Corridor was increased due to reduced transportation costs.2) The analysis also showed that, the rest of the U.S will experience a slightly slower growth than Coosa River Corridors.3) The economy of Coosa River Corridor would continue to grow as a result of

[31] Chong K.Liew and Chung J.Liew (1983), 'Measuring the development impact of a proposed transportation system', *Regional science and urban Economics* Vol.4 Book No.2 pp170-183

transportation cost saving.4) The rest of the U.S was another important beneficiary of the reduced transportation cost. The number of new jobs created by the economic activities associated with the lowered shipping cost.5) The total number of jobs created in the U.S by the reduced transportation would reach 520 in 1990 and continued to grow to 835 in 2039.

1.4.2 Studies at the National Level

Singh and Singh (1987)[32] intended to study the liner relationship between urbanization and non- agricultural workers, (both male and female) .In the study, females relation with urbanization had been demarcated from that of males because of the females in to the non-agricultural working population was different relation to males due to different educational level as well as freedom of mobility. The study area was the eight districts of Uttar pradesh – Uttar kashi, Chamoli, Tehri, Puri and Dehradun (Garhwal Division): Almora. Pithoragarh and Nainital (Kumaun Division), covering an area of 51525 sq. km with rich biotic resources and healthy mountain climate. The degree of linear relationship between the attributes of urbanization and non- agricultural workers had been measured. The statistical tools applied were Spearman's Rank correlation coefficient and Fishers t-test. The percentage of urban population and non- agricultural workers of all eight districts of U P in Himalaya region were arranged in the order of their magnitude and Spearman's rank correlation has been calculated. Fisher's t-Statistics test was applied for testing the significance of the observed correlation coefficient. By applying Spearman's rank correlation coefficient the study found that A high and positive correlation between urbanization and non-agricultural workers. The test of

[32] S.C Singh and B.N. Singh (1987), 'Urbanization in U.P. Himalaya's', *Indian Journal of regional science*, Vol. XIX No. 2

significance, the Fishers t-statistics was 3.16, which was greater than the value of t-tab at 0.05 levels of significance and 6 degree of freedom. Thus there was a significant correlation between urbanization and non-agricultural worker. In the same context, probable limits within which the correlation coefficient was +0.80+0.09+ie +0.71 and+0.89.And significance of correlation was confirmed as r (ie.0.80)>6P.E (r). It corroborated the fact that the most of non-agricultural workers were assisting the urban population making out migration from rural areas.

Sinha (1988)[33] posed the following questions to the investigation 1) which regions and towns exhibited relatively higher growth rates of urban population? 2) What could be the basis of urban population growth in different regions and towns? 3) How could urban development be integrated with the overall strategy of economic development? The study was based on data from the Census and other official sources .At the empirical level, first the relationship between level of urbanization and rate of growth of urban population had been studied across 16 major states, having population above 5million in 1981 across the 51 districts of U.P over the period 1971-81.They have also analysed the of size –growth relationship across 30 selected urban settlements. In order to identify the internal and external factors associated with process of urbanization excess growth, empirical analysis had also been carried out. . The inter-town comparison had been made across the 30-sample town identified by using procedure. Firstly, the town were selected systematically from the list of town in descending order of population as in 1971, ensuring a minimum from each size class; 100 thousand +, 20-99 thousand and below 20 thousand of population in 1981.The town at the margins of these

[33] R.C.Sinha, (1988), 'Urban Growth and Urbanization: A Study with special reference to Uttar Pradesh', *Indian Journal of Regional science* Vol. XX No. 2

size classes were replaced by others for comparisons, ensuring at the same time a fair dispersal of the town over different economic region of the state. While selecting the town, the hill region of U.P had been ignored of the typical characteristics. Coming to the districts and town segments, thy had been defined on the basis of index of urbanization for districts, gross value of agricultural output, for districts as well as for the selected settlements according to their location in particular districts, and percent of the workers in the predominantly urban sectors for the settlements. The study found that the urban population in the less urbanized region has grown at significantly higher rate than in regions where the proportion of the urban population was relatively higher in the base year. Faster growth in urban population was also evident in cases of agriculturally or industrially developed regions and towns that are either located in agriculturally developed regions .The study concluded that, the urban growth was accompanied by economic development, especially in large, industrially developed towns.

Ali and Reddy (1995)[34] attempted to examine the extent of inter- district differential in Andhra Pradesh in terms of some demographic and economic variables. The objectives placed in the study were: to examine the degree of urbanization in Andhra Pradesh. To find out the rural –urban differential in the various districts of Andhra Pradesh during1971, 1991 and to find out the factors influencing growth centers for regional development .The methodology used in the study was that, the growth of town was computed on the basis of population figure obtained from the census of India publication. The economic structure of the urban area was ascertained by the use of the functional classification of towns and from the detailed survey of the state and regional maps. The study covers a period of 20 years (1971-1991) and the major sources of the data included Government of India census publications. Statistical Abstract

[34] Iqbal Ali & Ramesh Reddy (1995), 'Rural urban differential in Andhra Pradesh: 1971-1991', *Indian journal of regional science* Vol. XXVII No. 1&2.

published by the Bureau of Economics and Statistics, the Report of the National Institute of Urban affairs and the Government of India Research Bulletins .For the evaluation of the rural-urban differentials they used the statistical tools like simple percentages, mean value, standard deviations and coefficient of variance. The major findings were a) a large number of populations in the state were living in the rural areas. b) It was also found that in 1971, 1981, and 1991 five districts had more than the state's average urban population. The process of urbanization of different districts of the state showed that, the Hyderabad, has a greater rate of growth of urban population over the two decades and it could be possible due to the growth of industrialization in and around Hyderabad city. c) It showed that the sex ratio in rural area had always been adverse to women and continues to be favorable to men in urban areas. d) There was an increase in the over all literacy in the state from 24.58 percent in 1971to 30.11per cent in 1981and 36.82 percent in 1991 particularly in urban areas. e) The main working force in the rural areas of the state mostly confined to the agricultural sector all socio- economic relationship revolved around the manner in which land was distributed and cultivated f) In the case of urban areas, there was no much change in the composition of main working force between 1971, 1981 and 1991. It is observed that in 1971, the proportion of non-workers was found to be around 59 percent where it is in 1981 and 1991 was 55 percent g) The study also revealed that non-workers in the urban areas are found to be more than that of the non-workers in rural areas.

Saha's (1995)[35], study aimed at focusing on the urban growth prospects in the state of Bengal in terms of level of urbanization, population, concentration and components of population change during 1981-1991.the objectives of the study were, to measure the level of

[35] Anju Kumar Saha (1995), 'On the Urban Growth and Porspects of West Bengal: 1981-1991', *Indian Journal of Regional Science*, Vol.XXVIINo. I and 2, P.P 94-98

urbanization, to estimate the tempo of urbanization and to analyze the components of population change to make a projection of rural and urban population up to 2011.The study used, the Census and sample Registration system for the estimation of the population change. The data from 1981and1991census had been considered to that effect. The Median Inhabitant Index had been used in the present study to view the change in the degree of urbanization over the period of 1981to 1991, the tempo of urbanization had been measured as the rate of change in the percent of urban population between two dates. The statistics of birth and death for the West Bengal as a whole had been taken into account to analyze the components of population change. The major findings of the study were as follows, the urbanization in West Bengal runs slowly since 1901 but in recent years it is medium as indicated by the percentage of urban population did not exceed 35 percent. The inclusion of new towns and urban out growth had also contributed to the growth of urban areas. It also found that, there was a tendency to concentration of population in class 1 cities.

Rani and Shylendra (2002)[36], attempted to review some of the existing theoretical and empirical studies on occupational diversification and rural-urban migration. The study emphasized the need for a new focus in diversification studies to explain the phenomenon not only in terms of micro level dynamics but also from broader perspectives considering various macro processes. The study tried to address the following issues, what drives demand for non-agricultural employment different types of rural households? What had been the role of natural recourses, land, forest and water in supporting and determining the livelihood of different sections of the rural community? .When diversification had a strong urban linkage?

[36] Uma Rani and H.S.Shylendra(20020 ,'Occupational Diversification and Rural-Urban Migration in India, A Review of Evidence and some issues for research' , *Journal of Science, and economic Development*, Vol. No.1Jan .P.P27-38.

4) What were the direction of impact of policies aimed at bringing about rural diversification and development? And what were the best strategies, short-term and long-term, that can bring about balanced and equitable growth particularly in the context of distress of rural diversification? The study made an attempt to review critically some of the available theoretical and empirical studies on occupational diversification and rural- urban migration both in order to answer some of the above questions and to identify issues for further research

Chitharanjan (1983)[37], intended to measure urban growth in Gujarat in sixties and the seventies by using alternative methods with a view to understand the size- growth relationship. To the extent that differences in growth rates of urban centers were not explained by their size, alternative hypotheses based on the functional characteristics of cities were formulated and tested.He used both 'instantaneous' and 'continuous' method to measure urban growth by using census data. The study revealed that, urbanization had been taking place at a rapid rate in Gujarat. The urban population had grown over one hundred per cent as a growth rate of about 65 percent of the total population between 1961and 1981and in Gujarat. In 1961Gujarat had only 25 percent of its population living in urban centers: the figure increased to 28 percent in 1971and further to 31percent by 1981 the increasing degree of urbanization over time in Gujarat is thus apparent. The study also found that, class-1cities are growing at a faster rate on both absolute and relative terms, the percentage shares of other size –classes have declined during the seventies over the sixties, there is thus, a temptation to establish a positive relationship between size of town and their growth by a casual observation of the census data on urban growth.

[37] K.V Chitharanjan (1983), 'Functional specialization of cities and urban growth in Gujarat', *Indian journal of regional science,* Vol. XV No. 2

Dasgupta and Basu (1985)[38], carried out an empirical analysis on the relation between the degree of urbanization and utilization of agricultural land .The purpose of the study was to find any relationship between degree of urbanization and agricultural yield and size of holdings. In this study, they also attempted to find out the relation between three variables such as, average size of the farm, Per Acre productivity and percentage of Urbanization of some districts of West Bengal. The objectives of the study were to test 1) whether the conclusion reached by Basu (in her study in 21 districts of India) hold with a different set of data and 2) whether the degree of urbanization influences in any significant extent the yields and size of holdings. The data on degree of urbanization were collected from different reports on population available in the state of West Bengal. To estimate agricultural and yield and size of land holding they had used the raw data supplied by the socio economic and Evaluation Branch, Directorate of Agriculture Government of West Bengal. They had estimated the area and production of principal crops in West Bengal for 1980-81.From the raw data they had computed the average size of holding of different districts .For the data on irrigation and fertilizer consumption they used the data given in Economic Review (1981-1982).The data on rain fall collected from the data source of "Meteorological Memoirs". To find out the relationship between degree of urbanization and productivity of land in different districts of West Bengal, they made a cross section study over all the districts and made separate investigation for rice and cereals other than rice. They considered both liner and non-linear regression for this purpose. The study found that, the relationship between yield and degree of urbanization was positive. The relationship between average size holding and degree of urbanization was not very obvious. In other words, the relations were poor the t

[38] Manas Dasgupta and Sanjib Basu, (1985): *'Urbanization and Agricultural yield – A case study of west Bengal', Indian journal of regional science*, Vol. XVII No. 1 1985

values were not significant and the yield and average size of holding were positively related. The average size of holding and degree of urbanization had only very weak relations with the yields in agriculture.

Kundu (1989)[39], analyzed the access of the urban poor to five basic amenities –housing, water supply, sanitation, health care and the public distribution system. The poor have been able to get only small share of these amenities, the non-poor getting the larger share in per capita terms. Further, the poor have access to only the lower order service is concerned by those in the middle and upper consumption brackets.

Naidu (2001)[40], studied in depth the walled city of Hyderabad and assesses the extent to which conflicts occurred identity symbol or was the psychological Scars left by earlier inter-communal enmities .She also examined to what extent those conflicts were reinforced by urban decayed the multiple deprivations experienced by the inhabitants of the area.

DuPont (2001)[41], investigated the capacity of medium sized towns such as Jaipur to attract and settle population in the context of economic, industrial activity and simultaneously to understand what the migrant expect in terms of their economic and social strategies consequent to shifting to a town.

Chatterjee (2002)[42] observed the environmental quality of Hyderabad region and recommended holistic action in fronts to make the middle class in the city in capable of

[39] Amitab Kundu, (1989), 'In the Name of Urban Poor Access to basic amenities', *Sage publications*, N.Delhi

[40] Ratna Naidu (2001), 'Old cities, new predicament – A case study of Hyderabad', Sage publications, New Delhi

[41] Veronique DuPont (2001), 'Decentralized Industrialization and Urban dynamics – The case of Jaipur in W. India',

[42] Tishya Chatterjee (2002), 'Analysis of Environment and Health Issues in the Hyderabad Urban Agglomeration', *Urban India*, Vol. XXII NO. 2

absorbing its rapidly changing lifescapes. The study used the secondary data collected by National Family Health Survey, Administrative Staff College study of Hyderabad and Ahmadabad Management Association to compare the peer-cities of Ahmadabad, Bangalore, Hyderabad and Pune on four important urban indicators and places Hyderabad city at the lowest rank for local-economy, civic services and infrastructure. In the study, the city waste management and urban poverty were normally measured separately in tones per day disposed/ million liters per day collected and disposed and per capita income, respectively. Not in tones or millions liters scientifically handled and safely disposed or using disability adjusted productive life expectation projections of the urban poor The study found that, the uncontrolled sewage and solid wastes affecting air, water and soil quality that can prove deleterious to the productivity potential of the citizen. Quality environment measurements revealed that, as city waste management was actually a peripheral exercise to keep garbage and sewage out of ‘sight'. It actually enhances poverty. The urban poor involved in the process of collection and disposal of waste are exposed to health hazards of the worst kind.

Health effects of waste management and contaminated water lead to bringing down the overall per capita productivity of the city.

1.4.3 Studies at the State Level

Retnaraj (1994)[43] analyzed the pattern of urban development in Kerala and highlighting associated problems like, urban poverty, urban slum and crime and group violence. First part of the study observes the urban growth in city size- wise then proceeds to its consequences. The main findings of the study were, 1) there is heavy concentration of population in class 1

[43] D.Retnaraj (1994), 'Pattern of Urbanization and Economic Performance in Kerala', *the Asian Economic Review*, Vol. 36 No.3.

cities in Kerala. 2) Rapid urbanization in Kerala is based on tertiary sector development. 3) Land prices in Kerala are stagnant rather than plummeting at present an artificial situation created by Gulf Malayalees, who have the major share in the real-estate market cannot be sustained.4) The land prices in Kerala are expected to decline as result of recent eviction of Malayalees from UAE and Abudubi .5) The living condition of slum dwellers in Kerala is miserable and the crime rates among are on the increase.

Sreekumar (1991)[44] discussed the historical origin of urban forms in Kerala, the trends and pattern of urban process in Kerala in the 20thcentury and some aspects of modern urban system

Zachariah and Rajan (1997)[45] examined the reasons why Kerala was able to achieve its demographic transition, even in the absence of corresponding buoyancy in economic sector. Thy have disused nature of this transition of, the role-played by education, impact of both internal and external migration to world countries.

1.5 Empirical Literature on Land

The land related studies are highly relevant not only in urban contexts but in all branches of economics because all walks of life in a way or other wise related with it. During early years there was enough land to support the limited population but today population explosion has remarkably increases and there by pressure on land has been increased vehemently.

In the United States several land use studies have been made following the publication of an article by Becker entitled, Land Utilization in the United States: Geographical Aspects of the

[44] T.T. Sreekumar (1991), 'Urban Process in Kerala – 1900-1981', *Centre of Development Studies*, Trivandrum

[45] K C Zacharia and S.Irudiya Rajan (1997),'Kerala's Demographic Transition-determinants and consequences *'Sage publications* ,New Delhi

Problem'. In this paper he has narrated the trends in land utilization and emphasized the need of land classification and survey. Besides this paper government also encouraged the land use studies in the country. Although the programme of land use survey was launched in the year 1935, it was properly executed only after 1938. Nearly one thousand communities were organized and 140,000 individuals mostly layman, took part in the work. This organization undertook the studies of land use including map making and their analyses. Special attention was laid on kind of farming, size o farms in each land use area, area to be recommended for forestry, wild life, recreation, settlements, etc. The problems thus studied suggested plans in every branch, viz. farming and farm sizes, land recovery and settlements.

American land use survey was taken up mainly for the purpose of land use planning on the countrywide scale, which embraced the planning of both the physical and human phenomena. What was proposed in land use planning was as broad as country life itself and organization should begin with the most general functional organization that can be discovered in an area. Land use studies in U.S.A., on the other hand, were made with the purpose not only to select certain areas for proper use but also to train the students the method of research in land utilization, to make available the knowledge of Chinese agriculture, and to arouse interest among people of other countries in China’s welfare, land utilization, food and population problems.

While coming to land use studies in other countries it should be noted that very few countries hold significant position in this respect. Certainly Japan has more enthusiasm in this field. The main motivating factor was how to support a huge population with less cultivated land as such it is not surprising that land use survey has been given the highest priority.

Land use surveys were in progress in various countries of the world, particularly in highly crowded countries, where land use planning on a scientific line is vital, i.e., Pakistan, Cyprus, Bangladesh, China, Poland etc. Land utilization maps of Cyprus, have been prepared under the supervision of Rawson and Selay, in the Department of Geography, London School of Economics. The maps of Italy were being published by Italian National Research Society. In Poland, under the direction of Kostrowiekai, Department of Geography, Polish Academy of Sciences, developed a new pattern of land utilization based on agricultural typology, agricultural regionalization and programmed agricultural development.

Land use survey was also conducted in China. Data were collected on sampling basis from 22 provinces and on the basis of sample survey data several aspects of land utilization were analyzed such as farms, food, and standard of living of the people, marketing and price level. However, in the whole study no attempt was made to record the use of land on maps, which was an important aspect in land use study.

As regards land use studied in India it should be noted that several geographers have paid attention on different aspects of land use studies. Certainly most of them have followed the guidelines of Stamp, in fact Indian geographers got inspiration from him when he attended he 25th session of the Indian Science Congress held at Calcutta in the year 1938. First of all land utilization survey of 24-Parganas and Howrah districts was conducted by Chatterjee and thus, in Eastern Uttar Pradesh by Shafi. They have emphasized that land use survey should be carried out combined with the survey of land capability. It will help in determining the best use of land. Chatterjee tried to organize the land use survey in India in 1940 when in the Geography and Geology sections of Indian Science Congress Association, he pointed out the necessity of understanding land use survey. The Government of India established a national

committee for the purpose under the guidance of Chatterjee. He surveyed 800 villages of West Bengal and brought out 11 land use sheets on the scale of 4=1 mile. The National Atlas Organization also, prepared land use maps on a scale of 1:1,000,000.

Shafi (1966)[46] in his paper entitled "Techniques of Rural Land Use Planning with Reference to India" was of the opinion that land use survey of a vast country like India is easier to be conducted on the basis of sampling as it is very difficult to procure data for all the villages to be surveyed. Moreover, there is a great similarity in the land use pattern of a particular region comprising of several villages, so a sample village would do the needful. Shafi has brought out a scheme based on sampling techniques for land use survey of India. He preferred purposive sampling to the other four types i.e., Random Stratified, Cluster and Systematic. Describing the trend in the study of land use, Shafi is of the view that the studies are recently shifting towards the application of quantitative technique in the analysis of various land use components.

Shafi (1972)[47] also assessed the measurement of land resource in terms of food production efficiency per unit area and its conversion into calories because in his words, "It may not be fair to equate a pound of wheat with a pound of millet as their caloric yields are vastly different". In this way he has studied land capability classification and measures the potentials of land after considering the effects of positive and negative variables.

[46] Shafi. M. (1966),'Technique of Rural land use planning with reference to India', *the geographer*, Vol. XIII, PP. 13-24

[47] Shafi. M. (1972), 'Land use studies: a trend report: a survey of research in geography', *Bombay, Popular* Prakashan, pp. *19,*

Mishra (1969)[48] in his study of land use in Khadar and ravines of the Lower Middle Gomati Valley has attempted Land Use Planning for better adjustment of agriculture to the physical environment for optimum exploitation and conservation of Natural Resources.

Mandal (1982)[49] has very recently done a commendable work on land utilization in which he has discussed natural principles, techniques, models and the role of remote sensing and air photographs in land use analysis.

Sinha (1968)[50], divided the area of the study into two sub-zones inner fringe (if) or urban substance fringe and outer fringe. The type of urban fringe had been studied on the basis of following factors: Location, Transportation Creation, Institution, middle and urban living. It n found that there was a deferent pattern of land use changes in the fringe. That change had been influenced by the extent of distance from the town. With the varying physiographic condition around Patna. Land use zones had been found to be varying width, and thickness tends to vary with distance from the city. The extent of settlement area was inversely with distance while the agricultural activities and orchard land was directly proportional to distance. The Agricultural land of Patna was slowly being converted into residential belt or industrial and commercial uses. The land value increased with every decrease in the distance in Patna and the land adjacent to the cities suitable for building purposes. The value was higher in west and the south where land was better for that purpose. The value was less in the north because this area was not suitable for residential houses due to great barriers put up by

[48] Mishra, S.N. (1969), 'Land Use in Khadar and Ravine Tract of the lower middle Gomati valley', *National Geographical* journal of India, Vol. 10, Nos. 3 and 4

[49]49 Mandal, B. (1969), 'Crop Combination Regions of North Bihar', *The national Geographical Journal of India*, Vol. XV, Part 11, pp. 125-37

[50]50 Sinha, B.N. (1968), 'Crop Combination Technique: A search for an Ideal Tool'. Deccan Geographer, Vol 6, No. 2.

river Ganga. The eastern part of Patna fringe was not suitable for industrial due to water logging; land value was proportionally less in towns with the varying physiographic condition around Patna.

Bonner (1999)[51] examined the effects of land consolidation on agriculture in the two Haryana villages. It has shown that how those changes were related to other changes in village economy and society. The consolidation of land holding led to the expansion of the total cultivated acreage and created a condition favorable to the expansion of irrigation. Cash cropping become more rapidly modernized, village's social and economic relationship were often altered in derisible ways by these changes. The study documented a long-term effect of a planned social reform. The consolidation of agriculture holding in the food region of Northern Haryana, two villages located in Kurushethra District near the Twin town of Kurushethra and Thaner. It also examined the reaction of villages to consolidation in Husanpur district, approximately two hundred miles west of Luknow, in 1958 and 1961.Initially he found widespread hostility toward consolidation efforts and a high degree of suspicious on the part of the villages. When he returned to area three and half years, the same farmers expressed much different views on the value of consolidation. The village claimed that consolidation that 'streamlined' the farming methods by reorganizing land into compact blocks and had facilitated the expansion of well irrigation.

Rose and Lacroix (2000)[52] studied the effects of inflation on corporate financing of capital were suppressed (by allowing only bond financing) in order to highlighted the effect of inflation and tax rate changes on the relative price of land. The primary purpose of the study

[51] Jeffrey P. Bonner,(1999),'Land Consolidation and Economic Development in India, A study of Two Haryana Villages', Allied publishers Privted Limited .N. Delhi.
[52] Louis A. Rose and Summer J. Lacroix (2000),' A simulation Study of the interactive effects of taxes and inflation on the relative prices of Land '

was to determine the effects of changes in the inflation rate, the capital gain tax rate and the ordinary income tax rate on the prices of land relative to capital under alternative assumption about the rate of deprecation and lender and barrower elasticity's. According to their model and simulation results, the net effect of inflation on lands price dp / di can be positive or negative depending on the relative strength of two opposing effects. Inflation decreases the price of capital because it destroys the real value of nominal depreciation deduction from ordinary income taxable at rate. Inflation decreased the price of non-depreciating land more than it decreased the price of depreciating capital because it created greater nominal capital gains for land taxable at rate. The simulation results specification initiated that, the relative price of land is sensitive to even small changes in inflation. A marginal increase in the rate of inflation can push lands relative price to infinity, as the discount rate applicable to relative from land approaches zero. It has also shown that the effects of tax rate changes on land, relation prices and nominal interest rate in an inflationary environment.

McMillen and McDonnald (1989)[53] presented a two –stage model of land value and land use in which land use in determined by zoning parameters. Their objective was to determine whether selectivity bias problem was in the empirical land value function. Separate land value equation were estimated for land that is zoned single family residential, multi family residential, business/commercial and manufacturing use. The data source for both land value and zoning was Olcott's land value Blue Book of Chicago for 1961, 1971 and 1981. The data source included zoning maps for most of metropolitan Chicago and the present land value estimates for each block. The study found that, there was few undeveloped residential (REs2) observation in tracks that contain or border a section of either commuter or freight

[53] Daniel P. Mc Millen and John f. McDonald, (1989), 'Selectivity bias in urban land value functions', Vol .65-No.4-Nov.

railroad. Land was more likely to be zoned for apartments if it was near the rail lines, limited access high way and inter changes. Land was more likely to be zoned for business or commercial use if it was near rail lines or in a track located next to a limited – access high way. Land was zoned for manufacturing use if it was near rail lines, limited access high way or close or down town. The results shown that selectivity bias was potential a problem in the residential land value functions. It did not find evidence of selectivity bias in business or manufacturing land value functions, Selectivity bias was more likely to occur when land use was determined by a free market, but the study illustrated that can occur even when land use was determined by zoning.

Watkins (1999)[54] analysed the impact of development charges on urban land development the way in which the burden of a development charges was shared between land suppliers, developer, and land consumer, as well as its impact on demand and on developer's profit, depends on complex range factors, including the elasticity of land supply and demand. The study focused on particular form of development charges, development contributions, and charges on land development and how they were levied affected not only the land and housing prices and hence housing affordability, but also the demand for developed land, urban growth rates and development patterns, and ultimately, the viability of the development industry and general health of the economy.

Kundu and Raza (2000) [55] made an investigation into the changes in the space economy of India during the past fifteen years or so taking the national sample survey region as the basic units of analysis. The pattern agricultural development had been analyzed with the help of a

[54] Andrew R. Watkins (1999), 'Impact of land development charges', Vol. 75 No. 3. PP. 415

[55] Amitab Kundu, Moonis, Raza (2000)' 'Indian Economy 'the Regional Dimension', *Centre for the study of Regional Development*, Jawaharlal Nehru University, N.Delhi

large number of indicators relating to productivity technological inputs and aggregation relations. An attempt was made to identify the factors responsible for the spatial differentiation associated with the green revolution. Similarly the space and pattern of industrializations had been analyzed with an eye on the changes in the rural urban inter dependences and organization of space. The empirical investigation led to the generalization regarding the regional structure of development along the essentially capitalistic power and provided a basic for building a theory modified under development in the content of the third world countries.

Particdge, Bollman,Olferts and Alasia (2007)[56] examined the spread and Backwash effects in Canada over 1981-2001 period, using a very fine level of geographic details, and extensive spatial and amenity measures. Spread and backwash effects were estimated as effects of urban income and population growth along with their interaction with distance. The key feature of this study was very precise examination of how rural population growth was affected by distance from nearest urban centers. Spread and backwash effects were distinguishing from an urban distance discount that is function of distance alone, regardless the growth profile of the urban center. It also examined how distance interacts with other attributes of the urban center such as its per capita income and population size. To assess the spread and backwash, the empirical approach used a partial adjustment model to allow for long from tractions to equilibrium. (Greene 1997) The major implication of study was that the countryside has a significant stake in urban growth. Rural population was clearly positively affected by population growth in near by urban areas over a significant geographic expanse

[56] Mark Particdge, et al, (2007)

Platen and Place (2007)[57] shown evidences from central Uganda that, land – market transaction tends to mitigate inequality in land empowerments, rather than led to a concentration of land assets in the hands of the majority – endowed farmers. Farmers with smaller endowments of inherited land succeeded in buying more land than other farmers. Native farmers who had not inherited were able to acquire more land on the local land – sale market them any other category of farmers were able to obtain. Rural land sale markets in Uganda operates more effectively in favor of local land less farmers than in favor of migrants. Land- Rental markets also had the effect of reducing inequality, yet their equalizing impact was less than that of land – sale market.

Shi ,Philipps and Colyer (1997)[58], used the agriculture and urban fringe model in their study, they utilized a combination of cross sectional and time series data from the census of agriculture and other sources, and estimated a single equation model adapted form marketing research. The results indicated that both farm income and urban influences had been important factors affecting the value of states farmland. They used three metropolitan areas in six states contiguous to West Virginia. All data were in country units and were taken from several sources. The average value of land and buildings, net return to land from farming and capital gains were derived form the census of agriculture for 1950, 1954, 159, 1964, 1969, 1974, 1978, 1982, 1987 and 1992. The average value of land and building were taken directly from census reports. Net relations to land from farming were calculated using agriculture census data USDA publications and West Virginia Agriculture status for the corresponding year. They derived the value of agricultural land by using the following formula (Rit = market

[57] Jen-Marice Baland,FredericGaspart,Jean,Phillppe platen,FrankPlace,,"The distribution impact of land markets in uganda',Economic and Cultural Change,Vol-55,No;2Jan.2007 PP 283-311

[58] Yue join Shi,Timothy T, Philipps and Dale Coyler,(1997)' Agricultural land values Under Urbanizing influence'Land Economics Vol.73, Number 1 feb1987 PP 90.

value of agricultural products sold + Govt. Payments + value of products consumed on farm where produced + other faming income – Total production expenses compensation to operator labor). Expected real capital gains were calculated as the difference of the value of land and building per acre between two successive censuses those years. The details of the population of the metropolitan area were taken from the U.S. Department. of commerce; Metropolitan Area Data Book (for 1950 to 1982) and the distance from the metropolitan area to county in the state were calculated using the pieadad file (Keeps 1978) Do the rich partition their land more often then the poor and consequently experience downward economic mobility this question, which was important in understanding the development of capitalism and dynamism of household size. The conclusion drawn from the analysis was that, the rich experienced differential rates of portioning in the period before land reform and affects the advent land ceiling laws. The relatively higher rates of partitioning among the rich peasants in the post land reform period in attributed, not to Chayanor's life cyclic theory, but to the polices of the state and the availability of employment opportunities outside the agriculture. The study added a new dimension to the problem when it argued that, what affect family portioning was not so much the size class land holding perse but the fact whether the family within a size class were acquiring or alienating the land. Besides by using archival and contemporize data the study, provided a recourse historical analysis of land transfers roughly for a period of a century it showed the changing fortunes a various caste groups and size class in the Andhra Country side.

1.6 Major Conclusions Emerge from the Studies

The overview of existing literature discussed above throws light on many issues which needs detailed inquiry. The value of urban land is argued as the resultant of economic or ground rent

capitalized. It is determined by adding the location factor to the agricultural land value. The price of land decreases with increasing distance from the centre and the quantity of land is that to be bought with increase with distance. Studies also show that there is a curvilinear relationship between decreases in land value and distance from the point of maximum value where land value decreases at a decreasing rate with greater distance from the peak value. There is a relatively small area of high land value near the city centre surmounted by a single peak of highest land value.

The studies on urbanisation found that the urbanisation in developed countries are occurred in consonance with industrialization but in the developed countries including India urbanization is not the consequence of industrialization and has wider implications on the space , environment and socio-economic life. There is evidence that a change in workplace significantly increases the probability of residential mobility and that a change in residence significantly increases the probability of work place mobility. The level of net migration into an urban area is also highly correlated with its rate of growth. There exists high and positive correlation between urbanization and non- agricultural workers. Urban population in the less urbanized region has grown at significantly higher rate than in regions where the proportion of the urban population was relatively higher, a negative relation between the urban population size and growth rate is also found across the urban settlements. Faster growth in urban population is also evident in cases of agriculturally or industrially developed regions and towns that are either located in agriculturally developed regions or have strong industrial base, urban growth is accompanied by economic development, especially in large, industrially developed and favorably located towns. There is also shed light on a good relation between agricultural yield and degree of urbanization, the agricultural yield and urbanization are

directly related, the land of holding and degree of urbanization are inversely related, agricultural yield or productivity of land can best be explained in terms of degree of urbanization.

Observations are also seen that the extent of settlement area is inversely with distance while the extent of a agricultural and orchard land is directly proportional to distance, the Agricultural land is slowly being converted into residential belt or industrial and commercial uses, the land value increases with decrease in distance and the land adjacent to the cities suitable for building purposes. A marginal increase in the rate of inflation can push lands relative price to infinity, as the discount rate applicable to relative from land approaches zero, the effects of tax rate changes on land value. Land is more likely to be zoned for business or commercial use if it is near rail lines or in a tack located next to a limited – access high way, land is zoned for manufacturing use if it is near rail lines, limited access high way or close or down town, selectivity bias is more likely to occur when land use is determined by a free market, selectivity bias can occur even when land use is determine by zoning.

1.7 Statement of the Problem

From the aforesaid discussions, it is learnt that a large number of studies have been undertaken in the area of urbanization and land market. However, there is hardly any study available that investigates the issues pertaining to the urban growth process and the dynamics of land market in Kerala. Kerala, a small strip of land in India with the existence of a strong international demonstration effect driven by gulf remittance, the pressure on land will be very high. Of the various districts of Kerala, Kochi is one of the fast growing cities and it is obvious that the heavy concentration of population in a small ambiance will trigger some serious issues. Though, at present it does not possess characteristics of major cities in India, it

is expected that the city will attain the status of a metro in the near future. Kochi has been expanding rapidly in size and population and it is capable of pulling people from different parts of Kerala. Being the economic nerve centre of the state, this attracts huge amount of investments both from inside and out side of the country on war footing. This will reflect on the high demand for land and booming of urban land value. Also, the literature highlights that the land value will be different across different regions of the same city. That is, the value of land in the core areas of the city would obviously be different from that of the value on periphery areas. However, there is hardly any study that attempts to explore the pattern of urbanization, the trend in land value and the relationship between the two over the period. In this context, the present study intends to pose some questions to be investigated. What is the trend and pattern of the urban growth process in Kerala? What is its impact on land? How does the land market in Kochi respond to the heavy concentration of population? How does the growth of the city augment the land transactions in Kochi? What are the peculiarities of urban land transactions? What are the land value reflections of these peculiarities? Specifically we intend to focus on the dynamics of urban land market in Kochi in the light of the fast growth of the city. Also it intends to explore the impact of the urban growth process on the distribution of land value over space and time in the Kochi city.

1.8 Objectives

The following are the objectives of the study:

1. To understand the trend and pattern of urbanization in Kerala;
2. To examine the nature of land transaction in Kochi;
3. To analyze the spatial and temporal variations of land value in Kochi; and
4. To identify the major determinants of the growth of land value in Kochi.

1.9 Hypotheses

1) Urbanisation and land market are positively correlated

2) The dynamics of land market with respect to the land transaction and land value varies across different regions within Kochi.

3) The value of land is positively correlated to the population pressure, remittance, NDP, Industry and Service sector growth.

1.10 Data Source and Methodology

1.10.1 Data Source and Coverage

The study is mainly based on the secondary data. Data from Census reports for the period 1901 to 2001 have been used to find the trend and pattern of urbanization in Kerala. The data on land transaction were mainly collected from the original registers maintained by the Department of Registration of the Government of Kerala. The data have been collected for the period between 1980 and 2005. Urbanization, being at its highest peak in the 1980's and 90's as enunciated in the Chapter II, data relating to that period are used to find the association of urbanization and land market behavior in Kochi. For analyzing the determinants of land value data on Net Domestic Product by Industry Origin and Remittances have also been collected. The data for the NDP was collected from various issues of Economic Review and the data on remittances has been collected from Kannan and Hari (2002) and Zackariah and Irudaya Rajan (2005).

1.10.2 Methodology

1.10.2.1 Sampling Technique

Kochi Corporation Area is taken as the study area. There are five sub-registration offices working in the jurisdictional limits of Kochi city. Stratified sampling method has been employed for selecting target offices coming under the study area. First, Kochi corporation area has been stratified into three regions such as core (C-1), extension of the core (C-2) and peripheral area (C-3). Then, one office was selected from each stratum viz. Ernakulam Sub-Registrar Office from Core area, Edappally Sub-Registrar Office from Extension of Core, and Mattanchery from the Peripheral area in order to facilitate better balance in distribution of samples. From the three sub-registrar offices, the following villages are chosen for collecting the data related to transaction and value of land.

As envisaged in the literature on land market, there is the existence of the intra–spatial variations in the transaction with in a region. In order to measure this, the region is again divided into different sub- regions taking village as a base. The C1 region is subdivided into three villages Cheranellur, Ernakulam and Elamkulam; and C2 is divided into two villages such as Edappally South and Edappally North. Like wise, there are six villages in C3 and these sub regions are considered as disaggregate level in the land transaction.

Table 1.1 Sampling Design

Name of Sub-Registrar Office	Name of Villages
Ernakulam (core areaC1)	Cheranellur (outer core), Ernakulam (Inner core), Elamkulam, (Outer core)
Edappally (Extension of the core area C2)	Edappally North, Edappally South
Mattanchery (peripheral Area C3)	Mattanchery, Palluruthy, Rameswaram, Thoppumpady, Edakochi, Fort kochi

After the identification of villages under Kochi city, details have been collected on land transaction from each village over the years between 1980 and 2005. Though, there are different types of deeds that have been registered, only the details of the "sales" or "theeru" or "Dhananischayam"[59] deeds have been collected to facilitate a better estimation of the real transaction taken place in the area. To highlight the slight modulations in value and size variation within a month, three samples have been collected as in the first of the month, middle of the month and end of the month. The detailed information pertaining to registration such as, survey number, size of plot, value of plot, stamp duty, and registration fee from all selected villages have been collected and subjected to the through scrutiny. We are presenting the trend and pattern of urbanization in three ways: a) examining the proportion of urban population to total population; b) analyzing state-wise degree of urbanization; and c) looking at the number and size of growth of towns in India. We proceed to explain the urbanization process in Kerala in five ways: urbanization on the bases of population, growth of towns, natural division of the state, land utilization pattern, and occupational shift.

We firstly try to analyse the nature of land transaction at aggregate level then move to the disaggregate level. An attempt has been made to estimate the sizes of plots transacted over the year at aggregate and disaggregate level to identify the most preferable size group of plots in each region. The total number of plots and transactions are calculated for all regions separately and distributed in to different size groups to that effect. The most preferable size group plots are identified on the basis of the maximum number of plots involved in each

[59] The vernacular version of the sales or transactions of land

transaction. The lowest group is fixed less than three cents and highest in greater than 24 cents on basis of the minimum requirement of land for different purposes.

We also made an attempt to estimate the inter-temporal variations in the size of plots over the period. The magnitude and nature of the transaction are analyzed through two variables viz. number of times a piece of plot is transacted within a region during the period and the number of plots involved in the transactions. The total number of plots involved in such transactions also calculated and distributed for the whole period. The magnitude of land transactions are measured on the basis of the maximum number of plots involved the repetitions of transactions.

We incorporated the values of average size of plots in order to estimate the nature of land transactions. We propose to develop a proxy method to estimate the inter-temporal variation of value. The analysis of the distribution of land value is done for different sub-regions over the period. The value variations is estimated on the basis of the changes in the value per cent of land over the area. It examines the trends in value variation by looking in to the trends in the size of plots sold, and through the variation in the prices at the aggregate and the disaggregate levels. The change in value over the period is examined using trend analysis. For studying the major determinants of the trend in land value, two separate multiple regressions were used, the details of which are discussed in Chapter 4 section II.

1.11 Terms and Concepts

Urbanization: Urbanisation in the demographic parlance, the degree/extend level of urbanization of a country or its state/region, usually denotes the proportion of population enumerated in urban areas at a given point of time.

Over urbanization: It is defined as a situation of urbanization without industrialization.

Immature urbanization: it is a situation of urbanization without industrialization with agriculture stagnation.

Cities: The definitions of town differ from country to country and also time to time within a country. In India, the administration or civil station of a place has served as the main criteria for treating it as a town.

Urban Area with more than 1, 00,000 populations in a defined space are called class 1 cities.

Urban Agglomeration: Urban agglomeration is a continuous urban spread constituting a town and its adjoining urban outgrowth of such towns. The following are the possible different situations in which the concept of urban agglomeration would be constituted;

1. A city or town with one contiguous outgrowth.
2. Two or more adjoining towns with their outgrowths.
3. A city and one or more adjoining towns with their outgrowth all of which form a continuous spread.

Land: It is defined as the "sum of the natural and man made resources over whish possession of the earth's surface gives control (Barlowe, 1961)

Land market: it is defined as the sum of transactions in the form of buying and selling of the land.

1.12 **Profile of the Study Area**

1.12.1 Genesis of Kochi

Kochi has a long and interesting historical link between India and foreign land and people. Ancient colonies of Jewish settlers for more than 200 years and passed to Dutch in 1663 and in 1776 the British took control of Kochi from Dutch .The name Kochi derived from a Malayalam word Kochzhi meaning small or new harbour, to distinguish it from large or old harbour of 'Cranganore' The historical evidences of the origin of Kochi city is that, 'geophysical changes that occurred because of the flood in the river Periyar in 1941. The flood swept down the Periyar and while one branch of it silted up the harbor of Cranganore (the old Muzirs), the other branch which flows into Verapoly and merger into the Vembanad lake, opened with the entrance from the sea to the lagoons and thereby brought into existence the harbor of Kochi'[60]

1.12.2 Geography and Climate

Kochi is located on the Southwest coast of India at $9^0$58 E' $76^0$13' E spanning an area of 94.88 square. The city is situated at the northern end of a peninsula, about 19 kilometers long and less than one mile wide. Kochi is bounded by in the west lies the Arabian Sea, to the east the Thripunithura municipality, and in the north Kalamassery municipality. Many places of Kochi lie at sea level, with a coastline of 48 km.

Soil consists of sediments such as alluvium, Teri's, brown sands etc. Hydromorphic saline soils are found in the areas surrounding the backwaters, Predominant rock types are also seen especially in the north-eastern side of Kochi. It is an ecologically sensitive area, the

[60] K.P. Padnabhamenon, 'Cochin state manual, Ernakulam, 1911.

Mangalvanam Bird Sanctuary is located in the central part of the city and it has a wide range of mangrove species and is nesting ground for a vast variety of migratory birds

1.12.3 Civil Administration

The city is administered by the Kochi Corporation, headed by a mayor. The personnel department and the council section handle the general administration of the city. For administrative purposes, the city is divided into 70 wards. The corporation has its headquarters in Ernakulam, and zonal offices at Fortkochi, Matanchery, Palluruthy, Edappally Vaduthala and Vyttila.

1.12.4 Economy

Kochi is one of the leading destinations for IT and ITES companies, ranked by NASSCOM (2007) as the second most attractive city in India for IT based activities. Availability of cheap bandwidth through undersea cables and lower operational costs are some of its advantages compared with other major cities in the country. Various technological and industrial campuses including the government promoted Info Park operate in the outskirts of the city. Several new industrial campuses for research, trade and development in biotechnology, electronic hardware and information technology are in various stages of construction in the suburbs of the city. Prominent among them are the Sobha Hi-tech city at Maradu and the Smart City at Kakkanad, on completion, they would rank the largest of such ventures in the country.

1.12.5 Demographics

As of 2001census, Kochi had a population of 596,473, with a density of 6850.7 persons per square kilometer. The female to male ratio is 1,024:1000, significantly higher than the all

India average of 933:1000. Kochi's literacy rate is 94.3%. The female literacy rate lags that of males by 1.1%; amongst the lowest such gaps in India. The region includes Kochi and Kanayannur Taluk in Ernakulam Districts of Kerala state. The region is considered as the industrial and commercial capital of the state that witnessed an unprecedented and phenomenal growth during the last three decades in all fronts. It is an excellent blend of traditions and modernity and is a perfect reflection of the cosmopolitan society of Kerala. The town is also known as the 'Queen of the Arabian Sea' has one of the natural harbors of the world and oldest ports in the country. Kochi, formerly called as Cochin, came in to being in 1967, as a result, merger of the neighboring towns and villages of mainland, Ernakulam, Old Cochin, including Matanchery, Fort Kochi, Palluruthy and Thoppumpady, Willington Island, the suburbs of Edappally, Kalamassery, Thrikkakara and Kakkanadu to the north east and Thripunithura to the south east. It is indeed one of the most beautiful cities of the state, blending with history, legends and natural beauty.

1.13 Scheme of Presentation

This work has been presented in five chapters. Chapter one deals with the introduction, review of literature, Statement of problem, objectives of the study and data and methodology. Chapter two provides an overview of trend and pattern of urbanization in Kerala. Chapter three gives magnitude and nature of urban land transactions. The next Chapter deals with the trend and major determinants of land value in Kochi and the last Chapter gives the major implications of findings and conclusions that emerge from the study.

CHAPTER II

URBANISATION IN KERALA

2.1 Introduction

Urbanization is a global phenomenon where large sections of population get concentrated in urban areas of a country. It is measured as the proportion of total population concentrated in an urban settlement. The rate of urbanization is considered as one of the important indicators of the socio-economic achievements of a country. The concomitant factors of such concentration are natural growth, net migration, growing industrialization and proximity of socio-economic institutions. An urban area can be defined in different ways such as legal, demographic and economic. It can also be explained in terms of the spatial concentration of people and economic activity. Detailed discussions and studies have already been carried out on the former. But a close perusal of the relevant literature reveals that the latter has not yet received the required academic attention.

The trend and pattern of urbanization varies from country to country and region to region. The process of urban growth experienced in Kerala is a distinct one as from the rest of India. The specific socio economic fabric of the Kerala society makes it difficult to demarcate the rural from the urban. Kerala as a whole is fast evolving as an urban centre. Hence the study of the process of urban growth in Kerala in relation to the other Indian states requires special attention.

In this chapter we try to explain the urbanization process that is visible in Kerala over the years. Here we try to pose some general facts pertaining to the urban growth process and

examine how these facts are relevant and operational in Kerala context. The relevant questions are: How did the urban process take place in Kerala? What are the peculiarities of the urbanisation process in Kerala? What are the trends and patterns? What is the specificity interwoven into the degree and magnitude of urbanization? What are the spatial implications? What repercussions did it exert on the value of land? For a plausible explanation, we have relied mainly on the secondary information collected from various government publications. It is hoped that the discussion will be helpful in formulating a conceptual frame to examine the transaction and valuation of land in the succeeding chapters.

The chapter is divided into three sections. The first explains the urbanization in India while the second explores the urban growth pattern experienced in Kerala, and the last one explains the urban growth in Ernakulam district to highlight the role of Kochi in the urbanization path of Kerala.

2.2 Urbanization in India

The literature on Indian urbanization envisages that the urban growth process reflected in India today is characterized by the following features.

a) Urban centers have flourished around agro-industrial centers.

b) They have grown up as a result of setting up of institutional and administrative centers including tourist centers.

c) New cities and towns have emerged in confluence with the development of industrial centers and state head quarters.

We examine the trend and pattern of urbanization in India against this backdrop in three alternative ways. First we show the proportion of urban population to total population, then

state-wise degree of urbanization, and lastly we explain the number and size of growth of towns in India.

2.2.1 Urban Population of India

The urban population growth take place in India is in conformity with the above- mentioned characteristics. The following inferences can be deduced from the analysis of the urban population in India. The growth of Indian urban population can be divided into two phases: pre- independent and post-independent. The two phases reflect upon the policies and programmes followed by the respective governments. During the pre-independent phase, the socio-economic policies were not conducive to an enhanced growth of Indian rural sector, which is evidenced in the post-independent phase. The modernist policies of the neo-socialist governments in the post independent era helped the Indian agro-industrial sector surge ahead in the path of progress and development. The launch of Green Revolution and commercialization of agriculture have paved the way for the development of agro-based industries and urban centres which attracted large sections of rural folk resulting in heavy concentration of population there.

According to the Table 2.1, there was only 2.4 percent of the total population in urban centers in 1901, which remained constant up to 1921. From 1931onwards the percentage of urban population has increased steadily over the remaining years. In 1971, it was 10.2 percent whereas in 2001 it rose to a phenomenal 26.7 percent. The table also highlights the decadal population growth rate during the period. The decadal growth rate begins with a very low value of 0.4 in 1901 and ends with a high rate of 31.1 in 2001. In 1921 the growth was 19.1, which increased to 41.4 in 1951. In 1964 it grew at the rate of 26.4 and assumed a higher

value in 1991. But in 2001 the rate of growth of urban population is seen a comparatively lower value of 31.1.

Table 2.1: Growth of Population in India

Census year	Rural	Urban	Total	Percent of Urban Population	Decadal Growth rate
1901	2125.4	258.5	2383.9	2.4	
1911	2261.5	259.4	2520.9	2.4	0.4
1921	2232.3	280.9	2513.2	2.6	8.3
1931	2455.2	334.6	2789.8	3.1	19.1
1941	2745.1	441.5	3186.6	4.1	31.9
1951	2986.5	624.4	3610.9	5.8	41.4
1961	3602.9	789.4	4392.3	7.4	26.4
1971	4390.5	1091.1	5481.6	10.2	38.2
1981	5238.7	1594.6	6833.3	14.9	46.1
1991	6286.9	2176.1	8463	20.3	36.5
2001	7416.6	2853.6	10270.2	26.7	31.1

Source: Census of India 2001.

The degree of urbanization is seen unevenly distributed across various States and Union Territories of India. There are states having higher as well as lower degrees of population. New Delhi, the national capital, has the highest percent of urban population (93.2) followed by Chandigarh (89.8).

The higher urban population in these places is attributed to the agglomeration effect and also the privileges availed by them as administrative headquarters. The third position in this regard is occupied by Pondicherry (66.6), which is a small strip of land on the eastern coast of the southern peninsula. It was under the yoke of long colonial rule even after independence. Hence the vestiges of western culture have profoundly influenced the socio-economic fabric

of the state. The low geographical area with a long stretch of coastal belt has led to a heavy concentration of population in urban areas. The state also figures as one of the prominent tourists destinations in India.

Table 2.2: Degree of Urbanization in India

S l .No	STATE / UTs	% of urban Population
1.	Andaman & Nicobar Islands	32.6
2.	Andhra Pradesh	27.3
3.	Arunachal Pradesh	20.8
4.	Assam	12.9
5.	Bihar	10.5
6.	Chandigarh	89.8
7.	Chhattisgarh	20.1
8.	Dadra & Nagarhaveli	22.9
9.	Daman & Diu	36.2
10.	Delhi	93.2
11.	Goa	49.8
12.	Gujarat	37.4
13.	Haryana	28.9
14.	Himachal Pradesh	9.8
15.	Jammu & Kashmir	24.8
16.	Jharkhand	22.2
17.	Karnataka	34
18.	Kerala	26
19.	Lakshadweep	44.5
20.	Madhya Pradesh	26.5
21.	Maharashtra	42.4
22.	Manipur	25.1
23.	Meghalaya	19.6
24.	Mizoram	49.6
25.	Nagaland	17.2
26.	Orissa	15
27.	Pondicherry	66.6
28.	Punjab	33.9
29.	Rajasthan	23.4
30.	Sikkim	11.1
31.	Tamil Nadu	44
32.	Tripura	17.1
33.	Uttar Pradesh	20.8
34.	Uttaranchal	25.7
35.	West Bengal	28

Source: Census of India (2001).

The study of urban growth patterns in India reveals another remarkable feature i.e., the states having high urban population lie on the costal belts and they are geographically smaller in size, which is evident from the table. Examples are Andaman and Nicobar Islands (32.6%), Dadra & Nagarhaveli (22.9%), Daman & Diu (36.2 %), Goa (49.8%) and Lakshadweep (44.5%). The smaller southern states are leading in urban population compared to the larger northern states. Tamil Nadu leads the other southern states with 44 percent.

2.2.2 Growth of Towns in India

One of the leading methodologies used in urban studies takes town as the basic unit and analyzes its growth pattern and estimates the urbanization process. Urbanization has primarily been associated with the number of people who migrated from countryside to a town, the rise of metropolis, and the difference in the growth of population in town.

In the Indian context, the degree of urbanization and growth of towns do not show any correlation in the analysis (Table No. 2.2 and 2.3). Though Tamil Nadu has the largest share of towns (16.2 %) among the Indian states, its urban population is only 44 percent.

Table2.3: Urban Agglomerations (U/As) and towns - 2001

SL No.	State /UT	Number of UA	Number of towns
	India	384	51161
1.	Andaman & Nicobar Islands	0	3
2.	Andhra Pradesh	37	210
3.	Arunachal Pradesh	0	17
4.	Assam	10	125
5.	Bihar	9	130
6.	Chandigarh	0	1
7.	Chhattisgarh	12	97
8.	Dadra & Nagarhaveli	0	2
9.	Daman & Diu	0	2
10.	Delhi	1	62
11.	Goa	3	44
12.	Gujarat	41	242
13.	Haryana	3	36
14.	Himachal Pradesh	1	57
15.	Jammu & Kashmir	7	75
16.	Jharkhand	11	152
17.	Karnataka	24	270
18.	Kerala	17	159
19.	Lakshadweep	0	3
20.	Madhya Pradesh	42	394
21.	Maharashtra	50	378
22.	Manipur	1	33
23.	Meghalaya	1	16
24.	Mizoram	0	22
25.	Nagaland	0	9
26.	Orissa	10	138
27.	Pondicherry	1	6
28.	Punjab	19	157
29.	Rajasthan	23	222
30.	Sikkim	0	9
31.	Tamil Nadu	27	832
32.	Tripura	0	23
33.	Uttar Pradesh	32	704
34.	Uttaranchal	19	192
35.	West Bengal	21	375

Source: Census of India 2001.

Uttar Pradesh with 14 percent of total towns follows it but its corresponding degree of urbanization is only 20 percent. In the case of the national capital state of Delhi, it has the highest value in urbanization in spite of having only 1.20 percent of the total towns. The state of Pondicherry, the second urbanized state in the country, has only 0.12 percent of the total towns. Kerala possesses only 3.08 percent of the total towns but its position in urbanization is pretty high when compared to the major Indian states.

Urban agglomeration is taken as another indicator of urbanization. It measures the extent of the spread of urban growth into suburban areas. Considering the urban agglomeration the highest number is identified in the state of Madhya Pradesh (42) followed by Gujarat (41). Gujarat is one of the leading states in India striving ahead in the path of industrial development. There is only one agglomeration in Delhi and none in Chandigarh. It indicates that these states as such are transforming themselves as a single urban unit. In Kerala seventeen urban agglomerations have been identified and they are highly significant in the field of urban growth pattern. It is an indication of the manner in which how urban growth is taking place in Kerala.

2.3 Urban Growth Pattern in Kerala

We proceed to explain the urbanization process experienced in Kerala within this broad frame. It is explained in five ways: urbanization on the basis of population growth, growth of towns natural division of the state, land utilization pattern, and occupational shift.

2.3.1 Urbanization on the Basis of Population Growth

Though there are various methods by which the urban growth pattern can be explained, the population variables have paramount importance in analyzing urbanization. The census

statistics on population from 1901 to 2001 have been used for a deeper understanding of the trend of urban population in Kerala. The data on the growth and class wise distribution of towns is used to examine the magnitude of the concentration and spread of the urban population.

Population variables are both the cause and the effect of the development process. The population of Kerala at `0.00' hr of 1st march, 2001 stood at 31,841,374 consisting of 15,468,614 males and 16,372,760 females. Kerala's share of population to the total population of the country is only 3.10 percent. In absolute terms, population of Kerala has increased by 2.7 million during 1991-2001 (Census of India, 2001)[1]. The net addition in population has decreased consistently during each decade starting from 1971.

Kerala ranks twelfth among the states in India in population size. The other states having higher rank in population size are Uttar Pradesh, Maharashtra, Bihar, West Bengal, Andhra Pradesh, Tamil Nadu, Madhya Pradesh, Rajasthan, Karnataka, Gujarat and Orissa. Over the last hundred years (1901-2001), the population of Kerala has shown a net addition of 254 lakhs, i.e., an increase of 397.81 percent. The percentage decadal growth during 1971-1981 registered the sharpest decline since independence. It had declined from 26.29 percent during 1961-1971 to 19.24 percent during 1971-1981, a decrease of 7.05 percent points. Thereafter the growth rate has witnessed decline but the percentage of decrease has steadily come down from 7.05 in 1981 to 4.9 in 1991 and remained static in 2001. The percentage decadal growth rate had declined from 11.75 percent in 1911 to 9.16 percent in 1921. Thereafter it witnessed a sudden jump of 21.85 percent in 1931. Perhaps the highest increase in decadal growth rate was witnessed during 1921-1931, an increase of 12.69 percent points. In 1941, the decadal

[1] Source: Census of India (2001), series -33, Kerala, Final Population Total

growth rate declined to 16.04. There had been continuous increase in growth rate up to 1971. Since 1971 census, the growth rate has shown a declining trend. The present growth rate of 9.4 percent is the lowest among the Indian states and is also the 2nd lowest during the last 100 years, the lowest growth rate of 9.16 percent being recorded in 1921. The 9.4 percent growth rate of Kerala for 1991-2001 is only a little higher than the growth rate in1911-1921.

The urban growth process of Kerala raises certain problems in the definition of urban unit, with its high rural density. The settlement pattern is very distinct, its population being scattered throughout the state. Even though the lion's share of its population still resides in villages and is occupied in agro-related activities it does not possess a village system like the other parts of the sub-continent. Scattered buildings in well-defined plots having separate walls for each house; good accessibility, plentiful water sources, favorable climate conditions and above all the peculiar living habit of the people contribute to the scattered settlement pattern. This settlement pattern gives rise to a rural –urban continuum. It is difficult to say where the town ends and where the village starts.

Unlike in the villages in other parts of India, comparatively better services and facilities are available in the rural areas of the state. There are good networks of road and transport systems linking the urban and rural areas. There is satisfactory supporting population in the village who can afford and sustain higher order services like tap water, electricity, educational and health institutions. The dispersed settlement pattern might be one of the reasons for the relatively low percentage of urban component in the total population.

During the post independence period there was a tremendous increase in urban population (Government of Kerala, 1987)[2]. This increase in the urban population, however, is not due to

[2] Govt of Kerala (1987) 'Urbanization in Kerala' A study of Town Planning Department, PP 4-6.

the general factors like migration and industrialization. The increase of urban population in Kerala as a result of migration is not substantial. There is no intensive flow of population to bigger cities and towns as happening in other parts of the country. This is due to the non-availability of the bulk of employment opportunities in urban centers or the urban-rural continuum or the existence of non-agriculture activities in the rural areas. The pull factors of the urban centers in the state are comparatively weaker. The highly sensitive family-and-village-bonds maintained by an average Keralite do not permit him to shift his residence to the work place. Those who are employed in urban establishments prefer to commute daily to the work centers. The availability of comparatively better services and facilities in the rural areas encourage this tendency. Even if the population shifts to urban centers they prefer to reside in urban outskirts or close to the city's ambience in order to reap the benefits of cheap land availability and other infrastructural facilities. People who own some land in villages prefer to live in village areas and commute to the town for employment so that they can continue to cultivate the available land and make it a supplementary source of income.

No town in Kerala is said have developed purely on industrial basis. Most of them have come up either as trading centers, marketing centers or administrative centers. The available industries are scattered in both urban and rural areas. Cheaper land and electricity, and better accessibility to infrastructure facilities are the major factors that contribute to the location of industries in Panchayath areas. There are some rural and suburban areas in Kerala are seen the concentration of industries.

It is clear from the aforesaid discussion that of the three determinant factors of urbanization such as natural growth, net migration and jurisdictional changes, the first two are prominent in

Kerala. Classification of an area either into urban or rural is based on the classification used in various censuses.

2.3.1.1 Trends of Urbanization in Kerala between 1901 and 2001

The content and growth of urban population very much depends on the definition of some basic concepts and how it is applied in different censuses. The definition of a town in Kerala has remained unchanged after the 1961 census. The proportion of urban population to total population has increased from 7.11 percent in 1901 to 26.39 percent in 1991. A slight decline in this proportion to 25.96 percent is seen in 2001 census. 0.43 percent point decline in the proportion of urban population in 2001 census is due to declassification of Panthalam, Piravam, Koothattukulam and Mannarkad municipalities during 1991-2001. The declassification of Eloor and Erattupetta Municipalities has not, however, affected urbanization due to classification of the area contained in these municipalities as census towns in 2001 census. The urban population of the state in 1971 was 16.24, which rose to 25.97 percent in 2001, which is comparatively lower than the national average of 28 percent as per 2001 census. The trend of total population in the state also shows a low decadal growth rate of 9.42 percent (1991-2001), which is the lowest growth among all the states in the country.

Table 2.4 Trend of Urbanization in Kerala 1901-2001

Census Year	Total Population	Total Urban Population	Percentage Urban Population	Decadal growth rate	Annual Growth Rate (Urban)
1901	6396262	454499	7.11	-	-
1911	7147673	524661	7.34	15.44	1.44
1921	7802127	680900	8.73	29.78	2.61
1931	9507050	916330	9.64	34.58	2.97
1941	11031541	1195550	10.84	30.47	2.66
1951	13549118	1825832	13.48	52.72	4.423
1961	16903715	2554141	15.11	39.89	3.36
1971	21347375	3466449	16.24	35.72	3.05
1981	25453680	4771275	18.74	37.64	3.19
1991	29098518	7680294	26.39	60.97	4.76
2001	31838619	8267135	25.97	-7.64	0.74

Source: Census of India (2001), Series-33 Kerala, Final Population total

In tune with the trend in India, urbanization in Kerala is expected to intensify in coming years. It is projected that over 20 years period from 2001 to 2021 even after estimating the current annual rate of 0.76 percent increase the population growth would expose 15.2 percent increase in absolute terms. Hence the urban population is likely to exceed 9.53 million in the year 2021. The noteworthy feature of the decadal growth rate of urban sectors in Kerala is that it has been in leaps and bound for the entire period except during the decades between 1931-41 (34.6 and 30.5 percent)

But instantly there was a sudden jump to 52.72 percent during 1941-1951. This high variation in the decadal growth rate is attributed to the formation of the state of Kerala by the amalgamation of the erstwhile three princely states. During 1961 –1971, it has shown a declining trend. But from 1981 onwards an increasing trend has been shown which became phenomenal during 1991. But in 2001 it declined marginally.

The annual growth rate of 1.44 in 1911 showed an increasing trend up to 1931-41. During 1941-51 the annual growth rate cited was 4.42 percent, which maintained a decreasing trend up to 1981. In the period between 1981 and 1991 Kerala's urban population grew at a rate of 4.76 percent, which fell to an annual growth rate of 0.74 percent in 2001[3]. This slight decline is due to the declassification of certain regions by the census commissioner only one town was declassified with 92 towns

2.3.2 The Growth of Towns in Kerala

It is observed from the table 2.5 that, there were only 21 towns in the state at beginning of the last century. In 1911 six towns were newly formed. In 1921census it showed that there was a sudden increase of 17new towns. In 1931, 9 towns are added and in 1941nine new places become towns. In 1951 census 32 new places were treated as urban. Empirical test for treating a place as towns were applied in 1961census and as a consequence many areas with rural character in earlier censuses had to declassify. In 1961 census 37 towns of 1951 were declassified as rural and 11 towns were merged wholly with other towns and 22 new places were recognized as towns. In 1981 census as the definition was strictly applied by treating as village as the basic unit for determining a census town, 32 towns of 1971 has to be declassified as rural as against 50 towns were newly added. In 1991 census were newly added raising the total number of towns to 197. In 2001 census 42 towns were declassified, 16 census towns were merged with three corporations of Thrissur, Kollam and Thiruvananthapuram and 18 towns were newly added. Besides, these two classified statutory towns were continued as census towns.

[3] World Bank (2006) 'Kerala sustainable urban Development Project Preparation' project paper prepared by Team of Experts for Government of Kerala.

Considering the decennial growth rate of towns in the Kerala, it is evident that from 1901 to 1921 a positive growth has shown, in between 1931 and 1941 there shown a declining trend but during 1951 a modest positive rate of growth was visible i.e. 51.61. During 1961 and 1971, there were a negative growth rate, the rate of growth of towns in Kerala getting a momentum from1981 onwards and it reached highest in 1991 i.e. 86. In 2001 there shown a negative growth. The annual growth rate explains that in Kerala, the towns are growing at 2.54 rates annually and attained a highest value of 5.05 in1921 and6.39 at 1991.

Table 2.5 Growth of Towns in Kerala

Year	Towns	Decennial Growth	Compound Growth
1901	21	-	-
1911	27	28.57	2.54
1921	44	62.96	5.05
1931	53	20.45	1.88
1941	62	16.98	1.58
1951	94	51.61	4.25
1961	92	-2.13	-0.21
1971	88	-4.55	-0.44
1981	106	20.45	1.88
1991	197	85.85	6.39
2001	159	-19.29	-2.12

Source: Census of India, various issues

Viewing from the table2.5, the present pattern of urban centers Kerala in 2001, it accounts for 159 census towns/cities, which include five major Municipal corporations of Thiruvananthapuram, Kochi, Kollam, Thrissur and Kozhikode. These corporations contain20.46 million populations, which consisted of 29.72 percent of the total urban population and 7.07 percent total population of the state.

Table 2.6 gives the details of number of statutory and census towns 1991 and 2001 censuses. In Kerala, the number of towns reduced to 159 in 2001 from 197 in 1991. This was due to

declassification 36 census towns and 6 statutory towns in 2001 census besides the merging of a number of census towns with municipal corporations of highest in Ernakulam District and the lowest in Wayanad District in 2001. As regards census towns, Kannur District has the highest number and Palakkad District the lowest. There is no census town in Wayanad, Malappuram, Idukki, Pathanamthitta, Kollam and Thiruvananthapuram District. In respect of total number of towns in 1991 and 2001 Kannur has the highest number of census towns in 1991 and 2001 and Wayanad district the lowest.

Table 2.6 Number of Statutory and Census Towns in 1991 and 2001

State/District	1991			2001		
	Statuary Towns	Census Towns	Total	Statuary Towns	Census Towns	Total
KERALA	65	132	197	60	99	159
Kasaragod	2	4	6	2	5	4
Kannur	7	38	45	7	38	45
Wayanad	1	-	1	1	-	1
Kozhikode	2	16	18	3	10	13
Malappuram	5	-	5	5	-	5
Palakkad	5	4	9	4	1	5
Thrissur	7	33	40	7	21	28
Ernakulam	2	16	28	9	16	25
Idukki	2	-	2	2	-	2
Kottayam	5	3	8	4	2	6
Alappuzha	5	9	14	5	6	11
Pathanamthitta	4	-	4	3	-	3

Source: Census of India (2001), Series-33 Kerala, Final Population total

2.3.2.1 Size Class of Towns

The movement of towns and cities from one class to another is considered as one of the indications of urbanization process. The movement of cities and towns from one size class to another between 1991 and 2001 are presented to realize this objective. The number and population of cities and towns are classified in to six Size Classes as I to VI in 1991 and 2001 censuses. None of the cities in kerala has a population of 1million and above. Kannur Cantonment is the sole Class VI town in the state in both 1991 and 2001. Class V towns have decreased by I due to the merging of Perakam Census town to the next higher Size Class IV. Six new towns are added to class V in2001 census while six class V towns of 1991 had lost its urban status as towns. The number of Class-I and Class-II towns has increased. There is an addition of 3 towns in class I and 4 towns in class II. The addition in class I towns are Kanhangad Municipality, Thrissur Municipal Corporation, Cherthala municipality and Kottayam Municipality of which Cherthala Municipality was class III and other three towns were Class II in 1991.Thalassery municipality has lost its Class I Status in 2001 and relegated to class II. In the case of class II towns, of 20 towns of 1991, 16 towns have retained their class II status in 2001, while three towns have moved to class I, one town from class I to Class II, 5 towns from class III to Class II, and one from Class IV to Class II. One class II town Quilandy is newly formed in 2001. Another Class II town namely Vadakkevila was declassified. Thus there are 24 class II towns in 2001. In the case of Class III and Class IV towns the number of towns decreased from 100 to 72 and 53 to 37 respectively during 1991-2001. More than 45 percentage of towns are class III, formed by class IV accounting from about 23 percent, they together account for more than 68 percent of towns of Kerala. Of the 100 class III towns of 1991,70 towns have either lost its urban status as towns or merged with

municipal corporations, 40 towns have been converted as urban out growths, three towns were newly added, 6 class –IV towns of 1991 have moved to class-III, another 5 to class II and 1 to Class I in 2001. Thus there are 72 class III towns in 2001 of which 63 towns have retained their size class in 2001 census also. In the case of class IV towns, 8 new towns are added to class IV in 2001, 1 Class V town has moved to class IV, 6 towns to class III, one to class II, 14 towns have either 1991.

Table 2.7: Size wise growth of urban population from 1981-2001

Size Class of UA/City/Town	Number of UAs/Towns			Population			Percentage of Population in each size class			Percentage decadal growth	
	81	91	01	81	91	01	81	91	01	1981-1991	1991-2001
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
All Classes	85	109	98	4771275	7680294	8267135	100.0	100.00	100.0	+60.97	+7.64
Class I	8	14	14	2535462	5095524	5689738	53.14	66.35	68.82	+100.97	+11.66
Class II	7	9	14	454017	554571	936193	9.52	7.22	11..3	+22.15	+68.81
Class III	49	46	35	1520399	1465006	1161553	31.86	19.07	14.05	+3.64	-20.71
Class IV	17	34	26	227871	520663	411808	4.78	6.78	4.98	+128.49	-20.91
Class V	4	6	9	33526	44530	67843	0.70	0.58	0.82	+32.82	+52.35
Class VI	-	-	-	-	-	-	-	-	-	-	-

Source: Census of India (2001), Series-33 Kerala, Final Population total

The decadal growth rate during 1981-1991 was 60.97 percent, which reduced to 7.64 percent in 1991-2001. A size class wise analysis of percentage of urban population in 2001 reveals that it is highest in Class-1 (68.82%) towns, followed by Class- III towns than in Class-II towns. The percentage of urban population in size Class 1 have witnessed steady increase from 1981 onwards while in size class-II and V the percentage of urban population is

decreased in 1991 and again increased in2001. In size Class-III there has been a steady decreasing trend since 1981 in of percentage of urban population

2.3.3 Urbanization on the Basis of Natural Division of Kerala

The regional concentration of population can easily be explained by analyzing the distribution of the total population among the natural divisions of Kerala. We try to establish it by using the standard divisions of Kerala region as High Land, Mid Land and Low Land. The spatial dimension of urbanization is the distribution of urban centers and population among the natural division of lowland, middle land, high land.

Table 2.8 Distribution of Population on Natural Division of Kerala

Natural Division	% of urban land	% Of total urban Area	Total population	% of urban Population	Density	
					Rural	Urban
High land	**0.28**	**4**	**4.5**	**4.5**	**165.03**	**2682**
Mid land	**4.3**	**61.1**	**15.2**	**55.3**	**693.36**	**2362.5**
Low land	**11.75**	**34.9**	**25.2**	**40**	**1175.1**	**1962.6**

Source: Govt. of Kerala (1987) A study of Town Planning Department, PP 9.

The intensity of urbanization in terms of area and urban population is the highest in low land followed by midland and then high land. However the concentration of urban population is high in midland regions.

2.3.4 Urbanization Based on Land Utilization Pattern

The spatial dimensions of urbanization are explained with the help of the basic statistics on land use pattern of Kerala. The urbanization pattern can also be measured with Shift in the land use pattern. The literature on urbanization says that if the non-agricultural component of

the total geographical area increases, it is considered as one of the indications of urbanization of an area. As the urban growth process gets accelerated more and more areas of land has to be converted into non-agricultural purposes. Considering the land use pattern of Kerala from1975 onwards, it is evident that there is an increasing trend in the size of the land getting used for non-agricultural purposes. Table 2.9 gives the details of total geographical area, and the land used for non-agriculture and agricultural purposes over the years.

Table 2.9 Land Utilization Pattern in Kerala

Year	Total geographical area (in '000 hect.)	Land put to non-agricultural use	Land put to agricultural use
1975-76	38855	2592(6.7)	29813(76.7)
1980-81	38855	2698 (6.9)	28848(74.2)
1985-86	38855	2786 (7.1)	28666 (73.7)
1990-91	38855	2974 (7.7)	30200(77.7)
1991-92	38855	3014(7.8)	30211(77.7)
1992-93	38855	3028(7.9)	30465(78)
1993-94	38855	3084(7.9)	30427(78.4)
1994-95	38855	3228(8.3)	30483(78.4)
1995-96	38855	3131(8.0)	30672(78.9)
1996-97	38855	3179(8.1)	30212(77.7)
1997-98	38855	3204(8.2)	29690(76.1)
1998-99	38855	3338(8.5)	29165(75)
1999-00	38855	3544(9.1)	30017(77.2)
2000-01	38855	3819(9.8)	30217(77.7)
2001-02	38855	3924(10.1)	29923(77.0)
2002-03	38855	3934(10.1)	29704(76.5)
2004-05	38855	4301(11.1)	29963(77.1)
2005-06	38855	4534(11.7)	30379(78.2)

Source: Agriculture statistics, DES, Statistics for Economic planning, 2006

Note: The figures in parenthesis are percentages

Table 2.9 reveals some noteworthy features of the distribution of land for different uses over the years. During the period 1975-76, 76.7 percent of the total geographical area was used for agriculture purposes and only 6.7 percent of the area for non- agriculture purposes. But in the period of 1985-86 the total crop area shrank to 73.7 percent and at the same time the area used for non-agricultural purposes increased to 7.1 percent. During 1991-96 the areas for agriculture and nonagricultural purposes increased. In 1991, the area for non- agriculture purpose was 7.7 percent, which rose to 8.0 percent in 1996. For agricultural purpose it was 77.7 percent and 78.9 percent respectively. The growth in the area for agricultural purpose is attributed the strenuous efforts of the state to reduce the quantum of cultivable waste area. The area of cultivable waste is seen reducing during the period and the additionally mobilized area has been either used for agricultural or non-agricultural purposes.

2.3.5 Urbanisation on the basis of Occupational Shift of Workers Composition

The number of workers engaged in non-agricultural activities is another base on which the urbanization process explained. The literature on urbanization ascertain that, if more than 75 percent of the available workers are engaging in non-agricultural activities that area can be accounted as an urban area. The details of the districts wise split up of total workers are used for this purpose. As given in the table (2.11) the highest number of workers who engaged in non- agricultural activities attributed to Kozhikode district (88.4 percent) and lowest rate goes to Idukki (51.8) followed by Ernakulam (86.8) which is the second urbanized district in Kerala. The number of non-agricultural workers of nine districts has above state average (76.7) and five districts lie below the state average.

Table 2.10 Ranking of Districts by Percentage of Workers in Non-agricultural Activities

Rank	District	Percentage of workers engaged in non- agriculture activities
1.	Kozhikode	88.4
2.	Ernakulam	86.8
3.	Kasaragod	85.2
4.	Thrissur	83.2
5.	Alappuzha	82.3
6.	Kannur	80.2
7.	Thiruvananthapuram	79.4
8.	Kottayam	79.0
9.	Kollam	78.5
10.	Malappuram	75.7
11.	Pathanamthitta	66.5
12.	Palakkad	57.2
13.	Wayanad	52.5
14.	Idukki	51.8

Source: Census of India2001 , Series-33, Kerala, Final Population Total

The district with highest number of urban population, Kannur, has comparatively lower number of non-agricultural workers (80.2Percent) and district with lower urban population, Kasaragod, has high share of non-agricultural workers (85.2). This deviation in urban population and workers composition is due to census definition of total work force.

2.3.5.1 Work Participation Rate

Urban process has a direct bearing on the ratio of total number of workers to total population. Urbanization process unleashed the socio-economic avenues drastically. But in Kerala the access and availability of these avenues are not evenly distributed. To have an equal accesses of opportunities opened up by urbanization depend on some other factors, such as, social mobility, socio-political relation existing in both in society and household units, level of empowerment and willingness to work. Even though, remarkable achievement attained by kerala women in social spheres of life the female presence in workforce is negligible one and it is deteriorating too. The employments opportunities open up through urban process are

more or less male friendly rather than female. It is either due to these opportunities demands more technical academic qualifications or to the comparative lesser social mobility of the Kerala women. Above all, a new trend is getting momentum in Kerala society, is that, even the educated women in Kerala prefers to confine in domestic units as housewives instead of getting placed in any income earning employment

The rural-urban sex-wise work participation rate is not remarkable one in Kerala with that of India. Both rural and urban work participation rate is far below the all Indian average. From the table 2.12 it is learnt that the female work participation is comparatively higher in both Kerala (17.7 percent) and India (53.8) in1981 and has decreased to 16.9 percent and (52.4 percent) in 2001.

Table 2.11 Rural Urban Work Participation Rates in Kerala and India

Census year	Kerala			India		
	Persons	**Male**	**Female**	**Persons**	**Male**	**Female**
1981	30.5	44.9	16.6	36.7	52.6	19.7
1991	31.4	47.6	15.9	37.5	51.6	22.3
2001	47.6	50.4	15.3	39.3	51.9	25.7
Rural						
1981	31.3	45.2	17.7	38.8	53.8	23.1
1991	32.1	47.9	16.9	40.0	52.5	26.7
2001	32.6	50.2	15.9	42.0	52.4	31.0
Urban						
1981	27.4	43.4	11.8	30.0	49.1	8.3
1991	29.6	46.8	13.0	30.2	48.9	9.2
2001	31.6	50.8	13.5	32.2	50.00	11.6

Source: census 1981, 1991, 2001

The male work participation in rural area are increasing over the years from 45.2 percent in 1991 to 50.2 percent in 2001 in Kerala and in India the rural male work participation is decreasing from 1981to 2001. In the case of urban work participation, both male and female rate is increasing in Kerala and India. The urban male work participation in Kerala is 43.4 percent in1981 and female share is only 11.8 percent. But in the year 2001 both the figure increased to 50.8 percent for male and 13.5 percent for female. In the same period, India has also shown the similar trend in both male and female work participation rate. A noted feature shown in the analysis is that, the employment and work opportunities available in urban areas are male friendly than female .The female composition of the population has to strive ahead to attain the employment accessibility. The slight positive trend in female work force in urban area is attributed to manifold socio-economic mobility and better academic attainment of the Kerala urban women.

2.3.6 **Non- economic Components of Urbanization: Sex ratio**

The socio- economic and cultural specificities maintained by a society will reflect on the sex composition of the region. It is an important social indicator of measuring the equality between male and female at a point of time. Sex ratio an indicator of gender inequality is important that it shed some interesting light that on the other aspects of gender relations (Dreze and Sen, 1995).

Kerala is one of the states where the females dominate in number over males. The analysis of the sex -ratio pattern reveals that it has gradually increased from 1004 in 1901 to1028 in 1951 but a slight declining trend during 1961 and 1971 and then it is showing a steady increasing trend. The Census of India 2001 shows that the state of Kerala has an increase of 22 points in the sex ratio. It is the only state in India were sex ratio is above the equality ratio and broken

the record of 100 years with 1058 females per 1000 males in 2001. In the state of Kerala demonstrates a concentration of the Population but the socio-economic facilities too. As an area becomes urbanized there will be large assemblage of economic and non-economic facilities. In kerala the spread and growth of these facilities cannot be confining with in urban area, still, urban areas in Kerala state are famous for socio economic opportunities of life. The high socio economic opportunities available in Kerala will reflect on the sex composition. It is evident in the table 2.10

Table 2.12 Sex-wise Distribution of Population

Year	Area	Kerala	India
1981	Rural	1034	952
	Urban	1021	880
	Total	1032	934
1991	Rural	1037	939
	Urban	1034	894
	Total	1036	927
2001	Rural	1059	946
	Urban	1058	901
	Total	1058	933

Source: census 1981, 1991, 2001

The urban–rural divide in sex ratio is negligible one in kerala due to the equal distribution of socio-economic opportunities of life. It is clear in the table 2: 10 the total sex ratio was 934 during 1981 and it has spiraled to 933 in 2001, while it was 1032 in 1981 and increased to 1058 in 2001. In the case of urban sex ratio it was 880 in 1981 and slowly changed into 933 in 2001.But Kerala's urban sex ratio was 1021 in 1981, steadily moved in to 1058 in 2001. The inter variation between Kerala and India with respect rural sex ratio is remarkable one. In 1981 India's rural sex ratio was 952 but it in1980 Kerala's it was 1034 in 1991Rural sex ratio

was moved to 946 in 2001 but Kerala's is moved 1059. The intra-variation in Kerala is standing in favor of rural areas with respect of sex ratio.

In the district of Wayanad and Idukki lies far below the equality ratio in the two censuses and the rate of urbanization in these two districts were very low. The highest sex ratio is shown in the district of Kannur and the degree of urbanization is high as per 2001 Census. In addition to Kannur the district of Malappuram, Palakkad Alappuzha, Kollam and Thiruvananthapuram, the sex ratio is above equality ratio and higher than states averages. Districts of Kozhikode Ernakulam, Kottayam the sex ratio are lower than state average. In the case of Ernakulam, a positive trend is shown from 1901 onwards. The district of Pathanamthitta is reported to have the highest sex ratio of (1094) followed by the f Thrissur (1092) and Kannur (1090).

2.4 Urban Population in Ernakulam

The estimation of the urbanisation that visible in Kerala helps us to analyse the urban growth process in Ernakulam districts in a smooth manner. We try to analyze this through the following ways, the District-Wise percentage of urban population in Kerala, Urban population growth in Ernakulam District, Growth of urban population of Ernakulam in comparison with Kerala and India, and through using the details of the District's density of population. We also used the Taluk wise split up of population growth to highlight the pattern of the population concentration across the different regions of Kochi.

The intra- variation of population is one of the best methods to estimate the spread population in a region. We employed the district wise distribution of population table to attain this objective. The details of the district-wise percentage of urban population itself explains the features of urban formation in the different districts in Kerala. To a certain extent, the urban

growth process in Kerala is in conformity with the trend and pattern of urban growth in India. As in the case of India the urban centers in Kerala are also grown up in the coastal belts.

Table 2.13 District Wise Urban population

SL. No	State/Districts	Total / Urban	No of Households	Persons	Percent of Urban Population
	Kerala	Total	6,726,356	31,841,374	
		Urban	1,716,097	8,266,925	26
1	Alappuzha	Total	483,960	2,109,160	
		Urban	138,032	621,457	30
2	Ernakulam	Total	693,161	3,105,798	
		Urban	328,280	1,477,085	48
3	Idukki	Total	265,344	1,129,221	
		Urban	13,088	57,593	5
4	Kannur	Total	457,368	2,408,956	
		Urban	219,436	1,212,898	50
5	Kasaragod	Total	225,252	1,204,078	
		Urban	43,716	233,700	19
6	Kollam	Total	593,314	2,585,208	
		Urban	101,580	465,978	18
7	Kottayam	Total	434,520	1,953,646	
		Urban	65,793	299,808	15
8	Kozhikode	Total	567,658	2,879,131	
		Urban	203,101	1,101,157	38
9	Malappuram	Total	612,413	3,625,471	
		Urban	59,691	356,170	10
10	Palakkad	Total	530,216	2,617,482	
		Urban	74,305	356,575	14
11	Pathanamthitta	Total	297,134	1,234,016	
		Urban	28,636	123,798	10
12	Thiruvananthapuram	Total	759,382	3,234,356	
		Urban	253,729	1,091,661	34
13	Thrissur	Total	639,871	2,974,232	
		Urban	180,345	839,433	28
14	Wayanad	Total	166,763	780,619	
		Urban	6,365	29,612	4

Sources: Calculated from Census of India 2001, series-33, Kerala, final population Totals

The far remote agriculture surplus producing high land of kerala are exhibiting very low number of urban population. The districts with larger in geographical size are conceiving small number of urban population. There are 5 districts in Kerala having urban population higher than state average .The highest share of urban population is claimed to the district of Kannur (50 percent) followed by Ernakulam (48 percent). The state capital has accommodated only 34 percent of the total population in its urban areas. In this respect the kerala is deviating from the Indian experience. Another major district in Kerala, Kozhikode bears 38 percent of its population as urban. The notable thing in the analysis is that, all the high urbanite districts of Kerala are grown up in the western coast of Kerala. They were some of the renowned trading centers in the past. The districts of large in size in Kerala are bearing low amounts of urban population, evidently Palakkad (14 percent), Idukki (5 percent) and Wayanad (4 percent). These districts are lying in the armpit of the Western Ghats and all the three do not have coastal lines.

2.4.1 Growth of Urban Population in Ernakulam from 1901-2001

The district of Ernakulam has the maximum of urban area than other districts of Kerala. The urban population of the district was 3.95 lakhs in 1961 and increased to 13.73 lakhs in1991 and become 14.77 lakhs in 2001.From the table 2.14 it is clear that the percentage of urban population increases steadily from 1901 onwards and reached a maximum of 48.74% during 1991 census period. But during 2001 a slight declining trend (48.74 to 47.56%). in the rate has visible in the table It is mainly due to the declassification of some of the towns in Kerala, i.e., Piravom, Koothattukulam and Eloor.

Table 2.14 Growth of Urban Population in Ernakulam 1901-2001

Year	Total Population	Urban Population	Percent of Urban Population
1901	646261	74198	11.48
191	735297	87353	11.88
1921	789343	96492	12.22
1931	982769	150579	15.32
1941	1172335	189809	16.19
151	1393730	261923	18.79
1961	1698575	395310	23.27
1971	2383178	636010	26.69
1981	2535294	1002892	39.56
1991	2817236	1373177	48.74
2001	3105798	1477085	47.56

Source: Census report2001, Series-33, Kerala, Final population total

The density of population in Ernakulam district attains higher values than the state averages and it also shows a steady growth rate too, the details given in Table 2.15.

Table 2.15 Density of Population in Ernakulam

Year	Kerala		Ernakulam	
	Density	Growth Rate	Density	Growth Rate
1901	165	-	368	-
1911	184	11.52	305	-17.12
1921	201	9.24	328	7.54
1931	245	21.89	408	24.39
1941	284	15.92	487	19.36
1951	349	22.89	579	18.89
1961	435	24.64	706	21.93
1971	549	26.21	899	27.34
1981	655	19.31	1053	17.13
1991	747	14.05	1162	10.35
2001	817	9.37	1050	-9.64

Source: Census report2001, Series-33, Kerala, Final population total

2.4.2 Urban Population to Total Population of Ernakulam with Kerala and India

The analysis of the growth of urban to total population in the District reveals a steady growth the urban population in all the geographical units (see Table2.16). In India's case her urban population is growing continuously over the periods but a one point reduction is visible in both the Ernakulam and Kerala specifically in the last two periods. The strategic finding of the analysis is that, among the three geographical units the percentage growth of urban population of Ernakulam is remarkably higher than others in all the census periods.

Table 2.16 Percentage of Urban to Total Population Ernakulam, Kerala and India

Geographical Unit	1971	1981	1991	2001
Ernakulam	26.68	39.56	48.7	47.56
Kerala	16.24	18.74	26.49	25.96
India	19.9	23.33	23.33	27.75

Source: Govt. of Kerala (2005)

The results of the comparative growth rates of the urban population also substantiate the fact. In both Ernakulam and Kerala the highest rate of growth is existed during 1981-1991 periods but in India's case it is occurred during 1971-1981 periods. The Table 2.17 shows that during 1991-2001 periods the rate of growth has obtained a lower value in Ernakulam and Kerala

Table 2.17 Comparative Growth Rate of Kerala and Ernakulam

	1971-1981		1981-1991		1991-2001	
Geographical Unit	Total	Urban	Total	Urban	Total	Urban
Ernakulam	17.18	36.58	11.12	36.92	9.09	7.57
Kerala	19.24	37.64	14.32	60.9	9.42	7.64

India	24.66	46.14	23.85	36.46	21.34	31.13

Source: Govt.of Kerala (2005)

The growth rate of Kerala in this regard was highest (60.90 percent) during 1981-1991and lowest (7.64) during 1991-2001.In Ernakulam district also the growth rate of urban population is showing an increasing trend over the periods between 1971-2001(Table2.17) and it was highest one during 1981-91 periods.

2.4.3 Taluk-wise Total and Projected Population

The table No.2.18 shows the percentages of the decadal variation in the total population and its projections for year 2021 in Ernakulam. It reveals that there will only be moderate level of growth in the total population of Ernakulam district in 2021.

Table 2.18 Taluk wise Percentage of Total and Projected Population

Taluk	**Population**				**Projected Population**	
	1971	**1981**	**1991**	**2001**	**2011**	**2021**
Aluva	13.97	14.42	14.46	14.32	14.32	14.32
Kanayannur	23.06	23.95	24.84	25.44	25.44	25.44
Kochi	18.34	17.79	17.18	16.25	16.25	16.25
Kothamangalam	6.58	6.5	6.56	7.26	7.26	7.26
Kunnthunadu	13.5	13.73	13.82	13.96	13.96	13.96
Muvattupuzha	11.56	10.95	10.71	10.45	10.45	10.45
Paravoor	12.99	12.66	12.44	12.32	12.32	12.32
Ernakulam district	100	100	100	100	100	100

Source: Govt.of Kerala (2005)

The table 2.19 gives the details of the Taluk- wise percentage growth of the urban population of Ernakulam. It is significantly noted in the table that the loin's share of the urban population is concentrating on the two Taluks of the district, say Kanayannur and Kochi over the period from 1971 to 2001, i.e, the growing urban population in the District of Ernakulam is heavily concentrated on the City areas of Kochi**.** It is a strategic that the city of Kochi lying within the geographical limits of the two Taluks. The North- East region of Kochi belongs to

Kanayannur Taluk and the Western Kochi to the Taluk of Kochi. The projected figure also states that the position of these Taluks with respect to the concentration of the urban population will maintain the status in 2021 too.

Table 2.19 Taluk-wise Percentage of Urban and Projected Urban Population

Taluk	Percent of Population				Percent of Projected population	
	1971	1981	1991	2001	2011	2021
Aluva	6	5	11	14	17	14
Kanayannur	42	44	41	44	44	44
Kochi	37	25	20	19	19	19
Kothamangalam	1	3	3	3	3	3
Kunnthunadu	3	2	2	2	2	2
Muvattupuzha	3	3	5	2	2	2
Paravoor	7	17	20	17	14	17
Ernakulam district	100	100	100	100	100	100

Source: Govt. of Kerala (2005)

2.4.4 Taluk- wise Total and Urban Areas

The urban areas of Kochi has a tremendous increase over the different census periods, evidently in the Table 2.20, the urban area of the district was 377.60 during the 1981census periods but within a ten year periods it has increased to 544.21 Sq. km .It is significantly inferred from the table that within the limit of the city the core regions expanding rapidly that the peripheral areas. The table also gives the evidences that the urban areas of Taluk of Kanayannur wider than the area of Kochi Taluk in the both periods. The total geographical area of the District also increases over the periods. It is due to the incorporation of new areas to Ernakulam Districts.

Table 2.20 Taluk-wise Total and Urban Area

S l. No	Name of Taluk	1981		1991	
		Total area (Sq.km)	Urban area (Sq.km)	Total area (Sq.km)	Urban area (Sq.km)
1	Aluva	326.3	31.2	343.3	77.17
2	Kanayannur	322.7	160.1	322.74	181.14
3	Kochi	140.9	43.7	140.84	43.7
4	Kothamangalam	285	37.5	284.96	40.04
5	Kunnthunadu	677.7	13.6	465.55	13.59
6	Muvattupuzha	433.5	13.2	433.53	65.72
7	Paravoor	191.6	78.3	198.59	122.85
Total		2377.7	377.6	2189.51	544.21

Source: Govt.of Kerala (2005)

2.5 Conclusion

In this chapter, we have analyzed the trend and pattern of urbanization in Kerala with that of India. Kerala stands far away from the leading states of India with respect to urban growth process. But considering the avenues and amenities unleashed by urbanization is far better than other states. Leading cities in Kerala are amenable to satisfy the wimps and aspiration of the new generation. The percentage of urban population to total population is consistently increasing year after year in India. In Kerala also follows the same trend with that of India except in 2001. The Indian urban growth process has possessed some peculiar features. It has nurtured by the agro industrial centers, the setting up of institutional and administrative centers including tourist centers and as a positive consequence of the emergence of industrial centers and state head quarters. But kerala urban growth pattern is specifically not following the features as such exhibited by the Indian states. The specific pattern of urban growth existed in Kerala is moulded in the specific settlement pattern and peculiar way of living of

the keralites. A clear and concrete village system is emulated in Indian context. The rural urban divide in Kerala is so naïve and it makes difficult to demarcate were towns ends and village starts.

In Indian context, of the three determinant factors of urbanization such as, natural growth, net migration and jurisdictional changes have an equal importance. But in Kerala net migration is not as powerful as in India and the remaining factors are prominent.

The growth of towns in India is developed in accordance with expansion of the strong industrial base administrative and tourism and availing the privilege of state headquarters. Most of the towns in Kerala developed either as trading, marketing, or administrative centers. The largest percentage of urban population concentration on the national headquarters corroborates this fact. But the state headquarters, Thiruvananthapuram, cited a comparative lower concentration of urban population. The high concentration of population is claimed to a northern district in Kerala i.e. Kannur.

Considering the growth of towns and degree of urbanization in Indian states no congruity is shown between growth of towns and degree of urbanization. State having high degree of urbanization triggers a very low percent of total towns in India. The southern state Tamil Nadu is reported to have higher number of towns and UAs in India. But her share in urbanization is comparatively lower.

Urban growth pattern exist in India have some remarkable features. Larger number of population concentrated in state head quarters of India. Higher urban populations are claiming to be to the state of smaller geographical area. All major states with higher urban population are seen to be located in costal belts of India which underlines the role of port or trading centers in the formation of urban centers in India. The southern states are leading among the

high-urbanized states in India. The northern states with vast geographical area are interestingly accommodating lower size of urban population. Industrially advanced sates in India have possessed higher share of urban population.

Growth of town in Kerala has shown a declining trend from 1991 onwards and which attain a very low number in the year 2001. But the size wise occupation of the population has shown a high rate of growth during this period. The population in class I towns have attributed very high population growth especially from 1981 onwards. An attempt has also been made to analyze the rate of growth of urban population from spatial and natural division angle .The results are also shown a positive trend in urban growth pattern. In addition to the economic components of urbanization some of the non-economic component is also worked out in this respect. In tune with the Indian and Kerala perception of urbanization a district wise analysis has also been applied in order to project the space of Kochi city in the area of urbanization in Kerala. It is also found that the growing urban population of the district is predominantly concentrated on the Kanayannur and Kochi Taluks and the city areas of Kochi are coming under their geographical limits. There is steady increase in the urban areas of Ernakulam District over the census periods. In this broad frame, urbanization and cities growth have some spatial implications in Kerala society especially in nature of land transaction, which we discuss in the next chapter

CHAPTER III

THE NATURE OF LAND TRANSACTION

3.1 Introduction

The urban growth process in Kerala is different from other parts of India due to its specific settlement pattern. The diverse settlement pattern existing in Kerala has tremendous impact on the urban land market. Land market is a decentralized mechanism constituted by the economy itself to cater to the manifold demand for land requirements of an area. The present chapter analyses the responses of land market to the rapid urbanization process experienced in Kochi city. The land transactions in the study area have been examined through size and number of plots and the magnitude and the nature of plots transacted in the land market. This chapter is divided into two parts. In the first part we discuss the nature of land transaction with respect to size and number of plots and in part two we examine the magnitude land transactions.

Part I: The size and Number of Plots Transacted

3.2 Nature of Land Transactions

As for a back ground to the study of land market behavior of Kochi we provide an overview of the concepts, methods and data for the analysis.

Concepts

We intend to examine the nature of land transactions in the land market that operating in the city of Kochi for inter-spatial and inter-temporal comparison. The nature of land transactions in the market are ascertained through in two ways , one, on the basis of the specificity involved in the number of transactions and their sizes, and two, on the basis of the magnitude

and nature of land transactions. The magnitude of land transaction is referred as the total number of plots involved in each transaction and the nature of land transaction explains the size of the plots in each transaction.

The Method

The study primarily relied data on land transaction in the major regions of Kochi. As envisaged in the literature on land market, there are inter-spatial and inter-temporal variations in the land transaction. To estimate the inter-spatial variations, we divide the whole area of the city in to three as core (C1), extension of the core (C2) and peripheral area (C3). The transactions at these regions are considered as the aggregate transactions.

The literature on land transactions also stated that, there is the existence of the intra –spatial variations in the transaction with in a region. In order to measure this, we again divided the region into different sub- region taking village as a base. In the C1 region there are subdivisions as Cheranellur, Ernakulam, and Elamkulam. The region of C2 is divided into two as Edappally South and Edappally North. Like wise, the regions of C3 are divided in to five as Mattanchery, Palluruthy, Rameswaram, Thoppumpady, Edakochi and, Fortkochi. These sub- regions are considered as disaggregate level of the land transaction. We firstly try to analyze the land market behavior at aggregate level then move to the disaggregate level.

An attempt has been made to estimate the sizes of plots transacted over the years at aggregate and disaggregate level to identify the most preferable size group of plots in each region. The total number of plots and transactions are calculated for all regions separately and distributed in to different size groups to that effect. The most preferable size group plots are identified on the basis of the maximum number of plots involved in each transaction. The lowest group is fixed less than three cents and highest in greater than 24 cents on basis of the minimum

requirement of land for different purposes. We also made an attempt to estimate the inter-temporal variations in the size of plots over the period too. The following Bivariate tables are devised to realize this objective. We follow the method of analyze the plot wise transaction at the aggregate level first and then move to their disaggregate levels.

The magnitude and nature of the transaction are analysed through using two variables viz, number of times a piece of plot is transacted within a region during the period and the number of plots involved in the transactions. The total number of time by which each plot transacted during the period for all regions are estimated and arranged in accordance with their occurrence. The total number of plots involved in such transactions also calculated and distributed for the whole period. The magnitude of land transactions are measured on the basis of the maximum number of plots involved the repetitions of transactions. This will also give a distant indication of the purposes of the land utilizations in the region. We incorporated the values of average size of plots in order to estimate the nature of land transactions.

3.2.1 The Land Transaction

We try to analyse the nature of land transactions of three regions of Kochi. The land requirements and their transaction of a region have been directly linked with the functional characteristics and nature of economic and social activity evolved in the f that region. As mentioned in the introductory chapter, 'C1 region' is a centre of hectic business, administrative and other social sector activities. The C2 region also has high infrastructural and socio economic activities. C3 region is the area where the activities other than business, commercial and administrative are concentrated. The demand for land in C1, C2 and the C3 regions are different one. Of the two ways of ascertaining the nature of land transactions, the first one is discussed here then we move to the second.

3.2.2 The Size of Plots and Number of Transactions at Aggregate Level: C1 Region

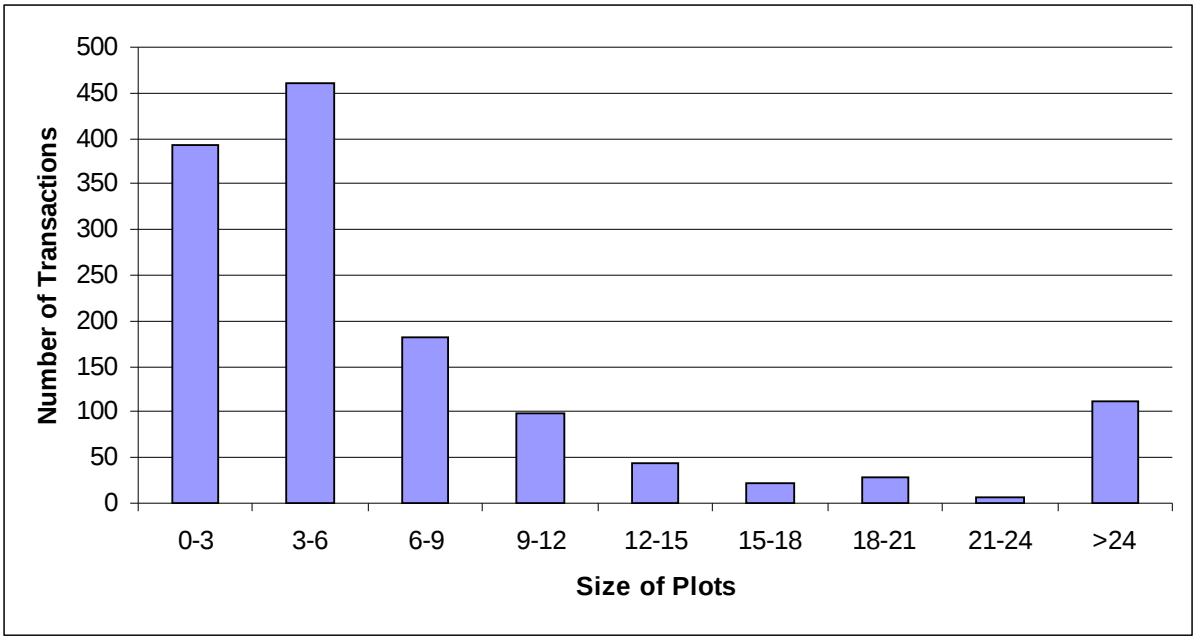
The tables in this part are constructed in a way to show the most preferable size groups of plots and number of plots transacted in the land market of the C1 region of the city. The Table 3.1 gives the details of the distribution of total transactions in size-wise under the C1 region. The samples of 1336 transactions are collected and distributed into different groups to examine the specificities. Examining the distribution it is seen that the most demanded size group is 3-6 cents. It is clear that 35% of the transactions are occurred in this size-group followed by less than 3 cents (25%). The size-group of 6-9 cents has 14% of the transactions. In this area, 78% of transactions belong to less than nine cents of plots and remaining 22% are distributed in the remaining transactions.

Table 3.1 Size of Plots and Number of Transactions in C1 Region

Size of Plot (in cents)	Percentage of Transaction	Total Size (in cents)
0-3	29	716
3 6	35	2038
6-9	14	1354
9-12	7.4	1027
12-15	3.2	577
15-18	0.7	362
18-21	2.2	570
21-24	0.6	180
>25	8.4	8132
Total	100	14956

Source: Own survey

Figure 3.1 Size of Plots and Number of Transactions in C1 Region



Source: Survey

There are only 7.4% of the plots under transaction are 9-12 cents. The fact existing in the core area is that, the size of plots and number of transaction under each transaction is inversely related except of preferable size-group. When the size of plot is 12-15 cents the (3.2%) of plots are entered into the market. When the size group of plots increased to 21-24 cents, the number of plots under transactions shrunk to 0.6 percent. In the case of more than 24 cents, there are112 plots are existing in this group for transactions.

The land market in the C1 region exhibits following behavioral pattern in the nature of land transactions. The smaller plots are playing dominant role in the transactions in this region over the period. The 3 to 6 cents of plots are the most transacted plots in the core region of the city. There is only lesser number of plots entered in to the market for sale and resale purpose the analysis is also shows that higher and higher parcels of plots are transacting with smaller size of plots.

3.2.2.1 Size of Plots and Number of Transactions at Disaggregate Level: C1 Region

With the results of the nature of land transactions at the aggregate level we moved in to its disaggregate level. The table 3.2 given below gives a comprehensive account of the size and number of plots transacted in the three sub- regions (Cheranellur, Ernakulam and Elamkulam) under the C1 region.

In tune with the aggregate level, the transactions in the Cheranellur village area also show a preference towards the smaller plots. The specific size of the most transacted plots is 3 to 6 cents. The 36% of the transactions belong to this category. It is followed by less than three cents and occupying 29% of the total transactions. More than 25 cents of plots commands only 8% of the total transaction over the period.

In the Ernakulam sub-region (the inner core of Kochi), the land transaction has shown some peculiar features than the other areas of C-1 with respect to size group and number of plots in transactions. It is inferred from the table 3.2 is that; the more preferable size group of plots is less than three cents and that constitutes the 38% of the total land transactions in the area. When the size of plots increased to 3-6 cents the number of plots in transactions decreased to 30 percents and sold maximum size of land (529 cents). Then onwards the number of plots decreased with every increase in the size of plots. When the size of plots increased to 15-18 cents there are only 1.3% plots came into the market.

In Elamkulam village of the C-1 region, the more preferable size group of plots is 3-6 cents which is 36%of the plots 9 (see Table3.2). The size group of less than three-cents of plots commands 22% of transactions and sold 186 cents of plots in the market.

Table 3.2 Size of Plots and Number of Transactions at disaggregate Level: C1 region

Size of Plots (in cents)	Cheranellur		Ernakulam		Elamkulam	
	Percentage of Transaction	Total Size (in cents)	Percentage of Transaction	Total Size (in cents)	Percentage of Transaction	Total Size (in cents)
0-3	29	273	38	257	22	186
3-6	36	773	30	529	36	736
6-9	11	417	13	386	16	551
9-12	8	406	6	260	8	361
12-15	3	227	3	144	3	206
15-18	2	201	1	78	1	83
18-21	2	215	1	95	3	260
21-24	1	67	1	67	0	46
>25	8	1735	6	850	11	5547
Total	100	4314	100	2666	100	7976

Source: Survey

As the sizes of plots increases the numbers of transactions are also increases. When the size of plots is 6-9 cents the number of transactions decreased to 16% and when it increased to 9-12 cents the number of transactions decreased to Eight percent and transacted a total size of 361 cents of plots. When the size of plots is 18-12 cents (3% of transaction) the total size of plots increased to 260 cents.

The inter-comparison of the land transaction at the aggregate and disaggregate level reveals that, all the villages in the C1 region are mutually agrees with the aggregate level in number and size of transactions. But the village of Ernakulam shows a little bit of disagreement with aggregate level with respect to the most transacted plots. In that village the most transacted size group of plots is less than three cents of plots but at the aggregate level it was the 3 to 6

cents plots. In all other respects, the transactions at disaggregate level follows the same pattern with that of the aggregate level.

The intra-comparison of land transactions in the three sub-regions infers that the preferable size groups of plots in Cheranellur and Elamkulam villages are 3-6 cents , but in Ernakulam village it is the less than three cents of plots. The size and the number of transactions are inversely related in all the sub-regions other than the most transacted plots.

3.2.3 Size of Plots and Number of Transaction at Aggregate Level: C2 Region

We have seen the features of the land transactions at the aggregate and disaggregate level of C1 region, then let us move to the case of the C2 region. The transactions of C2 region also provide the same result with of the aggregate of C1 region.

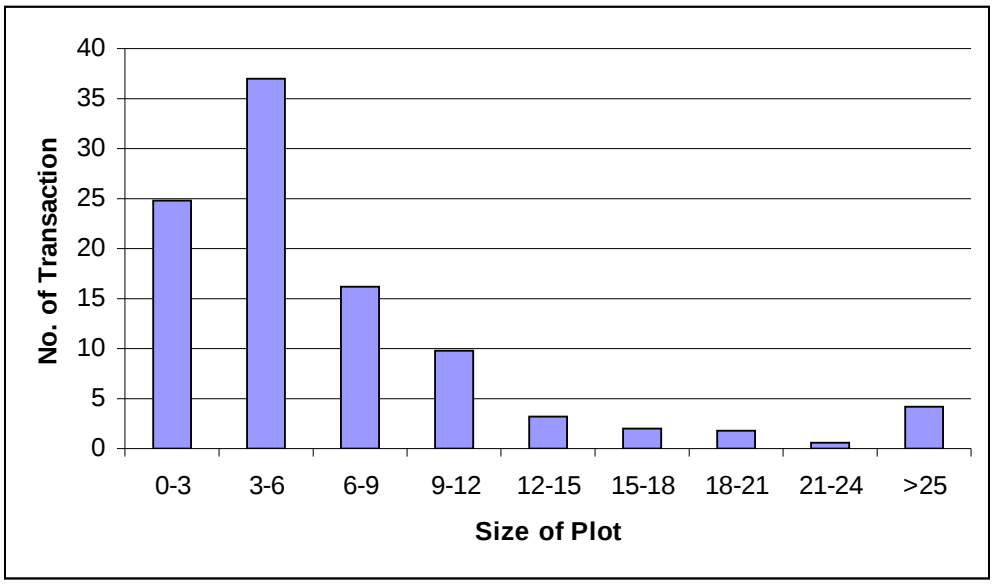
It is shown in the Table 3.3 and the figure 3.2 that, the more preferable size-group of plots in the C-2 region is 3-6 cents and 37.01% of transactions have been occurred in this size-group and followed by less than three cents of plots (24.8 %).The relationship between the size and the number of transactions are negative in the region too except of 3-6 size groups. The 16.03 % of transactions in this area belong to 6-9 cents and it increased to 9-12 cents when the percentage increased to 9.08. In the size-group of 27-31 there are only 2.4 % of plots transacted. In the largest size- group of plots, the number of plots transacted is very minimum, it could capture only1.3 % of the total transactions in the region

Table 3.3: Size of Plots and Number of Transactions in C2 Region

Size of Plots (in cents)	Percentage of Transaction	Total size (in cents)
0-3	24.8	899
3-6	37.1	3181
6-9	16.3	2237
9-12	9.8	1876
12-15	3.2	810
15-18	2.1	634
18-21	1.8	672
21-24	0.7	292
>25	4.2	3535
Total	100	14136

Source: Survey

Figure 3.2 Size of Plots and Number of Transactions at Aggregate level in the C2 Region



Source: Survey

3.2.3.1 Size of Plots and Number of Transactions at Disaggregate Level: C2 Region

The results of the aggregate level transaction enables us to look the case of disaggregate level more rigorously. It is to note that no significant deviations are observed between the aggregate and the disaggregate levels transactions in its basic features viz. size and number of transactions, and most demanded plots. The intra- variations in land transactions are not significant one too.

Both the two villages in this sub-region are sharing the common features in the land transactions. The size of plots that demanded mostly in the land market is one and the same (3-6 cents) in both villages. About 34.2% and 40% of the transactions are centered on this size group. In both cases the relation between the size and number of transactions is inversely related other than preferable size group. When the size of plots is 6-9 cents the number of plots in transactions has reduced to16% and 17 % respectively. When the size of plots increased to 9-12 cents the percentage of transaction is reduced to 11.1% and 8%. As it becomes 15-18 cents the percentage of plots in transaction has reduced to one percent and 2.7 percent. At a time, when the size of plots entered in the market become more than 27 cents the two villages turnout only 3.3 percent and one percent of its total transactions.

Table 3.4 Size of plots and Number of Transactions at Disaggregate Level in C2 Region

Size of Plots (in cents)	Edappally North		Edappally South	
	Percentage of Transaction	Total Size (in cents)	Percentage of Transaction	Total Size (in cents)
0-3	23	396	26.3	503
3-6	40	1616	34.2	1565
6-9	17	1059	16	1178
9-12	8	738	11.1	1138
12-15	3	411	2.9	399
15-18	1	194	2.7	440
18-21	2	280	2	392
21-24	1.7	109	0.8	183
>25	4.3	1749	3.9	1786
Total	100	6552	100	7584

Source: survey

3.2.4 The Size of Plots and Number of Transactions at Aggregate Level: C3 Region

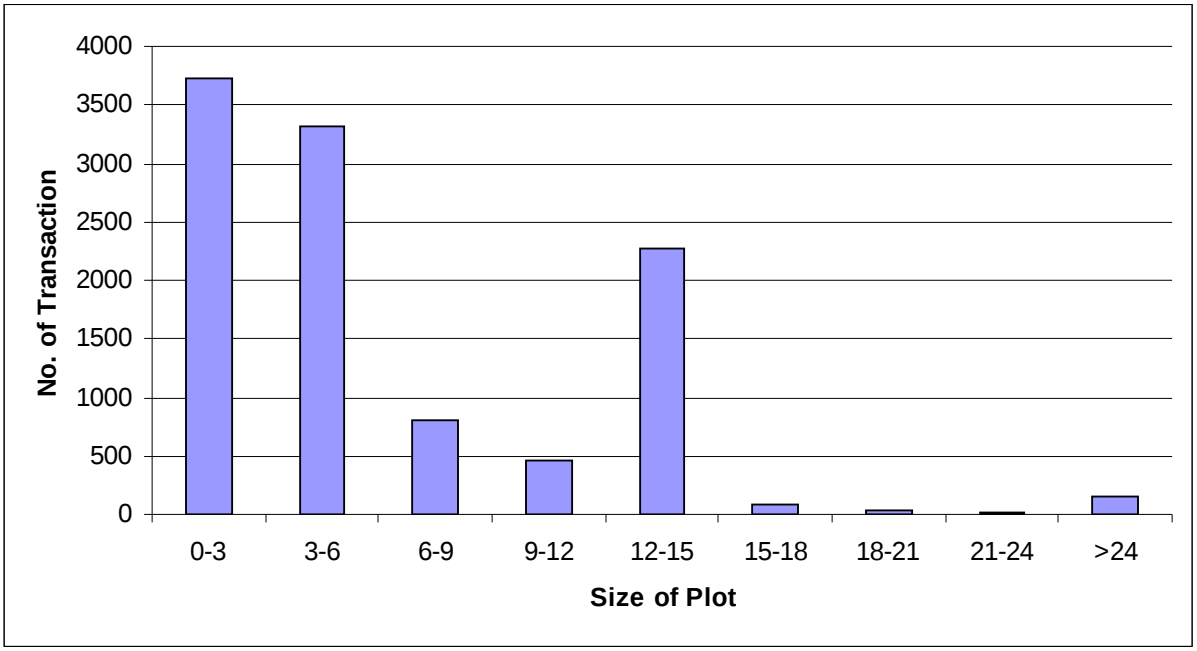
As mentioned earlier Mattanchery (C-3) region is the peripheral area in Kochi. It is seen that the number of transactions are high, hence, we taken an aggregate of 10895 samples in transactions. The analysis of the trend of transactions in the land market of Mattanchery reveals that the small size group of plots playing a leading role. The Table 3.6 infers that a major share of the transactions is occupied by this size group, i.e., 34% belong to this category. Very low share is occupied by more than of 25 cents groups, i.e., only the 1.44% of the total transactions.

Table 3.5 Size of plots and number of transactions at aggregate level in C3 region

Size of Plots (in cents)	Percentages of Transaction	Total Size (in cents)
0-3	34.3	8759
3- 6	30.5	14447
6- 9	7.3	5880
9- 2	4.3	4605
12-15	20.9	2276
15-18	0.7	1337
18-21	0.3	688
21-24	0.2	569
>24	1.4	7687
	100	46248

Source: Survey

Figure 3.3: Size of Plots and Number of Transactions at Aggregate level in theC3 Region



Source: Survey

As stated in the table (3.5), the most demanded size groups of plots in this region are less than three cents. It is followed by the size group of 3-6 cents and has 30.5% of the plots in transactions. The remaining plots are distributed among different size groups. It is significantly noted that the, Table 3.6 also highlights an inverse relation between the size of plots and number of plots in transactions. When the size of plots is 6-9 cents there are seven percent of plots in this group. The size of plots increased to 9-12 cents the percentage of plots reduced to four. This tendency proceeds up to 21-24 cents of plots. The larger size of plots (more than 25 cents) constitutes the 1.44% of the plots in transactions which turnout 7687 cents of total land area of the samples.

3.2.4.1 Size of Plots and Number of Transactions at Disaggregate Level: C3 Region

The aggregate and disaggregate level transaction in the C3 region mutually agrees in both size and number of transactions (given in Table3.7). The most transacted size-group of plots is less than three cents followed by 3 to 6 cents in both levels too .The larger plots have controlled only a smaller size of market in all the villages. There are six villages in the disaggregate level of the C-3 region .The transactions in Mattanchery village area are observed on the basis of 1460 samples. The analysis throws light into the fact that as in the case of other regions, the size of plots and numbers of transactions are of in inverse relationship. Of the total samples 53% are readily sold for less than three cents of plots and followed by the size group of 3-6 cents, i.e., the 29% of the total transactions. There are only 2.1% of the transactions belong to the size-group of more than 25 cents.

Table 3.6a Size of Plots and Number of Transactions at Disaggregate C3 Region

Size of Plot (in cents)	Mattanchery		Palluruthy		Thoppumpady	
	Percentage of Transactions	Total Size (in cents)	Percentage of Transactions	Total Size (in cents)	Percentage of Transactions	Total Size (in cents)
0-3	53	1293	43	1612	46	1777
3-6	29	1848	37	2924	36	2959
6-9	4	953	8	1111	10	1404
9-12	4	569	5	914	4	768
12-15	2	365	3	703	1.4	343
15-18	1	329	0.6	214	1	316
18-21	0.3	79	0.3	134	0.4	159
21-24	0.2	66	0.2	77	0.3	148
>25	2.1	1161	3	2692	1.1	1157
Total	100	6663	100	10381	100	9031

Table 3.6b Size of Plots and Number of Transactions at Disaggregate C3 Region

Size of Plot (in cents)	Rameswaram		Edakochi		Fortkochi	
	Percentage of Transactions	Total Size (in cents)	Percentage of Transactions	Total Size (in cents)	Percentage of Transactions	Total Size (in cents)
0-3	43	1021	50	1661	48	1395
3-6	39	2104	34	2325	33	2287
6-9	10	916	3	279	10	1217
9-12	3	449	9	1259	4	646
12-15	2	329	0.9	193	2	343
15-18	1	200	0.7	178	0.4	100
18-21	0.1	21	0.6	176	0.4	119
21-24	0.2	65	0.3	122	0.3	91
>25	2	628	0.9	674	1	1375
Total	100	5733	100	6867	100	7573

Source: Survey

In the village of Palluruthy 1779 samples of transactions are collected and tested. The estimation on the basis these observations reveal that the more preferable plots in this village are plots of smaller in size. It also states an inverse relation with size of number of plots in transaction with that aggregate level. All other villages do have the same pattern of the land transactions. The analysis of the inter-comparison of the nature of land transaction produces following inferences. The characteristics that imbibed in the transactions are more or less same in all the villages in the three region of Kochi. The size and number of plots involved in transactions are of in inverse relationship at the three regions. No significant level discrepancy is identified among the villages and with their aggregate level. The most transacted size of plots is 3-6 cents in both C1 and C2 regions. But it is less than three cents in the C3 regions. It is to note that, all the down line village is mutually follow the pattern of there up line aggregate levels. But the Ernakulam village in the Core area has shown a deviation with respect to the preferable size-group of plots with its aggregate level.

3.3 The percentage of Plots Transacted: A Sub-period analysis

So far we have discussed the variation in the land transactions across the various regions of Kochi, let us move to the analysis of it's inter- temporal dimensions. In order to make a close observation, we have divided the whole period in to five sub-periods and distributed the number and size of transactions accordingly. At this stage too we try to elicit the preferable size-group of plots in transactions and to test whether there are any changes occurred to the size of transactions over the periods. We also looked into the variations occurred to the total number and size of plots in transactions over the sub-periods. We have followed the same method of analysis which was used at the whole period, i.e., aggregate and disaggregate levels.

3.3.1 The Percentage of Transactions over the Period at Aggregate Level: C1 Region

The Size of plots and number of transactions at the aggregate level of the C-1 region are given in the table 3.7 and which explains that the most transacted size of plots in the region are different in different sub-periods. It is evident in the table, the size –group of 3 to 6 cents plots are playing a significant role in the sub-periods of 1980-85, 1986-90 and 2001-2005. That constitutes the 37, 33 and 22 percent of the total transactions. But in 1996-00 it is the less than 3 cents of plots. In 1991-95 sub-periods both the size-groups have occupied an equal number of transactions. It is also seen that, no consistent trend is maintained in the distribution of the most transacted sizes of plots in all sub-periods. It has a declining trend in the first three sub- periods but then onwards an inconsistent trend is visible in the remaining sub-periods.

Table 3.7: The Percentage of transactions at Disaggregate C1 region

Sub-Periods	<3	3-6	6-9	>9	Total
1980-1985	34	37	17	12	100
1986-1990	20	33	26	21	100
1991-1995	22	22	18	38	100
1996-2000	31	30	22	18	100
2001-2005	20	22	49	9	100

Source: Survey

The other noted aspect of the analysis is that demand for less than three cents of plots is highly fluctuating one in all the sub-periods. At the same time a steady growth in the demand for the larger plots are also seen in the first three sub-periods. There is an inter- temporal growth in the total size of plots that transacted over the sub- periods, the values are (1980-85 (2020), 1986-90 (2093), 1991-95 (2430), 1996-2000 (3900), and in 2001-2005 (4808))

respectively. This variation in the total size plots is taken as one of the evidences of the linkage between urbanization process and the responsiveness of the land market in Kochi.

3.3.1.1 **Percentage of Transactions over the Period at Disaggregate Level: C1 Region**

a. Cheranellur Village

The table 3.8 gives the profile of the land transaction take place at the disaggregate level under the Ernakulam region. The disaggregate level analysis of the Cheranellur village mutually agrees with its aggregate level. The most demanded size group has been shifting between less than three cents and 3 to 6 cents in different sub- periods. It is noted in the table, during 1980-85, the most demanded size group of plot is 3-6 cents; and commands 28 percentage of the transaction. But in all other sub-periods say, 1991-95, 1996-00 and 2001-05, the most demanded size groups of plots are 3-6 cents. A steady growth is visible in the entry of larger size of plots (greater than nine cents) to the market over the sub-periods .A five point increases in the growth in the transaction of the largest plots is observed in the table. No significant level of deviations is seen from the aggregate level with respect to number of transactions.

Table 3.8 Percentage of Transactions over the Period: Cheranellur Village

Sub-Periods	<3	3-6	6-9	>9	Total
1980-1985	20	28	8	44	100
1986-1990	18	44	14	24	100
1991-1995	21	28	10	41	100
1996-2000	36	36	13	15	100
2001-2005	38	38	10	14	100

Source: Survey

b. Ernakulam village

The analysis of the sub-period wise transactions in the Ernakulam village shows (given in table 3.9) that the most demanded size group of plots is varying between less than three and 3-6 cents of plots. It is inferred from the same table that, in 1980-85 and 1991-1995 sub- periods the most transacted size- group of plots is less than three cents and followed by 3-6 cents. But during 1986-90 become 3-6 cents of plots. The inter-temporal variation in the demand for different sizes of plots is attributed to the rapid shift that occurred in the economic activities of the village. It is to note that it is the period in which the rapid urbanization process (detailed in chapter–II) that take place in Kochi, and hence there was high shift of population to the core areas of the city. In 1996-2000 and 2001-2005 the demand for plots is shifted towards the large sized plots. The prominent role played by the less than three cents of plots in the aggregate level is attributed to the existence of high demand for the same size of plots (50%) in that village in1980-1985 sub-period.

Table 3.9 Percentage of Transactions over the Period: Ernakulam Village

Sub-Periods	<3	3-6	6-9	>9	Total
1980-1985	50	29	11	10	100
1986-1990	34	43	14	9	100
1991-1995	37	34	12	17	100
1996-2000	32	22	13	33	100
2001-2005	26	24	18	32	100

Source: Survey

C. Elamkulam Village

The table 3.10 gives an account of the variations in the transactions of plots in different sub-periods; as the case of the other villages the preference of plots is varying between less than

three cents and 3-6 cents over the sub-periods. It is also seen that in 1980-85, 1986-90 and 1991-95 sub-periods the most transacted size of plots are 3-6 cents but a shift has been cited towards the larger plots in 1996-00 and 2001-05 sub-periods. A three point increase in the demand for 3-6 cents of plots is observed in the sub-period between 1980 and 1995.The transaction of the larger plots has also cited a six point increase in the demand the period from 1996 to 2005 but at the same time the number of plots entered in the market has shown a decreasing trend.

Table 3.10 Percentage of transactions over the Period: Elamkulam Village

Sub-Periods	<3	3-6	6-9	>9	Total
1980-1985	22	44	15	19	100
1986-1990	28	33	20	19	100
1991-1995	24	47	9	20	100
1996-2000	21	24	20	35	100
2001-2005	17	26	17	40	100

Source: Survey

3.3.2 **The percentage of Transactions at Aggregate level of C2 Region**

The table3.11 provides the aggregate analysis of the C-2 region; the major ideas that receives from the table is that, the most transacted size- group of plots is 3-6 cents except of 1980-85 sub-periods. The demand for the most transacted plots also have an increasing trend over the sub- periods .A three-point growth in the most transacted plots has also visible in the table.

Table 3.11 Percentage of Transactions at Aggregate Level: C2 Region

Sub-Periods	<3	3-6	6-9	>9	Total
1980-85	21	28	17	34	100
1986-90	19	36	22	23	100
1991-95	17	34	17	32	100
1996-00	25	37	16	22	100
2001-05	30	41	14	17	100

Source: Survey

The percentage of the number of plots transacted in different periods are 41 % in 1980-85, 36 % 1986-90, 34% 1991-95 , 37% 1996-2000 and 41% in 2001-05. It is also evident that there is growth in the total number of plots entered into the market in different sub- periods.

3.3.2.1 Percentage of transactions at Disaggregates of C2 Region

The disaggregate level of the C-2 region follows the same trend with that of the aggregate level in all most all respects (see table3.12). The preference towards size- group of plots is uniform (3 to 6 cents) in all the sub- periods.

In Edappally South village, there is no shift in the size of plots transacted over different sub-periods. The size group of 3 to 6 cents is the most demanded one in the sub-region. There is no significant deviations are noticed between the aggregate and disaggregate level transactions. The total number and size of plots in different sub-periods are seen increasing continuously over the sib-periods.

Table 3.12 Percentage of Transactions over period: Edappally South Village

Sub-Periods	<3	3 - 6	6 - 9	>9	Total
1980-85	19	39	20	22	100
1986-90	17	43	21	19	100
1991-95	20	39	16	25	100
1996-00	25	39	16	20	100
2001-05	30	40	14	16	100

Source: Survey

Table 3.13 Percentage of Transactions over the Period: Edappally North Village

Sub-Periods	<3	3 - 6	6 - 9	>9	Total
1980-85	21	25	16	38	100
1986-90	20	32	23	25	100
1991-95	15	31	18	36	100
1996-00	25	33	16	26	100

Source: Survey

In Edappally north village, the most demanded size of plots is the 3 to 6 cents in all sub-periods (table 3.13). No deviations from the aggregate level transactions are visible in the analysis. The transaction of the most demanded size groups of plots has been changing in alternative sub-periods (1980-85 and 1991-95). The shifting of the preference of plots in the aggregate level of this region is mainly due to the changes that occurred in the Village. The total number and size of plots in transactions are seen increasing except in last sub-period.

3.3.3 Percentage of Transactions over the Period at Aggregate Level: C3 Region

The details of the sub-periods transactions of the C3- region are given in the table 3.14. The table shows that the most demanded size of plots in the aggregate is less than three cents. The percentages of the number of plots transacted during different sub-periods are 40 % in 1980-85, 47 % 1986-90, 43 %, 1991-95, 53% 1996-00 and 53% in 2001-05 respectively. The demand for the most transacted plots did not shown any consistent trend over the periods. A 13 point increase in the transactions of the most demanded plots have also cited in the analysis. The other remarkable feature of the land transaction in the sub-region is the total number and size of plots increases except of the last two ones i.e., 1996-2000(9738) and

2001-05 (3456). Being the C-3 region a peripheral area of the city, its connectivity and proximity of services are not sound one but the same time the availability of land is comparatively higher than the other regions of the city. These facts might reflect on the demand for land and their transactions.

Table 3.14 Percentage of Transactions over the Period at Aggregate Level: C3 Region

Sub-Periods	<3	3 - 6	6 - 9	>9	Total
1980-85	40	38	11	11	100
1986-90	47	37	9	7	100
1991-95	43	35	12	10	100
1996-00	53	31	9	7	100
2001-05	53	33	12	2	100

Source: Survey

3.3.3.1 Percentage of Transactions over the Period at Disaggregate Level: C3 Region

The sub- period wise transactions of the plots of all villages in the Mattanchery region are cited in the following tables. The analysis of the Mattanchery village shows that in 1980-85, there is equal number of transaction is take place in the less than three cents and 3-6 cents. In all other sub- periods, it is occupied by the lees than three cents of plots. A high growth in the most demanded size of plots has also visible in the analysis. It shows a 31point increase in the transaction of the most demanded plots over the sub- periods. The high demand for the less than three cents of plots in the aggregate level is due to the peculiarity in the transactions of the Mattanchery village.

Table 3.15 Percentage of Transactions over the Period: Mattanchery village

Sub-Periods	<3	3 - 6	6 - 9	>9	Total
1980-85	39	39	11	11	100
1986-90	58	28	5	9	100
1991-95	51	28	12	9	100
1996-00	58	24	9	9	100
2001-05	61	23	5	11	100

Source: Survey

Table 3.16 Percentage of Transactions over the Period: Palluruthy village

Sub-Periods	<3	3 - 6	6 - 9	>9	Total
1980-85	38	41	9	12	100
1986-90	41	39	9	11	100
1991-95	41	39	7	13	100
1996-00	50	30	9	11	100
2001-05	52	33	10	5	100

Source: Survey

In Palluruthy Village, most demanded size group of plots are less than three cents except of 1981-85 (table3.17).It is noticed in the table that the transaction of the most demanded size of plots has an increasing trend during these sub-periods. It has also shown a steady growth in the transactions of 3-6 cents of plots .A 11 point increase in the demand for less than three cents of plots since 1991-1995 sub-periods.

Table 3.17 Percentage of Transaction over the Period: Rameswaram village

Sub-Periods	<3	3 - 6	6 - 9	>9	Total
1980-85	38	37	14	11	100
1986-90	48	37	8	7	100
1991-95	43	35	12	10	100
1996-00	55	34	6	5	100
2001-05	58	32	7	3	100

Source: Survey

In Rameswaram village, the most demanded size group of plots is less than three cents in all the sub-periods. As the experience of other villages, here also, the transactions of the most demanded size group of plots has been showing an increasing trend. 20 point growths in the transactions of this size group of plots are noticed in the analysis. No significant level of deviations is seen from the aggregate level transaction.

Table 3.18 Percentage of Transactions over the Period: Thoppumpady Village

Sub-Periods	<3	3 - 6	6 - 9	>9	Total
1986-90	36	45	13	6	100
1991-95	38	40	11	11	100

1996-00	46	37	9	8	100
2001-05	53	34	6	7	100

Source: Survey

In Thoppumpady village the most demanded size of plot is different in different sub –periods (table3.18).Evidently in 1986-90 and 1991-95 sub-periods it is 3-6 cents but in 1996-2000 and 2001-05 it become the less than three cents of plots.

Table 3.19 Percentage of Transactions over the Period: Edakochi village

Sub-Periods	<3	3 - 6	6 - 9	>9	Total
1980-85	45	36	9	10	100
1986-90	50	33	8	9	100
1991-95	43	34	14	9	100
1996-00	55	31	9	5	100
2001-05	48	37	11	5	100

Source: Survey

In Edakochi village the land transactions are mutually agrees with the aggregate level in all the sub- periods

Table 3.20 Percentage of Transactions over the Period: Fortkochi Village

Sub-Periods	<3	3 - 6	6 - 9	>9	Total
1980-85	45	36	8	11	100
1986-90	50	33	8	9	100
1991-95	43	34	14	9	100
1996-00	55	31	9	5	100
2001-05	48	37	10	5	100

Source: Survey

The most transacted size of plots is less than three cents in Fortkochi Village and it is followed by 3-6 cents of plots. The transaction of the most demanded plots has also have an increasing trend over the sub- periods in this village too.

The remarkable feature of the sub-period analysis is that, the small plots are playing the leading role in the land market and no significant level of deviations is observed between the

aggregate and the disaggregate levels. A sizable amount of transactions are also occurred in the larger size-group of plots. It is also cited that, an increasing trend in the demand for the most transacted size- group of plots through out the analysis. An over all growth in the demand for land has been cited in this region in period after periods is mainly due to the rapid growth of economic activities in the region.

PART III: Magnitude of Land Transactions

3.4 Estimation of Land transactions through its magnitude and nature.

In the last two parts we put the effort to estimate the variation in the size of plots and number of transactions under transaction over space and time in the city of Kochi. In this we try to estimate the nature of land transactions by looking in to its magnitude and nature transactions the three regions of Kochi. It is a known fact that the actual size of land transacted in a region may vary with the changes in the major uses of land. The analysis of land market will be complete without considering these issues too. We are also try to derive the reflections of the in the uses of land on transactions with the concept of magnitude and nature of land transactions. The following bivariate tables are devised to show the details of the magnitude and nature of the land transaction more clearly. The details such as number of times each plot is transacted, and the number of plots involved in those transactions are given in the table. The first column gives the details of the number of plots transacted; the second shows the number of plots in each transaction and the succeeding column for the values of average size of the transactions .The tables are arranged in the order of the aggregate levels first and then the disaggregate level. The sub-regions under the C1, C2 and C3 region are also put in different groups so as to make inter-intra comparisons. If any disproportionality between the

aggregate and disaggregate levels is found, the analysis is further extended to draw the direction of disproportionality instantaneously.

3.4.1 The Magnitude and Nature of Land Transaction at Aggregate level: C1 region

The total size of plots that came into the market for transaction at aggregate level is classified into different classes in accordance with its occurrence of transaction. As mentioned earlier, the magnitude and nature of land transactions are estimated on the basis of the volume of plots in each transaction.

Table 3.21 Magnitude and Nature of Land transaction at Aggregate Level: C1 Region

No. of Transactions	Percentage of Plots	Average Size (in cents)
0-4	99.5	30
5-9	0.5	943
10-14	0	0
15-19	0	0
20-24	0	0
>25	0	0
Total	100	973

Source: Survey

The number of transactions involved in a specific plot is measured along with the first column of the table given below. The variations in the transactions are arranged numerically from the lowest to the highest.

The land transactions at the aggregate level under C-1 region (table 3.21) reveal that the majority of plots have come into the market only for smaller times. It is evident that out of a total of 1108 that came into the market, 99.5 % was transacted only less than four times followed by0.5 % for than five times.

The nature of land transactions at the aggregate level of the C1 region characterized with following features. A large number of plots came into the market for less than four times and only a minor portion of the plots for more than five times. The features of the nature of land transactions underline the purpose for which the land is used in C1 region. It is also evident in the relationship between the number of time a plot transacted and their average size of plot. The plots which repeating for less than four times whose average size is comparatively low one. But the plot which transacted for higher times their average size is very high. It is corroboration of the large bunch of plot is either used for housing or making it as a source of their livelihood .Since C1 is urban core area the prominent share of the land might be used to satisfy the purpose of commerce and administrative purpose rather than residential purpose. So the probable share of the plots transacted in C1 region for commercial and administrative purpose. It is only a few plots are put in the land market for real estate or speculative purposes. This feature of land market are evident that the Smaller plots are not seen repeating transaction for many times.

There are only 0.1 % has come in for sale and resale ten times. The values of average size of transactions are incorporated into the table in order to assimilate the nature of transactions. The specificities involved in each transaction can also be derived on the basis of the variations in the average size of transactions.

A remarkable feature of the nature of land transaction at the aggregate level in the C-1 region is that the average size of plot in each transaction increases by the number of transactions. So the nature of land transactions in the aggregate level is that plots larger in size are transacted more than the smaller ones. It can also be said that the number of transactions increases in accordance with the increase in the average size of transactions.

3.4.1.2 Magnitude and Nature of Land Transaction at Disaggregate Level: C1 Region

In the light of the conclusions arrived at the aggregate level transactions we propose to move on to the disaggregate level. The task confronted at this stage is to compare the transactions taken place at different sub-regions with the aggregate level. We focused to check whether the bunch of transactions takes place at different those levels are in conformity with transactions at the aggregate level.

The literature on land transaction stated that, the land transaction in the outer and inner core within core region are different in size and numbers of plots. In order to test these regional variations with in a region, we divide the C1 region into two as outer and inner core. There are two outer cores as Cheranellur, Elamkulam and one inner core as Ernakulam.

The land transactions taken place at different village levels are given in Table 3.22. This helps us to give the details of transactions of three villages under the area in a comprehensive manner. It is also enables us to compare and contrast the variations among the sub-regions of the C-1, C2, and C3 regions. As mentioned earlier, of the three villages, Ernakulam is taken as the village in the inner core and Cheranellur and Elamkulam in the outer core area. The case of the land transaction in the Ernakulam sub-region reveals that it is highly in conformity with the aggregate level transactions without any significant level of deviation. There is one plot in the Ernakulam sub-region seen repeating transaction for seven times and its corresponding size of plots is also seen very high. Table 3.22 also highlights the fact that 99.70% of the transactions take place for lees than four times. The highest number of time of transaction, say more than five times, occurs only in 0.3 % of the total plots. The number and the average size of transactions are positively related. It is evident from the table that the number of transaction is less than four times when the average size of transaction is three cents. As the

number of transaction moves to the maximum, the average size of transactions becomes 246 cents. While the maximum average size of the plot transacted in that village of Cheranellur is 16 cents. But the corresponding value in the other outer core village (Elamkulam) is 681 cents. This is the highest size of plot transacted in the entire core area. Elamkulam village that lies in the eastern part of Kochi, which has been expanding, is an emerging area whose growth and development pattern is miraculous in recent years. Majority of landed property in these places is developed by reclaiming waterlogged areas. Hence the availability of land here is comparatively higher than in the core area. The head quarters of the Greater Cochin Development Authority is situated here.

Table 3.22: The Magnitude and Nature of Land Transaction at Disaggregate Level: C1 Region

Cheranellur (Outer core)			Ernakulam (inner core)		Elamkulam (outer core)	
No. Of Transactions	Percentage of plots	Average Size of plots (in cents)	Percentage of plots	Average Size of plots (in cents)	Percentage of plots	Average Size of plots (in cents)
0-4	99.75	11	99.7	3	99	16
5-9	0.25	16	0.3	246	1	681
10-14	0	0	0	0	0	0
15-19	0	0	0	0	0	0
20-24	0	0	0	0	0	0
>25	0	0	0	0	0	0
Total	100	26.9	100	249	100	697

Source: Survey

3.4.2 Magnitude and Nature of Land Transaction at Aggregate Level: C2 Region

There is only a smaller section of the transaction belong to larger frequency. In the case of nature of transaction the large sized plots are transacting more in number in the land market. Table 3.23 shows that of the total number of plots are available in the aggregate level 99.6% of the transactions belong to the less than four times category. The size of plots transacted in this group varies from very low to high. It is seen that the transactions in that area have some similarities in nature and magnitude with those of the core area.

Table 3.23: The Magnitude and Nature of Land Transaction at Aggregate Level: C2 region

No. of transactions	Percentage of plots	Average size of plots (in Cents)
1-4	99.6	122
5-9	0.4	172
10-14	0	0
15-24	0	0
>25	0	0
Total	100	294

Source: Survey

Table 3.24: The magnitude and Nature of Land Transaction at Disaggregate Level: Edappally South and North villages

No. of transactions	**Percentage of plots**	**Average Size of plots (in cents)**	**Percentage of plots**	**Average size of plots (in Cents)**
1 -4	99.9	67	99.2	55
5 -9	0.1	19	0.8	153
10 -14	0	0	0	0
15- 24	0	0	0	0
>25	0	0	0	0
Total	100.0	86	100.0	208

Source: Survey

The village level analysis shows the very same and similar pattern of transactions with the aggregate level. Any significant levels of deviations are not shown in the transactions existing among the villages. But some slight changes have occurred in the absolute values in the number of plots transacted in different frequency group.

It is seen the table3.24 that. In Edappally south village, of the total 99.9% of the plots are putting only for less than four times in the entire period of time. The only 0.1%of the total sample is repeating for the remaining transactions.

Another village in this sub-region is Edappally north, the total 664 number of sample collected in regard, and exposes that 99.2% of the total sample is being repeated only for less than four times in the total course of time. .Of the total 0.1% of the transactions is for more than five times. Considering the average size of plots transacted in each frequency of transaction have shown a positive relationship. when the frequency of transaction is one the average size of transaction is for less than four cents the average size of transactions are 55 cents .When its spiraling into higher level the average size of transaction are also moving into its higher value.

3.4.3 The Magnitude and Nature of Land Transaction at Aggregate Level: C3 Region

The selected samples of sales in the C -3 region are distributed among different transactions. They are noted for high frequency of transactions, size and number of plots. Table 3.25 shows that the lion's share (91.4%) of the plots is transacted only a few times during the period. Plots transacted less than nine times are 7.0% whereas those transacted more than 24 times come to only 0.1% of the samples. The average size and frequency of transactions are positively related as that of the core area. When the frequency transactions are one to four, the average size of the plot is seven cents. When the frequency moves to the nine-to-twelve-class, then

the average size of transaction also moves to 22cents. This trend is continued till frequency reaches the maximum of 20 to 24. The notable thing in this class is that the average size is reduced to 48 cents. It is attributed to the fall in the total size of plot in the concerned transaction. The frequency of transaction goes up to more than 25 times when the average size is a maximum of 104 cents.

Table 3.25: The Magnitude and Nature of Land Transaction at Aggregate Level: C3 Region

Number of transactions	Percent of plots	Avg. Size of plots (in cents)
1 - 4	91.4	7
4 - 9	7.0	22
10 - 14	0.9	44
15 -19	0.3	49
20 - 24	0.2	48
>24	0.1	104
	100	

Source: Survey

3.4.3.1 Magnitude and Nature of Land Transaction at Disaggregate level: C3 Region

A crucial portion of the land entered into the market only less than four times. Only a microscopic share of the remaining plots is put for sale and resale purposes. This is the common feature visible in the transactions of all villages. The nature of the transactions is common in all the villages. So the analysis arrives at the conclusion that there is no significant level of deviation from the aggregate level of transaction. The intra-variations in transactions are not significant in the village level.

In the village of Mattanchery, the total number of plots is distributed among the different transactions. The result shows that 99% of the samples repeat the sales less than four times. The range of the transaction is in between 0.024 and 52.4 cents. There are only 0.29% of plots in sizes ranging from 0.264 to 15.75 cents that entered into the market for more than fifteen

times. Table 3.26 shows that the smaller plots repeat lesser times in the market than the larger ones. The values of average size transactions substantiate these facts. 99% of land with an average size of six cents repeated transactions less than four-times. The plots transacted for less than nine times have a comparatively higher average size of 23 cents. A maximum frequency of fifteen times transactions took place at an average size of 49 cents. It can be deduced that the nature of relationship in the frequency and average size of transactions is positive throughout, from the beginning to the end.

Table 3.26: The Magnitude and Nature of Land transaction at Disaggregate Level: C3 village

Frequency	Mattanchery		Palluruthy		Rameswaram		Thoppumpady		Edakochi		Fortkochi	
	% of Plot	Avg. Size	% of Plot	Avg. Size	% of Plot	Avg. Size	% of Plot	Avg. Size	% of Plot	Avg. Size	% of Plot	Avg. Size
0-4	99	6	88	14	91	8	92	6	91.5	7	91	5
5-9	.5	23	9	27	8.7	9	6	20	8	19	5	22
10-14	.2	39	1	42	0.53	51	1	52	0.4	35	2	34
15-19	0	0	1	50	0.1	72	1	45	0.3	46	0.3	47
20-24	0.3	49	0.5	63	0	0	0	0	0.1	39	1	47
>25	0	0	0.2	81	0	0	0	0	0	0	0.1	170
Total	100	0	100	0	100	0	100	0	100	0	100	0

Source: Survey

The analysis of 562 samples of plots in Palluruthy village gives following results. The number of plots in each transaction is inversely related to its frequency. Like villages in the area, the average size of plot of transaction and frequency are positively related. It is evident in the same table that 88% plots have entered less than four times into the market and 9% less than nine times. There are only 3% of the plots that transacted more than 24 times. The details of

the positive relationship of the number and average size of transactions are given in Table 3.27 where 88% of the plots transacted have an average size of 14 cents and 3% have 81cents.

Rameswaram village follows the same pattern at the aggregate level. 90.7% of the 936 samples transacted for less than four times and only 0.1% accounted for less than nineteen times. The average size of the plots increases with every increase in the frequency of transactions.

The analysis shows that, in Thoppumpady village, 91.6 5% of the plots repeated their transactions less than four times and only 6.55% for less than 19 times. Higher numbers of transactions are possible only with plots of higher average sizes.

The village of Edakochi has shown the same features of aggregate level both in magnitude and number of transactions. Of the total samples analyzed 91. 5% are found repeating for less than four times. They are in varied sizes ranging from 0.006 to 100.83 cents. 7.73 % of the sample plots of 0.251 to 33 cents repeated between five and nine times. Only 0.1 percent of the total plots transacted for 14-19 times. The average size of transaction has shown an increasing trend throughout the analysis.

The Fortkochi village level analysis highlights that the transactions here are also similar to that of the aggregate level. The nature of transactions does not show any significant change from the aggregate level market. The intra variations are also negligible. 90% of the transactions in all villages belong to smaller frequency group except in the case of Palluruthy village. Larger plots are transacted more in urban land market than smaller ones.

3.5 Conclusion

In this chapter we have analysed the nature of land transaction, and it is derived through two ways: firstly with number of transactions and their sizes and secondly with the magnitude and nature of land transaction in the urban land market. The analysis has proceeded by dividing the whole area into three as core, extension of core and the peripheral area. The core area has been further segmented into inner and outer core as promulgated in the development literature. We have observed the specificity of land transaction in all these areas separately. We also made inter-intra comparisons to test the internal consistency existing among the area. The analysis work begins from aggregate level and proceeds to disaggregate level in a way to project the basic characteristics evolved in the transaction. We also tried to estimate the inter-temporal variation of the number and size of plots transacted over the periods. To that effect, the whole period had been divided in to different sub-periods and estimated the variations. The analysis of the transactions in different sub-periods also provides more or less the results .No significant level deviations are seen in the transactions in the different sub-periods. The aggregate and disaggregate analysis enables us to arrive at a generalization on the pattern of land transactions in the following way.

The analysis of the nature of land transaction in Kochin city has produced the following results. The features of the average size of plots involved in transaction at both level are same. The plots of larger in size repeatedly come in for transaction at the aggregate and disaggregate levels. Hence it is conclusively established that the magnitude and nature of transaction in the city area of Kochi follow the same pattern.

Our next enquiry is to estimate the exact size of plots in transactions at both levels. The general trend of plots transacted at both levels in all villages the same but some individual variations are seen

The different transactions were collected from the different regions of the city in order to examine the specificity involved in urban land transactions with respect to the size and number of plots. A slight variation is observed in the size of plots in the outer and inner core areas. The size of the most sought plots in the inner core areas is less than three cents. But in the out core area it is the 3 to 6 cents of plots. In the Extended core area all the villages are in tune with the aggregate level. The most striking point here is the existence of a highly common-size-group. The features of transactions on both sides of this group are similar. Interestingly enough, such an economic size group is not visible in other areas of the city.

The size-group of plots in great demand in the areas of periphery is less than three cents as in the inner core area. It is evident here that the major demand for land in both areas is for residential and various commercial activities.

The analysis of the land transaction in Mattanchery land market features no significant changes between the aggregate and the disaggregate level. That no economical size-groups are identified in this region is noteworthy. No sizable inter-intra variation is seen in any of the villages. To put in a nutshell, the land transactions in all the villages have taken in conformity with the aggregate level.

The most demanded size plot remains the same in the outer and the extended core areas of the Kochi. Their proximity to the core makes it easier to avail themselves of all the benefits of the concentration of utilities and services in the core. Since the availability of land in the inner

core is very limited there is a back shift from the inner to extended core, which normally reflects in the land transactions there.

No remarkable changes are seen between aggregate and disaggregate level in core, extension of core and peripheral areas. The magnitude of transaction in disaggregate level have followed the same trend in the aggregate level. Pertaining to the nature of transaction, the village level analysis fore fronted the similar results with that of aggregate level. A major chunk of plots has been involved in less than four times transactions .Only a microscopic portion of the total plots has come in for repeated transaction and this feature is evidenced at both aggregate and disaggregate level.

There exists an inverse relationship between the size and number of plots in transactions in all the areas. The demand and number of very large plot of land in the three regions of Kochi is very low.

A major portion of land in the outer core and peripheral areas is used for constructional and residential purposes .The available land in the inner core is mainly used to cater the huge demand for the much-needed space or commercial and administrative purpose in various sectors.

The analysis recalls that, the land market in C3 region actively involved in distributing the land for residential, commercial and speculative purpose here. The region is lying quite far away from the core region its connectivity with the core is comparatively less. The proximity of the socio-economic facilities is also less. It is also handicap with the low socio-physical condition. The shortage of drinking water is the other problem faced by this region. Hence it is assumed that the land transaction is mainly for the commercial purpose. It is also active in distributing the land for the speculative propose too.

Chapter IV

Trend and Determinants of Land Value in Kochi

4.1 Introduction

The operational side of the land market in the city of Kochi is discussed in the last chapter. It deals with the issues involved in the estimation of value of land in an urban area. The valuation of land and its distribution is one of the major points of the discussions that centered on a land market. Land valuation is a process through which the real estate properties of a region are determined. It is carried out through a property and land market. It actually deals with the distribution of the right to appropriate the immense powers of the land among the stakeholders of a region. The players from both demand and supply sides do have great amount of concern in this process. They participate directly or indirectly in this process in order to safe guard their interests.

There are a variety of heterogeneous factors and forces viz, the existence of many sub-markets, numerous buyers and sellers, local knowledge and unique locational factors that are active in value determination. They work in highly unstructured and informal ways, which makes the valuation of land a Herculean task. The determined prices are distributed unevenly across time and space. An attempt is made to examine the dynamism behind these variations with the help of the internal and external factors like the distance from the core, proximity of services, connectivity with other areas and locational dispositions.

The availability of reliable data is the corner stone of any study on land value. The handicap faced by this study is that the available statistics on land value do not reflect the actual values. The government of Kerala made an attempt in this direction during 2004 but it was in vain. Hence we are constrained to rely on a single source, i.e, and the records of the registered prices maintained by the sub -registrar offices.

A quick perusal of the available literature reveals that no comprehensive attempt seems to have been made to estimate the value variation in the urban areas of Kochi. In this context, a proxy method is developed to estimate inter- temporal and inter-spatial variation of land value in the city. The incorporation of all intricate factors involved in the value determination does not come under the purview of this study. It purports to analyses the distribution of land value through space and time over the years. The chapter is laid out in four parts. The first part deals with the examination of the trend in the value variation over the three markets at the aggregate levels, and the second at dwells on the discussion of the changes in value in the down line villages at disaggregate level. The third part deals with the analysis of the major determinants of land value and the last enumerates the conclusions derived from the discussions.

4.2 Land Value in Kochi

4.2.1 Land Value at Aggregate level

The economic development has of late been measured using the human development indices. It is commonly seen that the land value attains a very high where Human Development Index is high. Kerala is one of the states that manifest a high order in Human Development Index. It is an economy that faces an acute shortage of land for developmental activities and resulting in the skyrocketing of the value of especially in urban areas. During the two decades between 1959 and 1969 the land values in the central areas of major cities have increased from 500 to

700%, where as the consumer price index in these cities in the reference period did not move up to more than 200 % (Government of Kerala, 1987).

We propose to estimate the value variations in the urban areas of Kochi and the villages coming under its geographic boundary on the basis of the value per cent of land transacted at the three regions of Kochi. It is done by looking at the trends in the variation of the value per cent at the aggregate and the disaggregate levels separately.

Table 4.1 Average Value Per Cent in Different Regions of Kochi city (Value in Rs.)

Sub-Periods	C1	C2	C3	Total
1980-85	5536	1806	3557	3524
1986-90	7014	5422	6376	6254
1991-95	12937	8477	9931	10087
1996-00	11958	14133	18288	15593
2001-05	17776	35430	35483	27782
Overall growth rate	6.21**	14.1*	11.56*	9.75*

Note: *, ** coefficients are significant at 1% and 5% levels respectively

Source: Survey

The distribution of the average value percent is given in the table 4.1. It shows a steady growth in the value of land in Kochi over the periods. A seven time increase is noticed in the table. The growth period of Land value into two: period of low as well as high growth.

Figure 4.1 Value per cent of C1, C2 and C3 Total

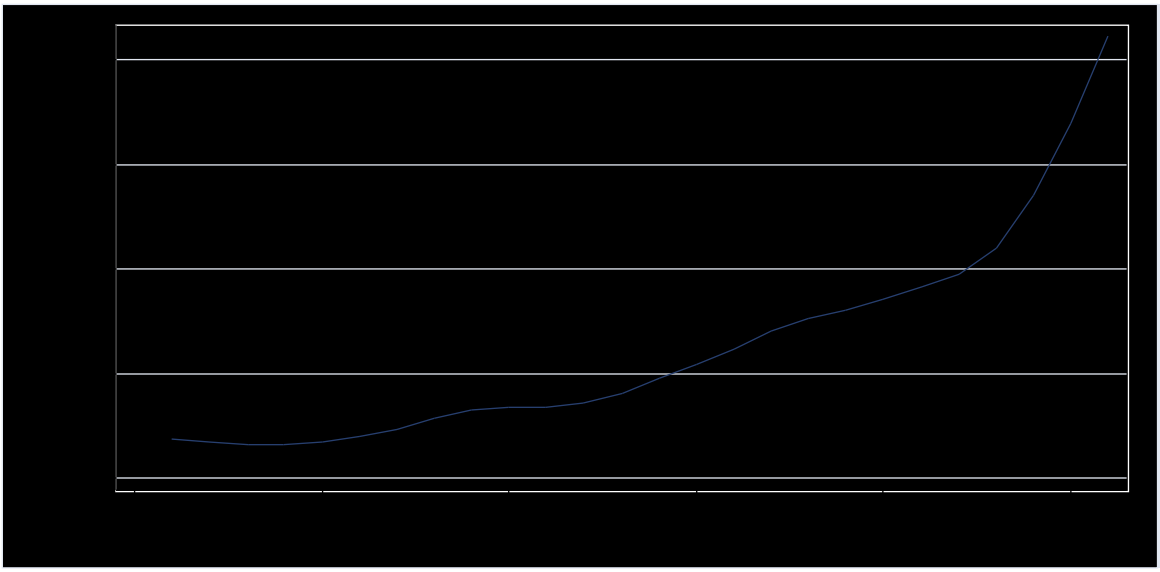
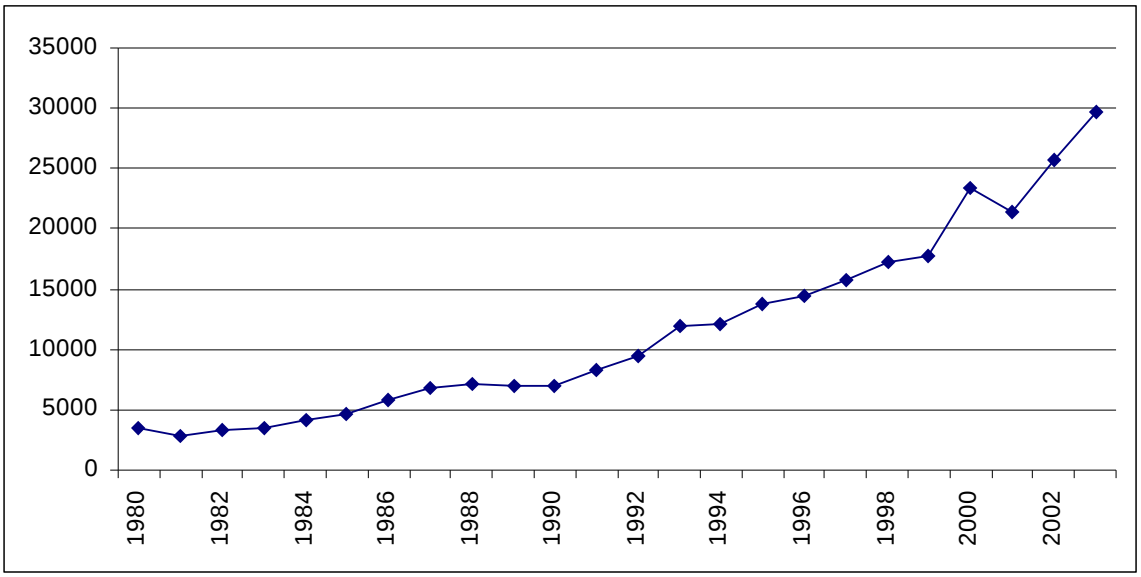


Figure 4.2: Three year Moving Average of Value per cent of C-1, C-2, C-3 regions



Source: Survey

The value per cent of land assumed a low value during 1980-90 sub- periods i.e., Rs 3524 (during1980-85) and 6254 (during1986-90). But from the sub- period 1991-05 onwards it has soared to higher levels, i.e., from Rs.10087 to Rs.27782. The last table also reveals that the land value is growing at a rate of 9.75 over the periods.

Attributes of the high land value in the city of Kochi since 2000

We can attribute the following factors to the existence of high land value during the last two sub- periods (a) the impact of new economic policy on land market (b) Impact of financial sector reforms (c) the Shift in the investment behavior (d) the absence of strong governmental interventions and (e) The influence of black money.

The neo-liberal policy reforms followed by the governments after 1990's have created an economic atmosphere whereby the private-public partnership in development activities flourished. The establishment of the International Air Port at Nedumbassery was the first step in this direction in Kerala. But it has accelerated during 2000-05, especially after the Summit of Global Investment meet held in Kochi. It has paved the way for the entry of innumerable

private initiatives in Kerala. Interestingly enough, majority of them preferred the urban areas and the outskirts of Kochi. The proposals of projects such as the Smart City, the Sobha Developers, the expansion of the Cochin port, Container trans-shipment Terminal at Vallarpadam and Metro rail are name a few. All of them are either fully private or on the Build- Operate-and-Transfer (BOT) schemes. They have had made a magnificent impact on the land transaction scenario and land value scenario in Kochi.

In tune with the economic policies, a set of financial sector reforms has also been introduced to make the sector vibrant in order to attract the new requirements of capital. They have brought about drastic changes in the financial sector of Kerala. The immediate impact was change in the functioning of the nationalised banks in Kerala has changed .A large number of new generation privet sector Banks started business from the year 2000onwards in kochi which followed very liberal lending policies at competitive interest rates following the trail of these banks the nationalised banks were also forced to adopt liberalized lending policies as a result huge amounts of money flowed into the urban areas of Kerala. A large share of the housing loan raised by big players in the market has been diverted in to the real estate sector of Kochi.

Drastic changes occurred in the investment behavior of the Kerala society during this period. Since the agricultural and industrial sectors of Kerala are not performing well, new investment opportunities do not exist in these sectors. In the absence of the productive investment avenues, it has been tilted towards the unproductive and conspicuous channels. The large sum of the money is used to buy gold and other the portion of fund is put in financial assets. The Cochin Stock Exchange has thus second leading market in the country. The risk element in investing in gold is very low but there are no returns where as the risk

component in investing in stock and shares is very high but prospects of return are higher. A remarkable change that occurred in the investment scenario of Kerala society during 1990's is that the transformation of the land into a lucrative investment option. Conventionally land is considered as an active base of productive activity. Yet no investment is made on land now days for boosting the productive base of the Kerala economy. The huge investment in the real estate sector is considered as safe in both risk and returns. The returns from the real estate sector are faster than from any other options of investments.

The policy interventions of the government were very weak. No strong legislations were enacted to regulate the operations of big players in the market resulting in the registration of many bogus deeds in fictitious names. A plot is transacted for many times on a single agreement without registering the deed. Large areas of land are used for speculative purpose instead of productive uses capitalizing on the inefficiency of the department. The black money has also contributed the boom in the real estate sector.

As the demand for land increases for different purposes (the availability of land in the core of the city being limited supply) its value will also go .The high land value and stepped up of economic activities evoke two types of responses. The firms that can afford and tap the facilities provided in the core area respond in one way and the firms that require larger area of land area react in another way. A two-way occurs in business activity- vertical as well as horizontal. The firms, which want to tap the proximity of facilities of the core, expand their activity vertically where as those that shift their activities to its extended and peripheral areas expand horizontally. These horizontal expansions transmit its effects not only on business activities of the region but on the land value too. It is evidenced by the existence of the high land value in the core, extended core and the periphery of Kochi especially in the later

periods. So there are significant levels of high prices existing in the three regions of Kochi. The table shows inter- regional differences in land value too. The high land value in the core region in the initial period is due to the advantage of proximity of services. The location factors of the region that play a leading role in fixation of values rather than the aggregate demand and supply factors.

4.2.2 Land Value in Different Regions of Kochi

The three regions of Kochi (C-1, C-2 and C-3) follow the same trend as that of the aggregate level (table 4.1). But some individual variations are seen in the in the rate of growth. The value of land in three regions increased at a rate of 6.21, (C1) 14.1 (C2) and 11.56 (C3) respectively. In the core area (C1) the value of land is seen to be very high during 1980-1995 compared to the other areas. The hectic commercial, business and administrative activities ultimately led to a situation of high value of land. But from 1996 onwards both the C1 and C2 regions have registered with high land values. This temporal variation in the value of land is the result of the physical expansion of the economic activities detailed above. The C-3 region is a peripheral area and availability of land is comparatively higher and whose functional characteristics are different too. So the value of land in the C3 area is comparatively lower than the other regions.

Another significant aspect noted in the table is that, the highest overall rate of growth in value of land is found in the C-2 region .A number of factors can be attributed for this. Though it is an extended core area it provides all amenities of life as in the core. It is also considered as one of the posh residential areas of Kochi. The factors that contributed the expansion of the area into a highly a polished residential are area: the high network of roads, telecommunication facilities the NH 47, Vyttila to Edappally bye pass ,railroads with a station

at Edappally , International Air port Amirtha Institute of Medical Sciences, Co-operative Medical College, Cochin University of Science and Technology a large number of well reputed private schools, commercial institutions both nationalized commercial banks and the private financial institutions .The facilities for the retail shopping, recreation and other amenities of life are also attracted the city dwellers.

The availability plenty of land area in C-2 also played decisive role in the expansion of the region. Sine a major share of the land area had rested in the hands of a few families and individuals it was easy to mobilise the required amount of land without any delay .The topography of the area are highly suited for the any construction purposes. The socio-environmental condition of the area is conducive for peaceful life. All these contributed positively in the concentration of residential and commercial units to this region.

Table 4.2: Average of Annual Growth Rates of Value Per Cent for Different Regions

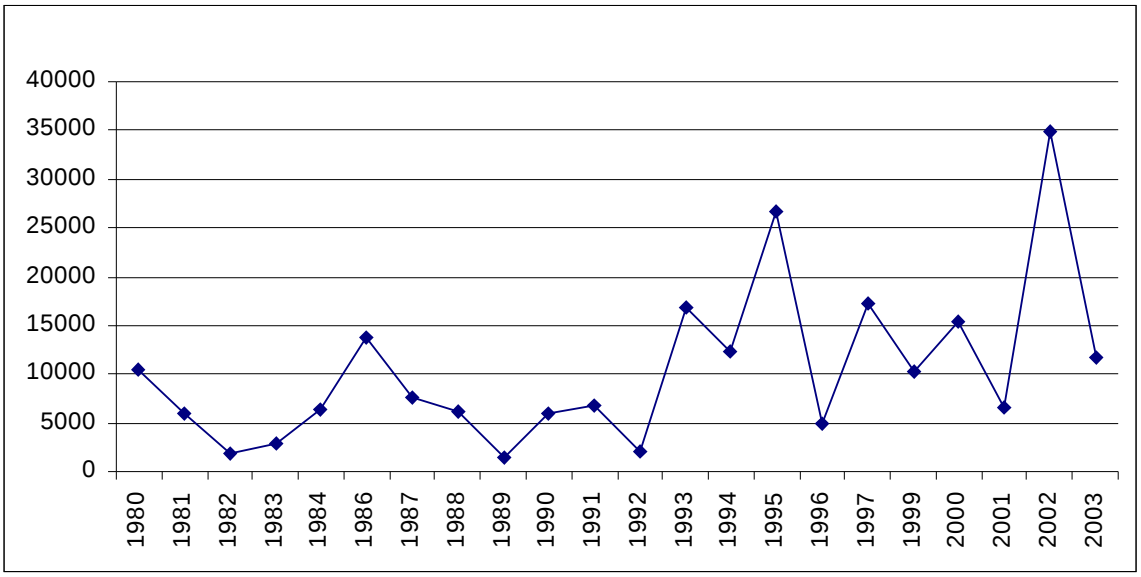
Sub-Period	C1	C2	C3	Total
1980-85	16.3	27.1	32.1	6.5
1986-90	59.0	26.8	15.6	13.4
1991-95	144.0	17.3	12.8	19.0
1996-00	43.0	8.9	14.6	9.2
2001-05	101.6	41.2	29.1	33.3
Overall growth rate	6.21**	14.1*	11.56*	9.75*

Note: *, ** coefficients are significant at 1% and 5% levels respectively

The table 4.2 explains the average of annual growth rates of value per cents in the different regions of Kochi. The annual growth rate of the value per cent of land of the C-1 region attains higher values than the over all growth rates in all the sub-periods. A very high rate of growth is noticed during 1991-95 sub-period. It is also shows a high volatility in the annual growth rates of the value but such situations are not visible in other regions. The table also

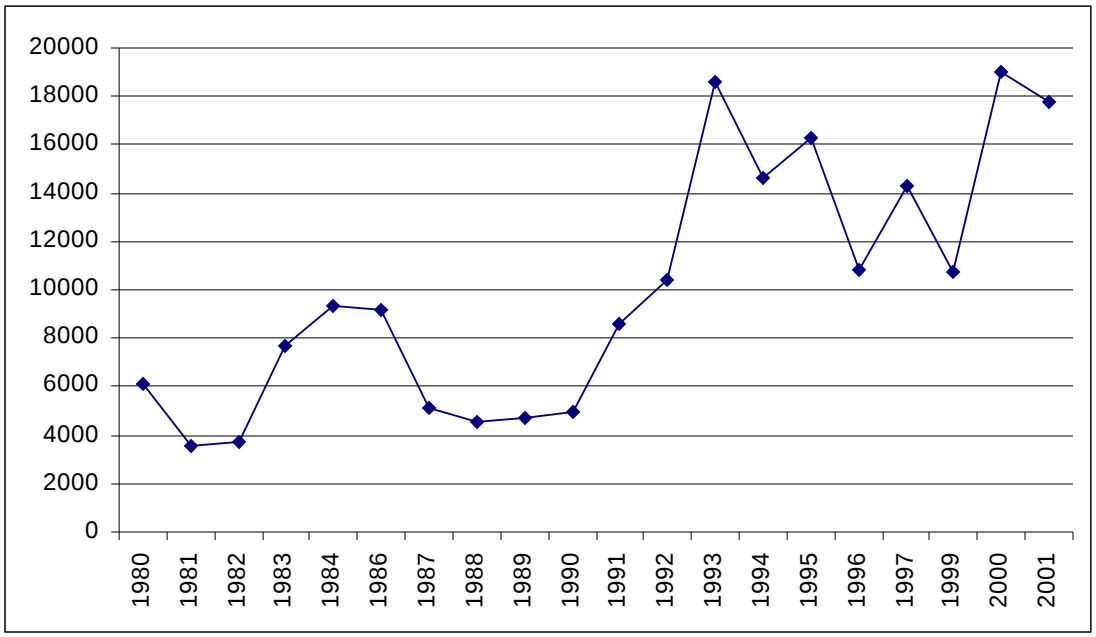
shows that C-1 is the only region in the city whose average of annual growth rates obtains higher values than the total growth rates in all the sub-periods. In the case of C-2 and C-3, the annual growth rates are higher than the overall growth rates in all the sub-periods except of 1996-00(C-1) but they maintain uniformity in the value changes.

Figure 4. 3 Average of annual growth rates of Value Per Cents of Different regions



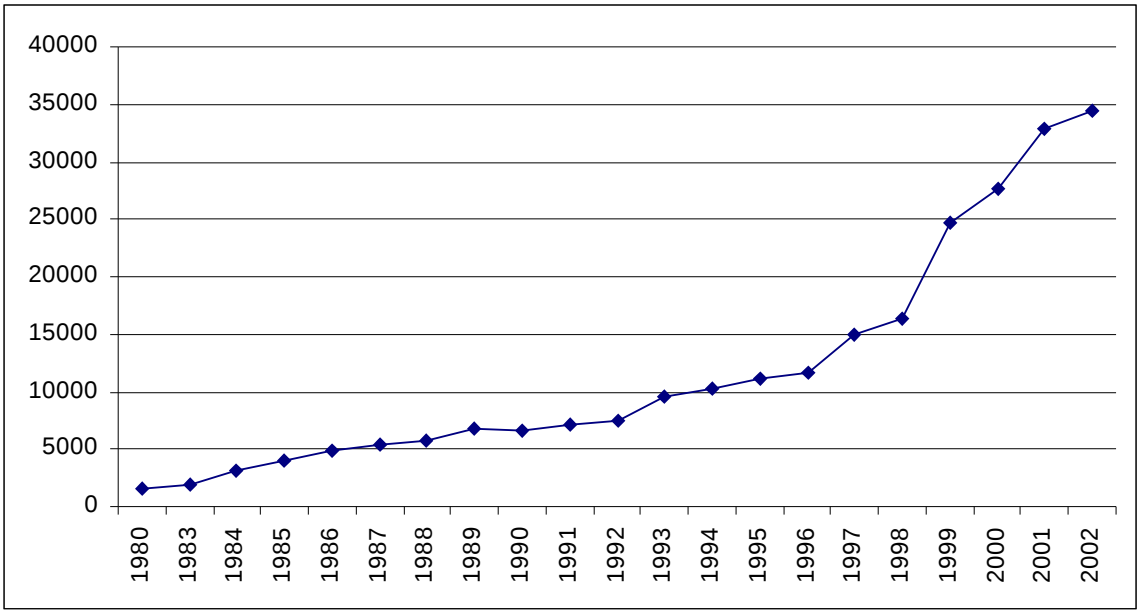
Source: Survey

Figure 4.4 Three yearly Moving Averages of value per cents of C-1 Regions



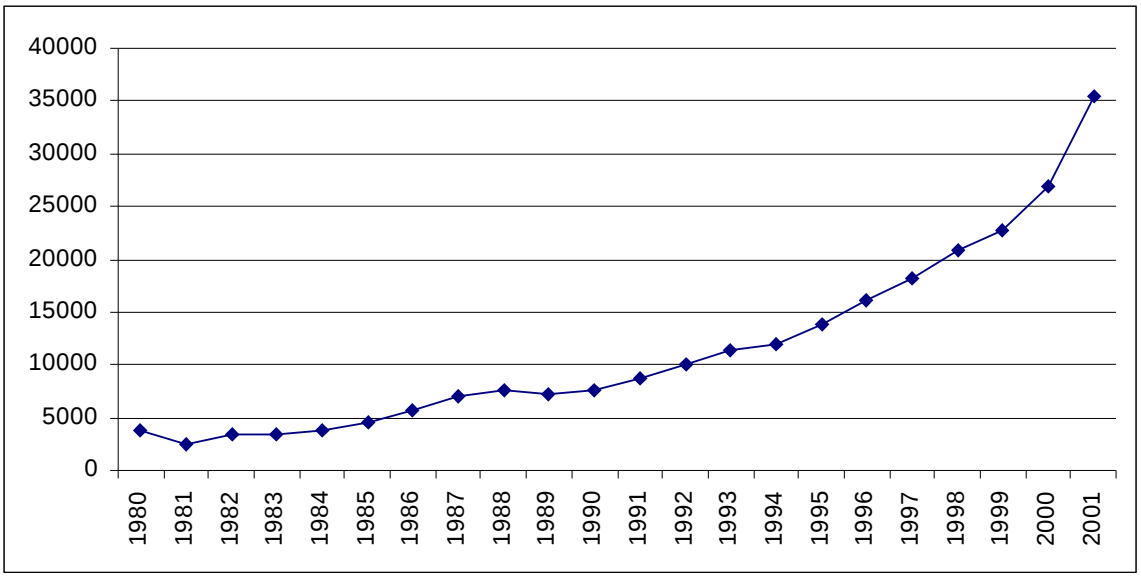
Source: Survey

Figure 4.5: The three yearly Moving Averages of value per cents of C-2 Region



Source: Survey

Figure 4.6 The three yearly moving Averages of value per cents of C-3 Region



Source: Survey

4.2.3 Land Value at the Disaggregate level

Let us to move to disaggregate levels with a concrete idea on the nature and the trend of land values at the aggregate level. At this stage, we propose to estimate how the value of land is distributed across the different villages in the city. An inter-intra comparison is also undertaken to find out the dispropotinality, if any, between the up and down line cases and among the villages.

4.2.3.1 Land Value in the different villages of Ernakulam (C1)

The table 4.3 illustrates how the value of land has been distributed over the three villages of Ernakulam region. It is also we can inferred from the table that all the villages in the region follow the same trend and patterns as that of the aggregate level with respect to the value

variations .It is noteworthy that , the value of land in the three villages is seen increases in a steady manner . The growth of the land per cent of land at this levels can be divided into two : phase of low and high growths. The remarkable thing is that, the value per cent of the Ernakulam village is significantly higher than that of other two villages over the sub-periods. The higher values of land at the aggregate level during the initial sub-periods are due the powerful influence exerted by the village of Ernakulam.

Table 4.3 Average value per cent across the different villages of Ernakulam (C1)

Sub-Periods	Cheranellur	Ernakulam	Elamkulam	C1
1980-85	1226	8239	3302	5536
1986-90	2629	14604	7282	7014
1991-95	4478	37691	12291	12937
1996-00	9472	36766	11095	11958
2001-05	15985	37973	6607	17776
Overall Growth Rate	22.5*	15.2*	9.9**	6.21**

Note: *, ** Coefficients are significant at 1% and 5% levels respectively

The intra-comparison of the movements of the value of land is also noteworthy. The table reveals that there is a significant level of variation in the value per cent over the three villages of the C-1 region. The value per cent is a smaller figure in the initial sub-period in both the Cheranellur and Elamkulam villages where as Ernakulam attains comparatively higher value. The value of land in the Cheranellur village gathers momentum only in the period between 2001and 2005. But in the case of Elamkulam village it has improved from the period of 1986-90 onwards. The over all growth rate the values of the three villages are 22.5 (Cheranellur) 15.2 (Ernakulam) and 9.9(Elamkulam) respectively. Considering the over all growth rates of the value of the three villages the highest rate is claimed to the Cheranellur village. It is significant to note that a thirteen- times growth is noticed in value of land in the Cheranellur village area over the periods but in the case of Ernakulam village it is only five times growth.

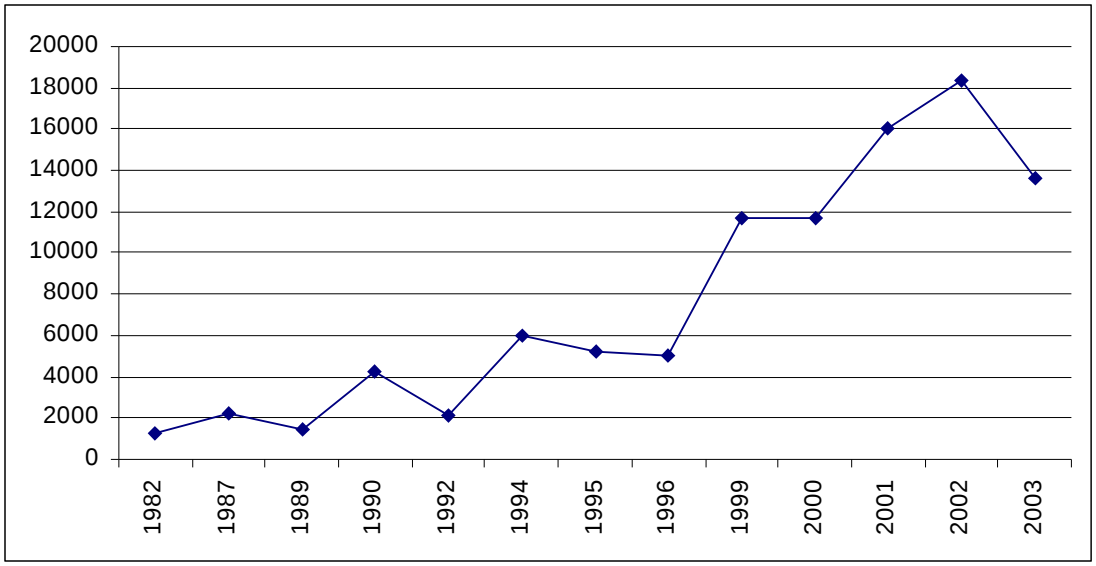
Table 4.4: Average of Annual Growth Rates of Value per cent: Ernakulam Village

Sub-periods	Cheranellur	Ernakulam	Elamkulam
1980-85	NA	-0.1	51
1986-90	81	43	20
1991-95	40	75	17
1996-00	43	-8	-32
2001-05	8	26	62
Overall growth Rate	22.5*	15.2*	9.9**

Note: * ** Coefficients are significant at 1% and 5% levels respectively

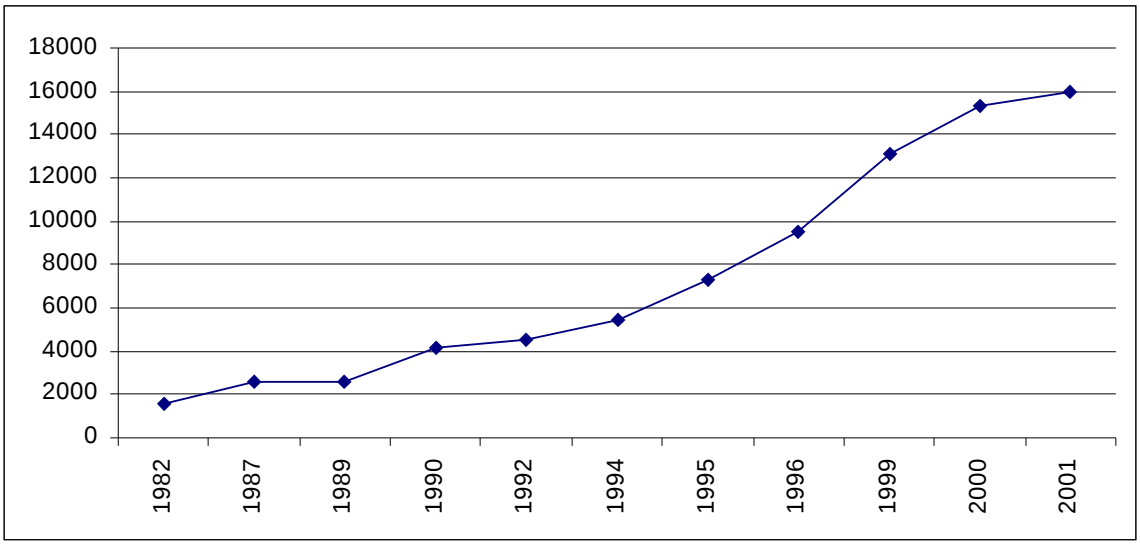
Source: survey

Figure 4.7: Average of annual growth rates of Value per cent: Cheranellur village



Source: Survey

Figure 4.8: Three year Moving Averages of Annual Growth Rates: Cheranellur Village



Source: Survey

Though, Cheranellur is a fringe area of the Ernakulam region it is considered as one of the naturally gifted areas in Kochi. It is encircled by beautiful back waters and estuaries with plentiful avenues of enjoying the natural beauty of Kochi. Vaduthala River a tribute of River Periyar has been enriching the scenic beauty of the area. The existence of number of Islands such as, kadamkudy, Koromkotta, Moolamppally, Pizhala, Chenur and Thuruthy also add the charm of the area. All these factors worked positively in rating the area as a hot spot in the tourism map of Kochi. Large water logged area has been reclaimed to construct multistoried flats and its number is increasing year after year .Huge investment have been made exclusively in some islands to tap the tourist potential of the area. In addition, a host of small investors are also active in the area to cash in on the eco-tourism potentials. Its proximity to the proposed Vallarpadam Container Transshipment Terminal is also significant.

A comparatively a smaller value of land is existed in Elamkulam village during the study period .But it has shown a steadily increase from the base period to the end of the analysis. The value of land in Elamkulam village has increased five times from 1980 to 2005. The

annual growth rate of the value, as evident from the table does not keep any trend in all the villages. It is growing at different rates in the different sub-periods; evidently, during the 1996-2000 it has shown a negative growth but in the sub-period has grown at 6.5 rates. The figure 4.6 shows the movement of growth rate of the value of land; a high hike growth rate is visible in 1995 but afterwards it moved in downward direction.

Figure 4.9 Three-year Moving Averages of annual growth rates: Ernakulam Village

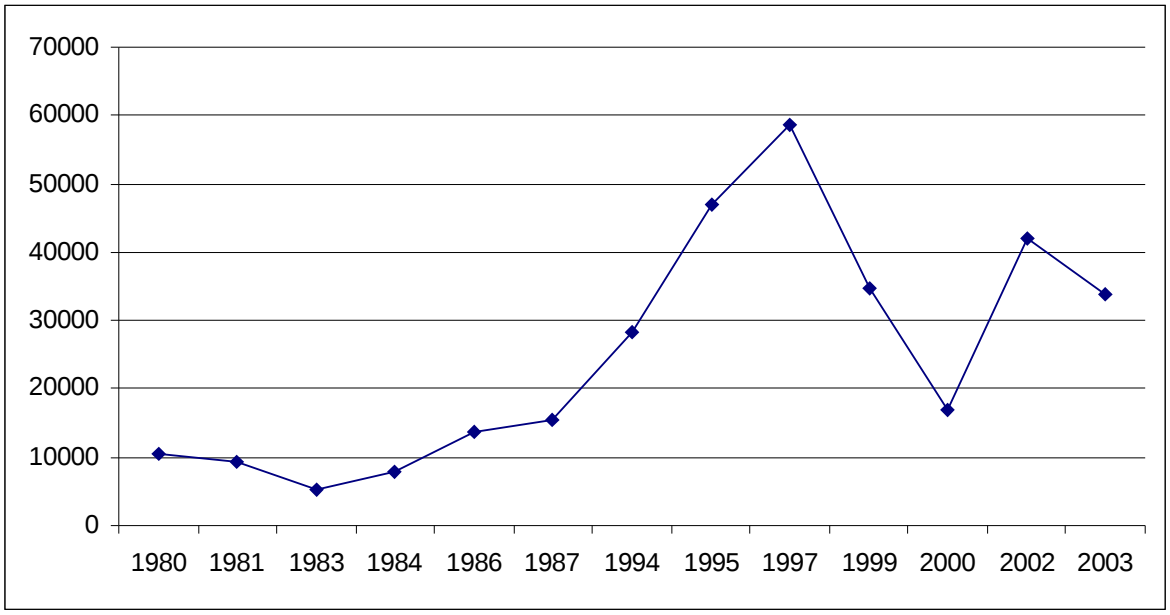
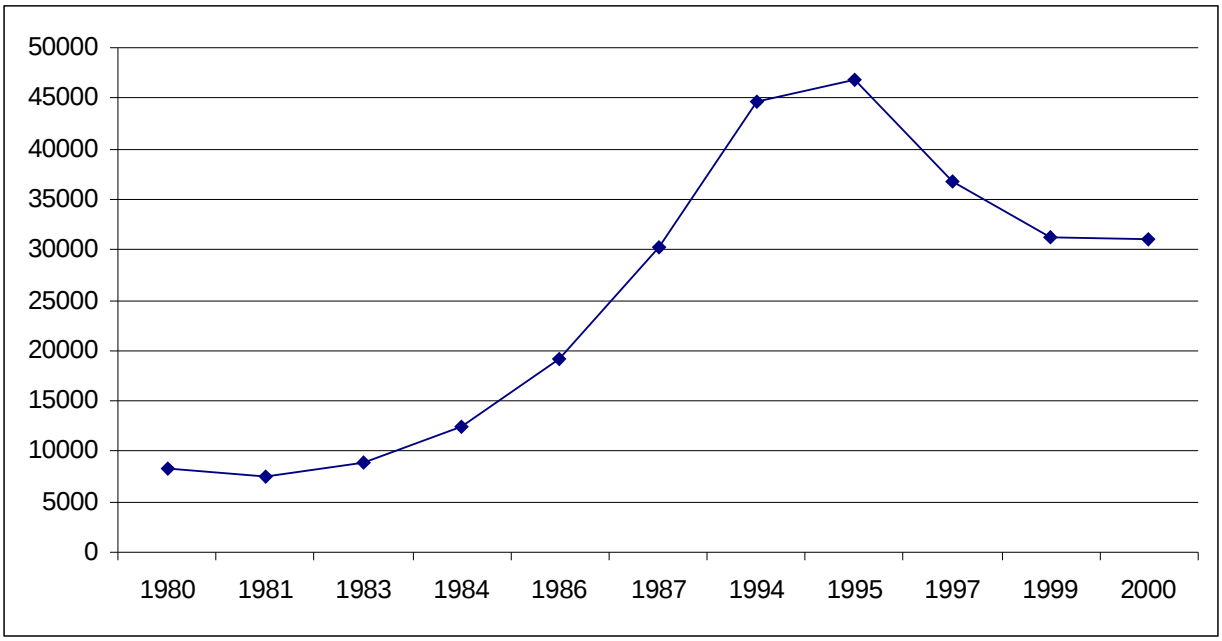


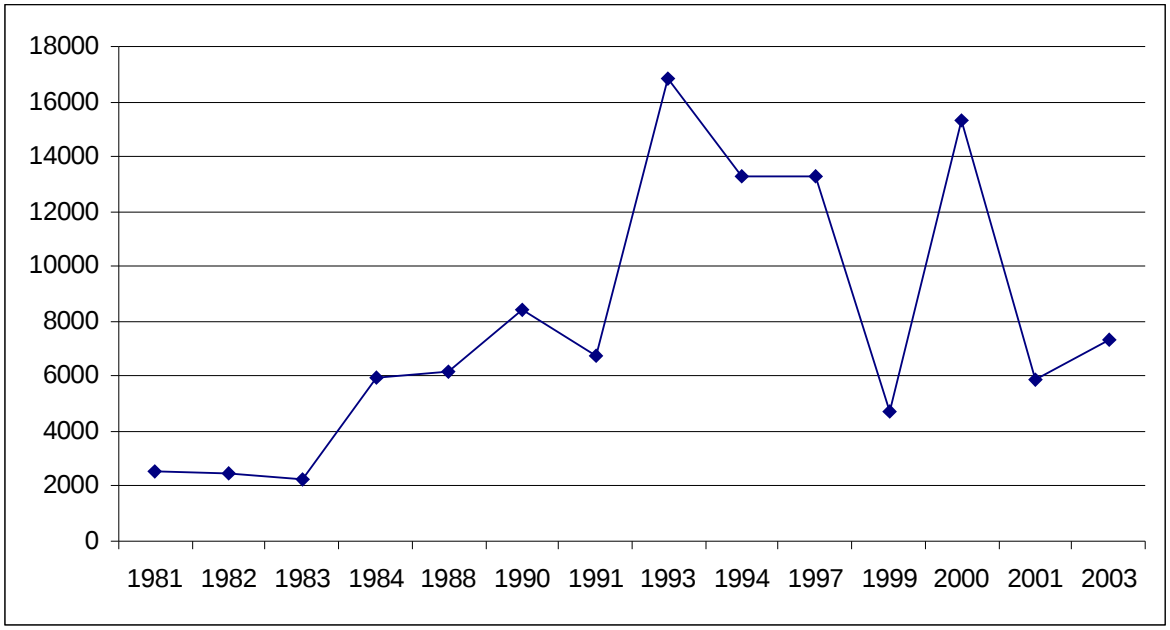
Figure 4.10 Three Yearly Moving Averages of Value Per Cent: Ernakulam Village



Source: Survey

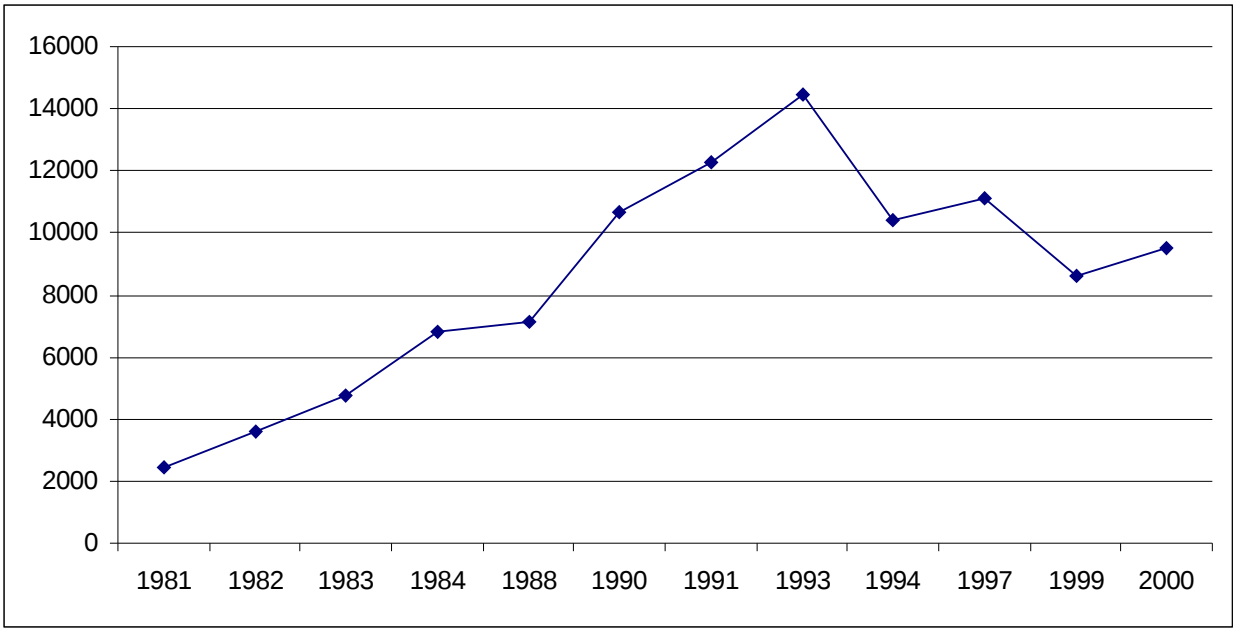
Elamkulam village growth rate of the value of land is very high during 1991 -95 sub-periods.

Figure 4.11 Average of annual growth rates of Value per cent: Elamkulam



Source: Survey

Figure 4.12 Three Yearly Moving Averages of Value Per Cent Elamkulam Village



Source: Survey

4.2.3.2 Edappally Region (C2)

Disaggregate level analysis also produces results similar to that of the aggregate level with respect to the trend in the values of C-2 region. The modest rate of value is existed in the initial sub-periods later it has turned into very high values in the two villages. A comparatively higher rate of growth is existed in the Edappally North evidently in Edappally South village, the over all rate of growth being 13.2, but in the North it is 15.67, Figure 4.11 and a steeper upward trend has shown since 1998 onwards. This hike in value is attributed to the factors that already explained at the aggregate level. Edappally south is near to the core of the city and a leading in commercial and business activity besides core of the city. Kaloor and Palarivattam of this village have been expanding to a center of business activities.

In Edappally North where the land value has an increasing trend registered and 20- times growth over the sub- periods. Due to the acute scarcity of land in the Edappally south and Core areas of Kochi the investors were forced to move to the outskirts or fringes of the city. Consequently more and more size of landed area has been brought into the land market. The construction of the Varappuzha and Paathalam Bridges has facilitated an easy access to City from northern Districts of Kerala. A wide net works of state high ways and municipal roads exist in region that connects the area with other parts of the city. As mentioned earlier, the land availability in the region is comparatively higher too. The proximity of the NH17 and the establishment of the Amirta institute of medical sciences have accelerated the flow of investments to this village. The large areas of fields have been reclaimed rapidly for the construction of the multistoried flats also affected the value of land in that village.

Table 4.5: Village wise Average Value Per cent of Edappally (C2)

Sub-Periods	South	North	C2
1980-85	1997	1699	1806
1986-90	5160	5642	5422
1991-95	8300	9635	8477
1996-00	15526	13036	14133
2001-05	30566	36125	35430
Overall Growth Rate	13.2*	15.67*	14.1*

Note: * coefficient is significant at 1% level

Table 4.6Average of annual growth rates (C2)

Sub-Periods	South	North
1980-85	40.3	68.5
1986-90	45.7	43.6
1991-95	14.7	24.2
1996-00	22.7	13.9
2001-05	17.8	52.5
Overall Growth Rate	13.2*	15.67*

Note: * coefficient is significant at 1% level

Source: Survey

The details of the average of the annual growth rates value per cent of the two sub-regions of Edappally region(C-) given in the table 4.6 shows that the annual growth rates are higher than the aggregate average in all sub-periods except of 1996-2000 to Edappally north village. High intra- variations of the growth rates are also highlighted by the table. High rate of growth is seen to be recorded by Edappally North village too.

4.2.3.3 Mattanchery Sub-Region (C3)

The analysis of different villages of the Mattanchery sub- region reveals that, there is a steady growth in the land value over the periods there. In the initial sub- period the value of land is

very modest in all the villages. In that respect they agree with the features of the aggregate level. All the villages have shown higher growth rates than aggregate level except of two (Mattanchery 7.9, Edakochi10.39) The overall growth rate of all villages shows that the highest rate of growth is seen in the village of Rameswaram 15.57) followed by Fort Kochi (15.49) and the lowest is cited in the Mattanchery village (7.9) The figure 4.15 clearly shows there is a steeper upward movement of the land value from 1997 till 2001. The explanation cited for the steeper growth in the aggregate level is applicable to these villages too. Rameswaram village the land availability is higher than other villages. The socio physical condition of the village is more conducive than other villages.

Table 4.7Average Value per cent across different villages of Mattanchery (C3)

Sub-Period	**1980-85**	**1986-90**	**1991-95**	**1996-00**	**2001-05**	**Overall Growth Rate**
Palluruthy	1600	3133	4315	7123	11690	12.26*
Mattanchery	7935	10992	17590	19155	31331	7.9*
Rameswaram	2664	5479	9499	18678	28024	15.57*
Thoppumpady	6472	11592	19063	24806	49368	13.37*
Edakochi	1981	5687	6395	13772	19915	10.39*
Fort Kochi	3425	7703	11132	25823	53164	15.49*
Total C3	3557	6376	9931	18288	35483	11.56*

Note: * coefficients are significant at 1% level

Source: Survey

Table 4.8 Average of annual growth rates (C3)

Year	Palluruthy	Mattanchery	Rameswaram	Thoppumpady	Edakochi	Fortkochi
1980-85	31.4	-11.0	75.1	Not Known	Not known	47.2
1986-90	39.8	19.2	12.3	20.8	27.5	23.1

1991-95	7.5	14.6	20.1	8.2	25.9	21.6
1996-00	21.6	10.0	19.8	11.2	17.9	15.3
2001-05	22.0	15.2	6.7	24.0	11.9	49.7
Overall Growth Rate	12.26*	7.9*	15.57*	13.37*	10.39*	15.49*

Note: * coefficients are significant at 1% level

Source: Survey

No trend is revealed in the average annual growth rates of value per cent of different villages of Mattanchery (see table 4.8).There are only two villages (Edakochi and Fortkochi) in the region that have the annual growth rates are higher than their over all growth rates in the all sub-periods. In the case of Mattanchery village a negative growth rate is obtained during 1980-85 sub-period. But in all other sub-periods, its annual growth rates are higher than the over all growth rates. Of all the villages the highest annual growth rate is attributed to Rameswaram during 1980-85.But the growth rates of 2001-05 sub-period is lower than the over all growth rates.

Part –V

4.3 Major determinants of the growth of land value

The aim of this part is to estimate the major determinants of growth of land value of in Kochi area. Value of land is a function of a set of interlocking factors one and hence to incorporate all the intricate factors involved in the determination of land value to the effect of availability of time series data. Value of land in a region generally is determined by the combined operation of the macro and micro level factors. They are the availability of infrastructural facilities, the functional characteristics of the region, the proximity of services, Income level

of the people, population pressure, interest rate, credit availabity, remittance, NDP, and contribution of income from the industrial and service sectors.

Before proceeding further, we will briefly present some of empirical studies in land value determination. A quick survey of the literature showed that there is hardly any attempt in this direction. But it is found that study carried out in the city of Bangalore (Ravindra1995) by using the linear trend of the following type:

$$\mathbf{V_t = a + b_t,}$$

Where $\mathbf{V_t}$ is land value for the year **t**

t varying from 1 to 10, and **a** and **b** are constants. The study simply looked into the trend of the value variation not discussed the major determinants. Another attempt was made in the state of Punjab (Singh1982) using the demand and supply models of following type.

Another attempt (Shi, Philipps and Colyer, 1997) was made and derived the value of agricultural land by using the following formula (Rit = market value of agricultural products sold + Govt. Payments + value of products consumed on farm where produced + other faming income – Total production expenses compensation to operator labor. The latter two studies are in the agricultural contexts and have low applicability in the urban space.

We selected some of the prominent factors among the host of factors exist on the basis of the availability of the time series data to estimate the determinants of the value of land. In the present context, two separate equations are used to examine the factors influencing the growth of urban land value in Kochi. In the present study there are more than one independent variable such as NDP, Remittance, Population pressure, Industrial Sector and service sector to estimate the growth of the value of land. The variables are highly relevant in the present

Kerala context too. The variables selected to explain the dependent variable are transformed in to log values except that of population pressure.

4.3 1. Net domestic product

The Net Domestic Product is considered as one of the important indices of measuring economic growth of region. The estimates of the income of a state have for long been accepted as an important indicator of the overall performance of its economy. These aggregates can be further broken down to obtain the sectoral estimates and their contributions to growth. While the estimates of state income covering a long period of time reveal the magnitude and direction of growth of a state, its sectoral composition of the different sectors in the economy(Mohanan Pillai and Shanta,2005). It is observed that the economies where the NDP is high there will be high value of land. The SDP of Kerala has shown a steady growth from the year 2000 onwards and some times it is higher than the National Averages. The growing trend in the NDP will normally reflect on the value of land in Kerala. During 2004-05 the contribution from primary secondary and the tertiary sectors to Net Domestic product at current price, the primary, secondary and tertiary sectors contribute 16.8%, 22.2% and 61% respectively (Govt. of Kerala 2005) The statistics on NDP is taken from the various issues of the Economic Reviews, State Planning Board, Government of Kerala, the year from 1980 to 2005.

4.3.2 Remittance

Kerala is an economy where the size of the educated people is very high which led to the migration of people to other countries and the major metros in India. It receives huge amounts of money from out side the country in the form of remittances. It is estimated that, remittance to Kerala have been growing faster than the domestic product of the state. In 1980-81 remittances formed 22 and 28 percent of the state's domestic product. (Govt of Kerala 2006) The inflow of remittance from abroad has made wide level impact on the Kerala economy. A number of studies have shown that the remittance received in Kerala is mainly invested in two sectors, say, in the purchase of land and construction of Houses in the earlier periods. But recently it has replaced with financial assets and on the real estate sectors (Gulati 1986). Interestingly, Kochi is developed as the most promising areas of investment in this direction. It is seen that huge amounts of remittance is flowed into the urban areas of Kochi from the different parts of Kerala in both these sectors. The impact of the remittance on the investment scenario cannot be confined in to a specific region only, which spreads through all over the Kerala since regional economies are open in different ways. So presumes that the flow of remittance in Kerala have strong factor in the growth of the land value in Kochi. We make use of the statistics on remittance received by Kerala economy in order to estimate the growth of the land value in Kochi.

4.3.3. Population pressure

Another important variable in the determination of the growth of the land value is the degree of urbanisation. The urbanisation process that visible in Kerala is city ward migration since large chunk of the population is concentrating on the Class-1 cities of Kerala. Kochi is one of the leading cities in Kerala and it turns to the status of a metro city in near future. This heavy

concentration of population on small area certainly produces wide level of implications on Kerala economy. The impact of the rapid growth of population is immediate reflected on land and the property market. We make use the pressure of population as proxy for urbanisation. The pressure population of region is measured through the percent of urban population to the total population. So in this study we try to use the statistics of degree of urban population of Ernakulam to estimate the impact urbanisation on the land value of Kochi. The percentage of urban population to the total population of Ernakulam district is taken for this purpose. The details of the same is taken from the Reports of the Census of India (2001)

4.3.4. Industrial Sector

The growth of the State Domestic Product is the resultant of the growth of the sub-sectors. In order to estimate the growth in the land value of Kochi urban areas we make use of the details of the district wise desegregation of SDP in industry origin from 1980 to 2005.The prominent sub-sector is the industrial sector the details of the performance of the sector is collected from the various issues of the Economic Reviews of the State Planning Board, Government of Kerala The analysis of the sectoral distribution of state income during the last three years it is seen that the contribution from primary sector is decreasing and that from tertiary sector is increasing .But secondary sector remains almost stagnant in Kerala But the district wise analysis of sectoral income shows that the highest contribution from the secondary sector during 2004-05 was in Ernakulam district(Rs3164.53 crores) followed by Thiruvanthapuram with (Rs 2235.44 crores) (Govt.of Kerala 2005).

4.3.5 Service sector

Another sub-sector, which contributes huge amount of money to the SDP, is the service sector. In Kerala, the service sector is more prominent one than in any other sub-sectors

because it s total contribution to the states treasury has increased drastically. The tertiary sector has maintained growth rates consistently higher than the SDP throughout the three decades and higher than the other sectors, implying the significance of this sector in the economy as the main propeller of economic growth. Regarding the tertiary sector the highest income during 2004-05 was in Ernakulam district (Rs6756.73 crores) followed by Thiruvanthapuram (Rs 6497.6 crores) We make use of the details of the district wise desegregation of SDP in industry origin from 1980 to 2005 in order to estimate the growth in the land value of Kochi urban areas with respect to service sector growth.

Model -1

$$\textbf{Land Value} = \alpha + \beta_1 (\textbf{NDP}) + \beta_2 (\textbf{Rem}) + \beta_3 (\textbf{Pop}) + U$$

Where α is the intercept, β_1, β_2 and β_3 are respective coefficients; and U is the random error term. **NDP** stands for the Net Domestic Product; **Rem** for the Remittance received by the state and **Pop** represents the population pressure.

Model-2

$$\textbf{Land Value} = \alpha + \beta_1 (\textbf{Ind}) + \beta_2 (\textbf{Ser}) + \beta_3 (\textbf{Rem}) + \beta_4 (\textbf{Pop}) + U$$

Where α is the intercept, β_1, β_2 and β_3 are respective coefficients; and U is the random error term**. Ind** stands for contribution of industrial sector to NDP whereas the term **Ser** for the service sector.

4.4 **Results**

The result of the models-1 is given in the table 4.9. It reveals that the explanatory variables population pressure and remittances show no relationship with value per cent over the period of analysis.

Table.4.9: Multiple regression model-1

Variables	Coefficients	t-value	$R^2 = 0.99$
NDP	0.99*	3.90	
Remittance	-0.17	-1.01	DW = 2.4
Urbanization	-0.02	-1.67	

Note: * = coefficient is significant at 1% level

It also exposes that NDP is the only variable which is found to be significantly related to the change in land value.

Table 4.10: Multiple regression model -2

Variables	Coefficients	t-value	$R^2 = 0.99$
Industry	0.63*	4.69	
Services	0.36*	3.23	DW = 1.9
Remittance	-0.14	-1.59	
Urbanization	-0.03**	-2.34	

Note: *, ** = coefficients are significant at 1% and 5% levels respectively

The results of the equation-2 are shown in the table 4.10. It shows that there is positive and significant relationship between the industrial and service sectors on the land value over the period. In this model too we found that remittance has no influence on the land value in the study area. The availability of land is deteriorating steadily as the pressure of population increases as a result the economic activities generally be move vertically. Under these

situations the growth of population may not reflected on the value of land but on the allied properties of land. In determining land value the population pressure is taken as proxy for urbanisation, being it is a complex phenomenon measuring its impact on the basis of a single component may not reflect the reality in the level playing field. A major chunk of the growing population prefers to settle in the outskirts of Kochi and they are not active players in the market.

4.5 Conclusion

An analysis of the land value in different region of Kochi city reveals the following. On the three region of Kochi highest overall rate of growth in the land value is obtained in extension of the core (C2) regions. And next highest values are received to C3 region in the beginning of sub periods the average value per cent of core (C1) region is seen very high up to 1991-95. But from the next sub- period onwards the other region are ahead of C1 region. High deviations are seen in the average value per cent in these regions. The C2 regions are primarily residential in characteristics but changing into an area of mixed land use. More specifically, in Edappally south the land is more used for commercial purposes and multistoried flats are also increasing. There was a residential shift to this region the years ago from 1990 onwards.

In the Edappally North, the waterlogged areas are converted into multistoried flats and other service centered activities by wide level of reclamation. These two villages are changing into well-developed residential areas with amenities and retails shopping facilities.

The low growth in the average value percent in the C1 region (especially in of 1996 on wards) is because of the heavy congestion of commercial services and administrative services. As the core of the city gets congested it normally tends to extend to the adjacent and peripheral area

of the city. Consequent on the expansion of the activities into the extension and peripheral areas of the city, a high land value is manifested in these regions. Another consequence of the physical expansion is a more intensive use of the land in the core and extrusion of the core is evident in the growth of the high-rise buildings both for commercial and residential purposes.

The low price in the peripheral region during the initial periods and availability of higher land area promoted speculative activities. Real estate speculators purchase land in anticipation of rise in land value. They have held the land and divide into small fragments and sell them for higher profits.

The estimation of the major determinants of growth of the land value shows that the explanatory variables urbanisation and remittances show no relationship with value per cent over the period of analysis. It also exposes that NDP is the only variable which is found to be related to the change in land value. There is positive and significant relationship between the NDP and land value

It is shows that there is positive and significant relationship between the industry sectors, service sectors on the land value over the period. In this model too we found that remittance has no influence on the land value in the study area.

CHAPTER V

SUMMARY AND MAJOR FINDINGS

This chapter presents summary of the findings of the study and the major conclusions that emerge from it. The urbanization experienced in Kerala is different from other parts of the country and the world. Urbanization generally germinated in the womb of industrial sector developments in the economy. But in Kerala context the productive sectors are weak and saturated and not able to supply sizable amount of income to the state's coffers. The vacuum space is occupied by the service sectors. The inertia of low economic growth in Kerala economy is broken by the active role of the service sectors. Interestingly, the service sector activities are centered on the urban areas of Kerala. Kochi is the most leading urban center of Kerala and able to receive the lion's share of the investments of Kerala. The latest statistics reveals that one of the promising sub-sectors of the service sector is the real estate sector. Real estate is the sector in which the land and allied properties are made available to the smooth functioning of the developmental activities. The distribution of the right to appropriate the real properties is done through the institution of land market. There is a strong nexus built between urbanization and the operation of the land market. It instantaneously responds to the slight changes in urbanisation process. So the present study is relevant and fruit bearing to reveal the inner linkage between urban growth process and land market in Kerala.

MAJOR FINDINGS

TREND OF URBAN POPULATION IN INDIA

- It is found that there is a steady growth in the percentage of Urban population in India from 1901 (2.4) till 2001 (26.7)

- The decadal growth rate of urban population in India shows an increasing trend up to 1981 but a declining trend is visible from 1981 to 2001.
- The National head quarters and Union Territories are leading with high degree of urbanization, Delhi (93.9%), followed by Chandigarh (89.8%) and Pondicherry (60.6%)
- It is found that the state and UT's having high urban population lie in the coastal belts and geographically smaller in size evidently Delhi, Pondicherry, Andaman Nicobar Islands Dadra & Nagarhaveli
- The geographically smaller Southern States are leading in the urban population than the larger Northern State. The state of Tamil Nadu leading in South India with 44% of urban population.
- The percentage of urban population has shown a steady increase in Kerala since 1901.
- The decadal growth rate in urban population in Kerala has been leaps and bounds for the entire period. A sudden jump is shown in the period between 1941 and 1951 (52.72). A phenomenal growth is seen in 1991 (60.97).
- There is a steady increase in the number of Towns in Kerala from 21 1901 to 197 in 1991. But there is a fall in 2001 to 159 due to the declassification of Towns.
- The size class wise analysis of percentage of urban population in 2001 reveals that highest in Class-1 (68.82) towns followed by Class-III towns than in Class-II towns.
- The study gives the intensity of urbanization in terms of area and urban population is the highest in low land followed by midland and then high land. However the concentration of urban population is high in midland regions.

- There is a growth in the use of land for non agricultural purposes over the years.

The Inter-district Analysis

- The remote agriculture surplus producing high lands of Kerala are exhibiting very low number of urban population. The districts with larger in geographical size are conceiving small number of urban population. There are 5 districts in Kerala having urban population higher than state average .The highest share of urban population is claimed to the district of Kannur (50 percent) followed by Ernakulam (48 percent). The state capital has accommodated only 34 percent of the total population in its urban areas.

- The notable thing in the analysis is that, all the high urbanite districts of Kerala are grown up in the western coast of Kerala. They were some of the renowned trading centers in the past. The districts of large in size in Kerala are bearing low amounts of urban population, evidently Palakkad (14 percent), Idukki (5 percent) and Wayanad (4 percent).

- The population of Ernakulam District also shows a steady growth. The percent of urban population increases steadily from 1901 onwards and reached 48.74 percent in 1991 census period. But a slight decline in the rate has shown during 2001(from 48.74 to 47.56 percent).

- The growth rate of urban population was highest (60.90 percent) during 1981-1991and the lowest (7.64) during 1991-2001. In Ernakulam district also the growth rate of urban population is showing an increasing trend in all the periods between 1971-2001 .It was the highest in 1981-91 periods.

- The urban population of the districts is increasing continuously from 1971 (63.60 lakhs) onwards and it is seen as 147.70 lakhs in 2001.

- In 1981 census the urban area of the district was 377.60 Sq.km and it has increased to 544.21. But in 2001 the area has changed in to 2950 Sq.km.

LAND TRANSACTIONS

Core (C-1) Region

- The analysis of the C-I region shows 35% of the total transaction is occurred in the three to six cents of plots followed by 29% of transaction in less than three cent.
- Within C-I region a slight variation is observed in the size of transaction between the outer and inner core areas. The size of the most sought plots in the inner core areas is less than three cents. But in the outer core area it is the 3 to 6 cents.

Extension of the core (C-2) region

- Similar to that for C1 region, about 35.4% of the total transaction are taken place in three to six cents in C2 region too. This is followed by a 22.96 percent of transaction for less than three cents.
- In the Extended core area all the villages are in tune with the aggregate level. The preferable size- group of plots in transactions is 3-6 cents in the both two villages.

Peripheral Region (C-3) Region

- But unlike the C1 and C2 regions, a major proportion of transaction (about 34%) is occurred in less than three cents in C3 region. It is followed by 30% of three to six cents. It is also shown that a very low share is occupied by more than 25 cents.
- The analysis reveals that no significant changes between the aggregate and the disaggregate level.

Sub -period Analysis

- Over the sub- periods - from 1980 - 1985 to 2000 – 2005, the preference towards the size of plots in transaction keep on changing.

Core (C-1) Region

- The total number and size of plots transacted has been increasing over the period from 1980-85 to 2000-05. While the total number of plots transacted changes from 285 in the first sub-period to 356 in the last sub-period, the total size of land transacted increases from 2020 cents in 1980-85 to about 4808 cents in 2000-05. This is a clear corroboration of the demand for land increases as the tempo of urbanization increases.
- For the aggregate level and at village level the highest demand has been observed in 3 to 6 cents of land over the period.

Extension of core (C-2) Region

- Similar to that of C1 region, the most transacted size of plots in C2 is 3 to 6 cents for all the sub- periods.
- The total numbers of plots entered in to the market in different sub- periods increase continuously over the sub- periods except of 1991-1995.
- This finding is more or less similar in all the villages of C2 region.

Peripheral (C-3) Region

- The transactions in the (C-3) region over different sub-periods reveals that the most demanded size of plots in the aggregate of all the sub-periods are less than three cents.

- Over the period, the demand for smaller pieces of land increases from about 40% to 53%; the increase being highest in Mattanchery village.
- All the villages within C3 region shows similar pattern.

The Magnitude and Nature of Land Transaction

C1 region

- A large number of plots came into the market only once. Out of a total of 1108 that came into the market, 84.3 % was transacted only once followed by11.8 % twice.
- The plots which repeating for once whose average size is comparatively low. But the plot that transacted for higher times their average size is very high. It may imply that the large bunch of plot is either used for housing or making it as a source of livelihood. Since C1 is urban core area, the prominent share of the land might be used to cater the needs of commerce and administrative purposes rather than residential.
- It is only a few plots are put in the land market for real estate or speculative purposes. This feature of land market is evident fro the fact that the smaller plots are not seen repeating transaction for many times. The lowest size of plot transacted in this region is nine cents and the highest is 1818 cents
- A remarkable feature of the nature of land transaction in C-1 region is that the average size of plot in each transaction increases with the number of transactions. That is plots larger in size are transacted more than the smaller ones. It can also be noted that the number of transactions increases in accordance with the increase in the average size of transactions.

- The nature and magnitude of land transaction in the two villages of C1 region show a similar pattern.

C2 region

- There is only a microscopic section of the transaction belong to larger frequency. In the case of nature of transaction the large sized plots are transacting more in number in the land market.
- It shows that of the total number of plots made available in the aggregate level 87.58% of the transactions belong to the one-time category.

C3 region

- The study shows that lion's share (91.4%) of the plots is transacted only a few times during the period.
- Plots transacted less than nine times are 7.0% whereas those transacted more than 24 times come to only 0.1% of the samples.
- The average size and frequency of transactions are positively related as that of the core area. When the frequency of transactions is one to four, the average size of the plot is seven cents. When the frequency moves to the nine-to-twelve-class, then the average size of transaction also moves to 22cents. This trend is continued till frequency reaches the maximum of 20 to 24. The frequency of transaction goes up to more than 24 times when the average size is a maximum of 104 cents.
- The disaggregate evidence at village levels is found to be more or less similar to the aggregate level.

LAND VALUE

AGGREGATE LEVEL

- The study reveals that there is an inter-temporal variation in the value of land in all the regions of Kochi
- From 1980 to 2005 the value of land increases at 9.8 percentages per annum.
- Sub-period wise analysis shows that the rate of growth value percent increases from 6.5 percent during 1980-85 to about 33% during 2000-05.
- C1 region is observed as registering smaller rate of growth in land value over the period of analysis when compared to the C2 and C3 regions.

LAND VALUE IN DIFFERENT REGIONS OF KOCHI

- The three region of Kochi (C1 C2, C3) follows the same trend with that of the aggregate level. But some individual variations are seen in the rate of growth.
- The land price in three regions increased at a rate of 6.21, 14.1 and 11.56 percent for C1, C2 and C3 respectively.
- The land value in the core area (C1) seemingly was very high (Rs 5536) during 1980-1985, 1986-90(7014) and 1991-95 (12937) comparing the other areas. But 1996 onwards both C2 and C3 are occupying high land values. The inter-temporal variation in the land value is justifying the third hypothesis
- The high land value during the last two sub-periods may be due to the operation of the following factors (a) the impact of new economic policy on land market (b) The impact of the financial sector reforms (c) the consequence of the shift in the investment behavior in

Kerala (d) Absence of the Governmental interventions (e) the influence of the black money and (f) The abolition of the Land Ceiling Act

LAND VALUE AT DISAGGREGATE LEVEL

Core (C1)

- In all the sub-regions of the core, the overall growth rates are 15.2 and 9.9, which are higher than the aggregate growth rate of 6.21. The overall rate of growth of the Cheranellur Village is phenomenal (22.5%). A 13 times growth in land value is in the Cheranellur village over the period.
- It is 5 times growth in Ernakulam region.
- In Ernakulam and Elamkulam villages, the land value is increasing up to 1991-95 but in 1996-00 it has declined and again increased during the next sub-period.
- The average of annual growth rate shows a different pattern during different sub-periods. During the 1996-2000 it has a negative growth but 2001-05 land value grows at 6.5 rates.
- The growth of land value is seemingly very high during 1991 -1995 in Elamkulam village.

Land Value in the Sub-region (C2)

- In Edappally south village, the over all growth rate of land value is 13.2 percent and north it is 15.7 percent. The growth of Edappally North is showing a higher rate than the aggregate growth rate of 14.1
- The average annual growth rates of the villages of the C2 region are very high except for Edappally north during 1996-00 (13.9).

Land Value in the Sub-region (C3)

- There is a steady growth in the land value over the periods. In the initial sub-period, the value of land is so modest in all the villages. All the villages have shown higher growth rates than aggregate level expect for two villages (Mattanchery 7.9, and Edakochi 10.39)
- The overall growth rate of all villages shows that the highest rate of growth is shown in the village of Rameswaram (15.57) followed by Fort Kochi (15.49) the lowest rate of growth is seen in the Mattanchery village (7.9).

The Major Determinants of the Growth of Land Value in Kochi

- The explanatory variables urbanisation and remittances show no relationship with value per cent over the period of analysis.
- The NDP is the only variable which found to be related to the change in land value.
- There is positive and significant relationship between the NDP and land value
- There is positive and significant relationship between the industry sectors, service sectors on the land value over the period.
- In the second model too, we found that remittance has no influence on the land value in the study area.

Conclusion

There are a lot of studies have been conducted separately on urbanisation and land related issues in Kerala. But no study was carried out on the impact of urbanisation and the working of the market in Kochi regions .So humble attempt is made through this study to plug this gap. The study exposes that there is growth in the urbanization remarkably evident in the growth of

population and towns in Kerala in tune with the pattern observed for all India. The study argues that the trend in land value could be linked to pattern of urbanization in Kerala. Moreover, the dynamics of land transaction and the trend in land value are different across the different region within the Kochi city. The study also found that of the four variables of the factors of the growth in the land value the SDP and industry and service sector positively related with it.

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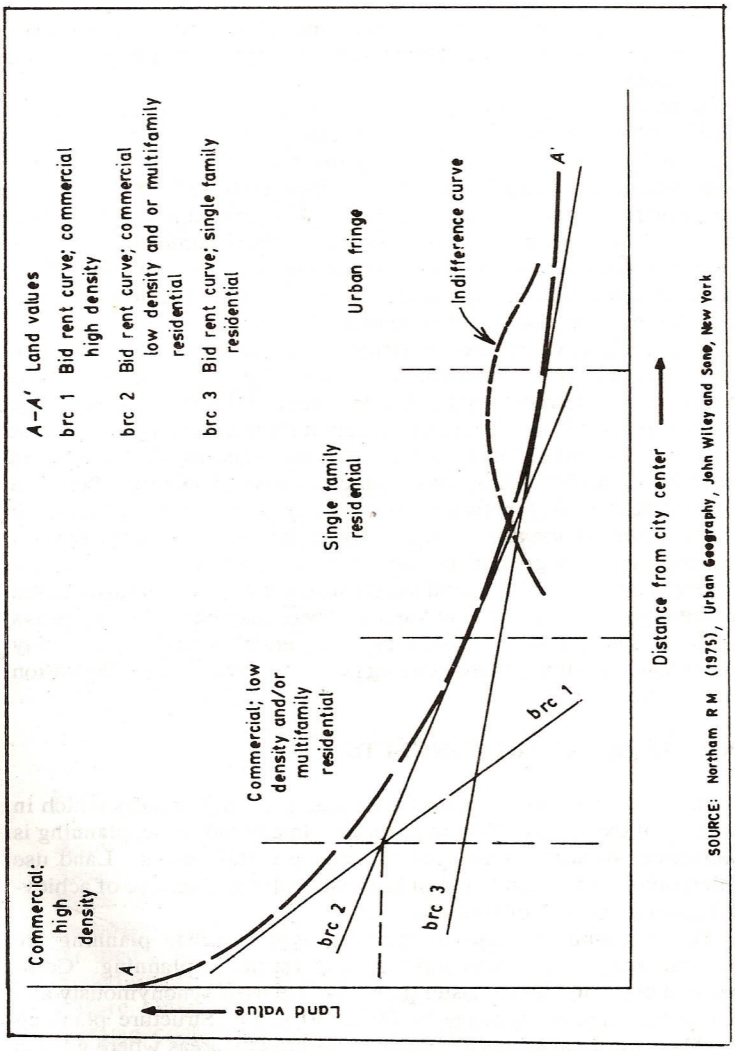
APPENDIX-1

DIAGRAM OF LAND VALUE

Urban land value



APPENDIX – II

DISCUSSION ON URBANISATION

Urbanization, human settlement and economic development have a close association. These are multidisciplinary problem playing many factors with diverse interest and view points, requires having comprehensive development approach for solution. Urban areas act as engine for growth in terms of production and market/service and have wider level of impact to the over all economic development of a area.

Urbanization is the process in which the member of people living in cities increases compared with the number of people living in rural areas. Being a complex phenomenon,there is no universally accepted definition for the term urbanization. To quote Ashis Bose urbanization in the demographic sense is an increase in the proportion of the urban population to the total population over a period of one year. It is a defined and the process by which the proportion of total population concentrated in urban settlements.

“Urbanization is a Socio economic outcome of the process of economic development and industrial growth. It represents the spatial dimension of the process of economic development where the factors of production manufacturing units and locations becomes increasingly specialized’’ It represents the movements of population at town and cities or increase in the proportion of population engaged in secondary and tertiary sectors of the economy and corresponding change in the behavioral pattern. It also refers to the spatial shift of population from rural to urban settlements. Urbanization involves.

(1) Concentration of population at densely populated cities than associated rural areas.

(2) Population shift from rural to urban areas.

(3) Occupational shift from agricultural to non-agricultural areas i .e, more than 75 percent of male population engage in non – agricultural activities.

(4) Land we shift from agricultural to non-agricultural areas.

Urbanization is mainly because there reasons.

(1) Natural growth

(2) Net migrated and

(3) Changes in the urban areas of jurisdiction.

DEFINITION OF CITY

There is no standard international definition of city. The term may be used either for a town possessing city status; for an urban locality exceeding an arbitrary population size, for a town dominating other towns with particulars regional economic or administrative significance.

The city can be described as the most human environment, for the city more than any other eco system having the distinguished human hand. City in many ways an artificial environment – a man made and controlled setting. In the modern world almost everyone has some knowledge of the city. After all, our lives are in a way shaped by the decisions made in such places. The city and the rural area differ from many ways, however, what

them differ. Either social scientists or Governmental bodies agree on clear and precise definition of a city area.

Marx weber in Die Stadt suggests that the cityis place"…..Where the local inhabitants satisfy an economically substantial part of their daily wants in the local market, and to an essential extent by products which the local population and that of the immediate hinter land produced for sale in the market or acquired in other way"[4] For weber , the city is a permanent market place with a specialized class of traders.

Mumford, on the other hand, emphasizes the contextual qualities of the city. The city is a physical thing," a permanent container and institutional structure, cabable of storing and handing on the contents of civilization" Early cities are identifiable by the walled enclosure, the street, the house block, the market the temple percinet with its inner courts, the administrative precinet, the workshop percinet…."

Perhaps the most common definition, however, centres on the demographic qualities, or population characteristics, of the community. Wirth defines the city as a relatively large, dense and permanent settlement of socially heterogeneous individual

Similarly, Sjoberg sees it as a community of large size and population density that contains a variety of nonagricultural specialists, including a literate elite.

DEFINING URBAN : REGIONAL DIMENSIONS

The question of what is urban and what is Rural invoke the attention of the researchers on urbanization all over the world. The census definition around the world draws a clear demarcation time between rural and urban places. The definitions adopted are diverse based on one or more factors like administrative status, population size and density,

occupational patters and land use and other characteristics connected with towns and cities. There is no uniform criteria used by different countries in defining a city or town, it varies from country to country and from census year to year. Some countries define the term urban by referring to specific towns and cities. In Egypt urban areas are defined as Governates of Cairo, Alexandira, Port said, Ismalia and suez' Ismalia and suez' combined with the administrative criteria of frontier Government and capitals of other governates as well as district capital.

Common criteria used in Denmark and Sweden, as the population with as low a limit as 200 inhabitants but in Albanis town and industrial centres having more than 400 inhabitants. In south Africa all areas of 500 or more in habitants are treated as urban and even lesser places having urban characteristics and only about 100 whitis places term to be 'urban' if they have a population of 1000 in Canada, Venezuela, Australia and Newzeland, 1500 in Columbia and Ireland, 2000 in Kenya, Liberia Cuba and France 2500 in Mexico and USA and 5000 in Ghana, Korea, Austria, Pakistan and Iran. In Japan a city should have population of at least 30000 with 60 percent of hours located in main built up areas and 60 percent of the population in urban areas and 60 percent of the population in urban type of business. Smaller places can be treated as 'urban' if they have urban amenities and conditions.

In Israel Population limit of 2000 is subject to the condition that not more than one third of the civilian labour force earn their living from agriculture. In Yugosalvia, all places having population of 15000 or more being treated as urban and places in the range 5000 to 14,999 are treated as urban if 30 percent are not engaged in Agriculture; 3000 to 4999 of 70 percent have non agricultural occupation and down to 2000 if 80 percent are non-

agricultural in Netherlands all municipalities with 2000 or more inhabitants are classified as urban and those with less than 2000 as semi-urban provided not more than 20 percent of their economically active male population is engaged in agricultural. Zaire has the limit of 2000 inhabitants with predominantly non-agricultural occupations.

In Philipines, there is a specific definition on urban area. Cities and municipalities having 1000 or more inhabitants are considered as urban area an having densities of about 500 to 1000 per square kilometer, which can be disregarded if the central districts have such characteristics an "network of streets six or more commercial or recreational establishments and some amenities of a city e.g. town hall, Church, Public plaza, market place, school, hospital etc."

In Greenland, for example, a place with 300 or more inhabitants is called an urban area while in the Republic of Korea, an urban area must have at least 40,000 inhabitants. Even in the same country, there is frequent modification of the definition of urban which requires for the multitude of adjustments to have comparability over time.

DEFINING 'URBAN' IN THE INDIAN SCENARIO

In Indian situation, we find that the census definition of 'town' become more or less same for the period 1901-51 and it is only in the year 1961 that many modification were introduced to make the definition more compact. On perusal of the Indian census experience it is found that, more discretional powers enjoyed by the census superintendents in the classification of places in demarcating as rural and urban. The urban population of a country includes the total population of its town. Though the definition of town in Indian census remained the same all over the decades 1901-51, due

the inherent weakness in the definition, uniformity was not always maintained in its application.

Mentioning the problem of definition of 'town', the 1901 census commissioner pointed out. Many of the places which have thus been treated as town are in reality nothing more than over- grown villages, but it would have been impossible to frame any definition, with the object of excluding such places, without destroying all prospects of uniformity in its application in different parts of India, and even in different parts of the same province. Most, if not all, Indian municipal enactments contain a provision that a certain proportion of the inhabitation of any area which it may be proposed to bring under their operation must earn a livelihood by non-agricultural occupations, and it was clearly better to take the circumstances that this condition has been found to exist as the main test of what constitutes a town, rather than to attempt to introduce a new standard that could not be applied correctly without for more elaborate enquiries than it would have been possible to carry out…..it must therefore, be borne in mind that the classification (between town and village) is only a rough one and that in all cases, the true urban population is considerably below that indicated by the proportions calculated on the results of the census.

To quote from the general report of the census of India, 1901, uses the criteria as Town includes.

(1) Every municipality of whatever size.

(2) All civil line not included within municipal limits.

(3) Every other continuous collection of houses, permanently inhabited by not less than 5000 persons, which the provincial superintendent may decade to treat as town for census purposes.

Thus the primary concern before the census superintendent for deciding whether a place is town or not is the administrative setup not the size of its population. Not all municipalities, civil lines areas and cantonments have a population of over 5000 and yet these were classified as towns while, all places with a population of 5000 and over need not be treated as towns. The Census superintendent had the discretion to consider the over grown village with population of over 5000 as towns. The census superintendent also had the discretion to treat as a 'town' any place, irrespective of its administrative set up or population size, for 'special reasons'.

The definition of 'town' was not fully objective as much as it was not based on many statistical tests. The definition of town adopted in the 1951 census was similar to that of 1941 census.

A town is normally an inhabitant locality with the local population of not less than 5000 persons. But places with somewhat larger population which do not posses definite urban character may not be treated as towns. At the same time, places with similar population with definite urban character (including generally all municipalities and cantonments and other places having a local administration of their own) may be treated as separate towns. The decision, in marginal cases, rests with state Governments in some states and census superintends in others.

It is better to look into the standards used by a few census superintendents in deciding the urban population in the 1951 census.

In West Bengal, a place was called a town if it possessed following requirements.

(1) a population of not less than 1000 inhabitants to the square mile.

(2) Importance of the place as a centre for trade or distribution or administration.

(3) the employment of at least 75 per cent of the adult make in non-agricultural purists.

The conditions were not so signed in Madras on this state, in 1951, there were 75 towns where the agricultural population was more than the non-agricultural population exceeded the non agricultural

THE 1961 CENSUS DEFINITION

The definition of 'town' used in the 1961 census was somewhat scientific than the earlier censuses and this new approach was followed allover India as uniformity.Even the 1961 census definition was not fully in absence of ambiguity. To quote the 1961 census commissioner.For the first time in 1951 all census statistics were presented separately for rural and urban areas. This has been continued in 1961 as a basic stratification as fundamental as the presentation of all statistics separately for males and females….The Completion of two five year plans together with such regions an the merger of primate states and the reorganization of states seemed to demand a more rigid application of the tests for urbanization and the working out of a list of urban areas in 1961 that would form a series for the future. It should be remembered, however that, in every decade the census Commissioner has tried to apply uniform eligibility tests throughout the country but the diversity of condition prevailing in provinces and princely states has defeated their realization to a certain extend even in 1961. To quality an urban area, a place should first be either a municipal corporation or a municipal area, or under a town committee or a notified area committee or cantonment board. On the absence of a central municipal law

these have always meant different things at different place. So that a municipal town or town committee in state had different standards from what obtained in state B, thus eluding comparability on all fours. In the second place, each census has adopted a number of census towns, which do not enjoy any statutory label of administration. This has been considered desirable in order to obtain a true measure of urbanization as it is usual for an administrative label to fall some way behind actual achievement. These census towns were in 1961 determined on the basis of a number of empirical tests.

(a) a density of not less than 1,000 per square mile

(b) a population of 5000

(c) three-fourth of the occupation of the working population should be outside of agriculture and

(d) The place should have, according to the superintendents of the state.

A few pronounced urban characteristics and amentias the definition of which, although leaving room for vagueness and discretion, yet meant to cover newly – founded industrial areas, large housing settlements, or place of tourists importance which have been recently served with all civic amenities. Naturally enough, such a course also implied the elimination of a four number of places which had passed muster for towns in the past and the emergence of number of new places as town in 1961 census list of towns. All cases of fresh inclusion were required to the Registrar General office, with fall and sufficient reasons supplying the proposal to treat a place as town, and the concurrence of that office had to be obtained.

URBAN AGGLOMERATION

The concept of urban Agglomeration (UA) adopted for 1971 census continued for the 1981 census. Very often large railway colonies, university campus, port areas, military campus etc. come up outside the statutory limits of the city or town but adjoining it. Such

area may not be themselves qualify to be treated as towns but if they formed a continuous spread with the adjoining town, it would only be realistic to treat them as urban, Such settlement have been termed as out growth (OG) and may cover a whole village or part of a village. Two or more towns may also be contagious to each other. Such towns together with their outgrowths have been as one urban unit and called urban Agglomeration. An urban agglomeration, therefore, constitutes.

A. City or town with contagious outgrowth the out growth being outside the statutory limits but falling within the boundaries of the adjoining village or villages or

B. Two or more adjoining towns with their outgrowth (s) or.

C. A city with one or more adjoin towns with their outgrowth all of which form a continuous spread.

MILLION CITIES OF INDIA

The term million cities was coined by Mirsa (1978) to refer thos urban centres having a population of one million or more. In his recent work, however, Mirsa (1988) has used the term metropolitan agglomerations. Bose (1993) used the term M' cities in his critique of urbanization in India. The term million city here we use an urban centers or agglomerations with over one million population reported in Indian census.

In the rise of twentieth century these was only one million city-Calcutta with a population of 1,488,323. Greater Mumbai, itself not older than Calcutta, joined the list in 1911. After Independence, the number of million cities has grown at tremendous pace but during the last two decades this number multiplied manifolds.

As per the 2001 census, there are a total of 35 million cities in India. The million cities occupy a special place in Indian urbanization (Dikshirt 1977)*. It has been suggested that they absorb the largest member of rural migrants (Gugher 1996)* and are more connected

to the economic trends and powers in the advanced capitalist world than with their own local hinter lands, thus accentuating their internal parasite role and external dependent relation (Hosetitz 1953: MC Gee 1972 Smith 1985; Mutlu 1989)

The census of India has traditionally divided the urban centers of India into six classes of the Urban centers, the million cities have attracted and absorbed a progressively greater share of the country's urban population: collectively housing over 107.88 million people, that is, more than one third (37.81 per cent) of the total urban population of India. This is a significant increase from 70.66 million people and 32.5 per cent respectively in 1991 census.

It is observed that Calcutta continued to remain the largest million cities India till the 1981 census. It was replaced by Greater Mumbai in 1991 when the latter toped the list with a population of over 12.5 million. In 2001 greater Mumbai (16.37 million) retained its first position showing an increase gap in population size and growth rate with Kolkata (13.22 million) Bangalore, Hyderabad and Ahmedabad have more than 4 million people. Pune just Crossed the 3 million mark while Surat, Kanpur, Jaipur, Lucknow and Nagpur have achieved a population size 2 million. All the remaining cities (22 in total) have over one million populations each.

MEGA – CITIES OF INDIA

The term Mega – City was coined by the Ministry of Urban Affairs and employment and planning commission following the recommendation of the National Commission on Urbanization in the year 1988.

The 2001 Census of India's population at 285.35 million, which is about 27.78 percent of the total population of the county. This is an increase from 217.2 million (about 26 percent) in 1991. The number of million cities jumped from only 23 to 35 during the decade 1991-2001 of the 35 million cities 6 are considered mega cities with population of over 5 million. These are greater Mumbai (16.36 million) Kolkata (13.21 million) Delhi (12.79 million) Chennai (6.42 million) Bangalore (5.68 million) and Hyderabad (5.35 million)

The mega – cities emerged as centers of industry, trade and commerce. Political, educational and other activities in the late eighteenth and nineteenth centuries (Habeeb – Kidwai 1993). Their influence not only extends over the surrounding areas but also spreads beyond state/national boundaries and has avide ranging impact over the national, political, and economic and socio cultural mi…. They are predicted to emerge as super conuburations by the year 200 AD. (Dutd 1993).

URBAN DEFINITION IN KERALA

1941 Census – Travancore

(1) Every municipality

(2) All civil line not included within municipal limits.

(3) Every cantonment and

(4) Every other continues collection of housed inhabited by not less than 5,000 posses which the provincial superintendent may decide to treat as a town for census purpose.

1951 Census - Madras

All places having Municipal Corporation. Municipal area, all the civil line not includes n municipal limits and cantonments were treated as urban irrespective of their population

size. Another case, a town was defined as continues collection of houses inhabited by usually not less than 5000 persons which having regard to the character of the population, the relative density of dwelling, the importance of the place as a center of trade and historic association and the existence of district urban characteristic such as facilities for higher education, public utility services, local body administration, urban diversions, recreations, the provincial superintendent decide.

1951 Census Travancore – Cochin

All municipalities and places where conservancy arrangements exist were elevated to the station of town.

1961 Census – Kerala.

In the 1961 census, a new definition of urban areas, as given below, was evolved with a view to bring uniformity in its application in all states/ union Territory in the county.

(1) All places with a city corporation, municipality, cantonment board or notified town area committee.

(2) All other places which satisfied the following criteria.

(a) a minimum population of 5000

(b) A density of population of not less than 400 persons per sq.Km. (1000 persons per sq.mile) and

(c) At least three fourth of the male population engaged in non-agricultural purists.

The population density and extent of male population engaged in non-agricultural pursuits were determined with reference to the census figure of 1951. Twenty three places in the state which did not satisfy the criteria were also recognized as towns on the recommendation of the State Government. These exception were either towns in the 1951 census or places of growing importance for one reasons or other having urban amenities.

CITIES GROWTH IN KERALA

Kerala poses certain problems in the definition of urban unit with its high rural density and big villages. Urbanisation process taken place in Kerala is something peculiar to than rest of the country. The state of Kerala formatted as result of the state reorganization Act 1956, by amalgamating formerly princely states of Travancore , Kochi and Malabar districts and Kasargod taluk of Madras presidency.

Kerala is the economy which maintained wide level of contacts with the west due to its long stretch of coastal line. Kerala is famous for its natural richness in time immemorial which attracted the Arabs and others to the state for trade. Anciently Calicut in the Malabar region was the important centre of spice trade with Arabs. With the arrival of Portuguese and Dutch trade has been shifted to Kochi, and Kochi developed an important commercial centre.

The remarkable point in the urban history of Kerala is advent of British East India Company. The peculiar topography and climatic conditions of the state attracted the Britishers, they initiated to expand the cultivation of commercial crop s like Rubber, Coffee, Tea, Pepper, Cardamom etc. in the high ranges and food crops like paddy, tapioca, coconut etc… in the low lands. It has led to the commercialization and monetization of agriculture and there by volume of trade increased vehemently. Supplementary factors to the agricultural sector development was that the expansion of road and transport network. The Road and canal were built from east west in a way to facilitate the easy movement of plantation crops to different parts along coastal line. The urban centres began to appear in Kerala only in the post medieval period when the Kerala economy integrated to world system of modern capitalism. The earliest towns were more

trading colonial administration centers and it is difficult to see any inner dynamics of urbanization.

In Kerala, the degree of urbanization was low in the pre-independence period. The Degree of urbanization was only 7.11. Per cent in 1901 and it had increased to 13.48 percent in 1951. However the pace of urbanization increased in the post independence period. In the decade of 1981-1991 growth of urban population was phenomenal is 60.97 per cent. This was mainly due to the creation of new municipal town and census town in the state. In 2001 census there in and abrupt decline the growth of urban population is noticed i.e. 25.97 percent while the figure in the 1991 census was 26.39 percent.

The early trade relationship with the outside world brought Kerala into contact with different religious, cultures and races which has become the basis on which later socio-economic fabric of Kerala economy in the later periods. Kerala in most fastly moving society in other parts of the world is immediately reflected in the life of Kerala society. The impacts of neo-liberal policies are highly affected in Kerala economy positively and negatively. Kerala cities are attracting huge amount of foreign investments, and it has flourished up as of information hubs. Kerala cities have the high level of proximity of services as provided by all other metro cities in India. A microscopic section of Kerala economy i.e. 10 percent of the population are so powerful and having the capacity to command all modern facilities available in India. Their consumption patter is so modest and extravagant.

In these situations, the census definition need necessarily capture all intricacies in new urban process taken place in Kerala. Therefore, a new operational definition has to be articulated to accommodate all modern trends and development in Kerala.

CITIES GROWTH AND ECONOMIC DEVELOPMENT

According to classical economists, rural inhabitants are pulled to urban areas by high industrial wages (Breliner, 1977, Spengler and Myers, 1977) two prominent economists state that industrialization (and manufacturing employment growth) has been the engine of urbanization " in the past and will continue to be so in future " (Kelley and Williamson, 1984) Migrants respond not simply to the actual wage differential between country and city, but also to the expected differential (Todaro 1969, 1977, 1982) people will continue to migrate towards as long as their expected urban wages exceed their current rural wages.

Rogers and Williamson 1982 Kelley and Willhamson (1982, 1984) modernization theory generally views urbanization as a positive phenomenon for several reasons.

1. Urbanization supposedly facilitates economic growth by increasing modern sectors output in developing countries. Berliner commends that "The traditional view (of economists is) that labour mobility contributes significantly to the efficiently of resource allocation. By migrating from how marginal productivity and wages mobile labour increases the total output of the society. Of the two societies alike in all other respects one with higher degree of mobility would enjoy the higher income" Accordingly, large scale migration to urban areas is a prerequisite for modern industrial society.

2. Some economists and sociologists also have argued that the city life is conducive to the formation of modern ideas necessary for economic growth and over all development (Inkless and Smith 1975)

World cities contain modernizing institution such as school, factory, and the mass media, all of which inculcated modern values that facilities economic development. This view also assets a positive relationship between urbanization and growth.

Recent scholarship on women and development suggests that increasing industrialization, education and urbanization provide more opportunities for women to advance economically and socially. More women will be to participate in the wage earning labour forces when they have greater access to educational industry.

The world Bank estimates that 60 percent of the value developing countries output and 80 percent of the growth in its value are generated in urban areas. Indeed, the productivity gap between urban and rural areas seems to be widening. In general, the poorer the country, the more central a city is to its economic development.

There are various factors that generate economic growth in cities. The economic benefits of urbanization are called agglomeration economics, created by a combination of factors present in cities which reduce distance and transport costs, and enable increasing returns to be utilized, as well as facilities specialization and the division of labour, Cities provide entrepreneurs with pool of skilled labour, and offer, in general, a grater variety of specialized inputs and services. An additional factor contributing to agglomeration economics is knowledge spill over between companies which are more frequent in cities them in less populated areas. These, spillover may consist of sum, the benefit of urbanization can be said to arise from expanded market size and the more fruitful environment for the emergence and employment of ideas. Economics of scale, specialization and completion benefit from the increased market size. Ideas emerge because knowledge, even in the information age, is still location specific and diversity

contributes to economic growth. All these results in the multiplier accelerator phenomenon being much stronger in the big cities that the economics in general.

APPENDIX- III

Discussion on Urban Land Market

This is formulated to show the theoretical issue of the land market. Various theoretical aspects of land market its structure and composition major player in land market nature of resources it deals with the mechanism of price determination. When it comes to organizing the spatial patterns of urban land use, centralized decision making can be a discouraging, and complex job. But even without an effective central authority, people in a community do manage to make decisions – follows his own ideas of what is best for him and various groups undertake limited collective actions, with all their activities being bounded by physical constraints, such as those of geography and the resources of the area in which they live. This kind of decentralized decision making is often called “the market”.

In a market system, the decision maker’s problem is quite simple by comparison- how to use his land, capital, or purchasing power to get the best deal for him, based on known prices and uses for all other properties. Of course, in the market system, there are many decision makers, and each decision that one takes can cause many others to reconsider their own choices about where to live, how much rent to charge, or what kind of building to construct. In our next few chapters as we describe in outline how individuals make decisions in the real estate market, we shall leave open the question of whether the overall result of numerous independent actions is a reasonable pattern of land uses and an equitable distribution of the housing and other resources the city provides. Later on we shall take a hard look at that basic issue.

Markets in general, and the urban and land market in particular, are compatible with centralized decision making to a very considerable degree. Indeed, without standard, enforceable laws regarding contracts, the most familiar forms of market activity would be unfeasible. Without laws establishing rights to land and buildings, an urban land market could not function. Without traffic signals to regulate the patterns of movement, parts of the urban land market- such as the commercial districts – would function very poorly. One the other hand, a rent control law and certain kinds of taxation may cause the land market to behave in an undesirable or an unpredictable way. In any case, it is possible to superimpose centralized decision making on a market on a market process. One way to promote a community land use pattern that approaches as optimum (assuming we can agree on how to identify an optimum) is to allow the market to operate subject to certain socially imposed controls, and to change those controls whenever it appears that beneficial market adjustments would result, For the market system decision maker, however, community provided infrastructure and community regulations in force can be taken as additional "givens" like the pattern of uses on other parcels. They affect the decision that will be made but they do not complicate the decision process.

URBAN LAND RESOURCES

The urban land market deals in "real estate" resources. We can buy or rent some land or a building in this market; we cannot buy a city plan despite the fact that we may have very strong preferences about the spatial arrangement of land uses and the nature of the building, and the further fact that we end up paying for any overall scheme, whatever it is.

It is very common to use the word "land" as shorthand for land and buildings. And discussions of the "urban land market" should usually be interpreted this way. There is a very

practical reason. If a building already exists on pieces of land, we cannot use the land for any other purpose, unless we acquire and demolish the building, the prices of the land include the value of the buildings

“Real estate” is a fairly archaic term, usually defined as land and buildings, or as rights to use or benefit from land and buildings. Another common translation of the term is “immovable wealth”, and, in fact, one basic distinction in law between real property and personal property lies in the fixed location of the former. For things that are moveable, possession is normally interpreted as ownership. For immovable wealth, such as land, ownership is proved, not by occupancy, by written public records.

Real estate “business” also includes activities concerned with the creation of new improvements – houses, shopping centers, streets, sewers, schools, and so on. So another kind of resources administered by the urban land market is “capital” but this term also takes some explanation. Capital is of two kinds: real resources, such as construction labor and building materials, and investment funds. Investment funds are required because payments must be made for the labor and materials as buildings are constructed, and the money thus tied up can be recovered only gradually as income is produced by the durable new inventory.

Players in Land market

Land owner

The person who owns real property has the right to control and benefit from its use. He may delegate some of the control to a manager, or control may otherwise be lodged with a trustee. It is easy to confuse the roles of owner and investor, because we normally become owners through acts of investment, but the distinction lies in what is controlled. The owner controls

something physical – which we refer to as “land” – while the investor controls money. When the investor gives up his money in exchange for land, his role changes from that of a money manager to that of a land manager, and his goals or success criteria may change.

Lenders

Origination of advance or money (often borrowed from commercial banks) to developers or purchasers of real estate but soon sell the mortgage paper thus created to along term investor. The originator may earn either a “finders fee” or a profit in this way. The originator may be a subsidiary or affiliate of a real estate development company, such as a house building concern, for which quick handling of buyers, mortgage loan applications is an important aid in selling; in that case, the originator’s goal or pay off is hard to distinguish from that of the developer. Even after placing new mortgage loans with long term investors, the originator may continue to “service” them – collect and account for monthly payments, look after delinquencies, and so forth- for a stipulated, often customary fee (such as one half of one percent of the principal.)

Long term holders of mortgage investments who what to liquidate a particular loan or group of loans can endeavor to find another mortgage lender who is willing to buy. There is a limited opportunity to sell land to traders, a category of lenders consisting primarily of governmental organizations concerned with housing. Traders provide liquidity for mortgage land by standing ready to buy them; in principle, the trading function would require that land purchased form one long term investor be quickly resold to another, but in fact, the principal mortgage trading agencies have accumulated such large inventories that they themselves area major type of long term lender. Private individuals or strictly private businesses can and do

trade in mortgages, earning profit from differential prices rather than earning interest on long term loans, but this kind of market facility is not uniformly available.

The investors

The real estate investor is an investor who decides to put some of his money into real estate. This deceptively simple statement masks several useful and interesting facts. First of all, the basic precepts of investment in general apply to real estate; the object is to trade money or credit for some other form of assert that promise the highest return subject to conditions that the investor wishes to impose (concerning risk or liquidity, for example). It may be true for some individuals that real estate is the only form of investment available to them, but alternatives are usually present buying government or business securities, speculating in commodities financing a small business, purchasing life insurance, or just putting money in a bank. The ebb and flow of money in the real estate market is part of an overall flow of money among the several sectors of the economy, the aggregate of which may rise or fall as a result of government's monetary policy. Real estate investment cannot be isolated from other forms of investment, either in concept or in practice.

Second, investments may be made in the form of equity or debt, purchasing either the right to receive profits (along with liability for losses) or the right to receive a fixed percentage return on money loaned plus eventual repayment of the principal. It is customary to interpret "investment" in real estate to mean equity finance or ownership mince most of the lending is done by financial institution- banks, insurance, companies, savings and loan associations, trust companies, credit unions, and the like.

The is not to say that an individual or group of individuals is precluded from making a mortgage loan secured by real estate, but the distinctions is common enough to warrant our

using it here. This section, then, assumes that an investor is a purchaser of real estate rather than a lender.

Third, as an object of investment, real estate has at least five distinguishing characteristics.

1. The opportunity for leverage is very great; a large function of the purchase price can usually be borrowed, so that the financial results of equity investment are magnified. Indeed, it is possible to acquire real estate with zero equity, which makes it hard to apply standard investment criteria such as the yield or rare of return.
2. Real estate tends to rise in value and to display marked stability in value, as compared with common stocks, for example, because the basic commodity, land, is essentially fixed in supply and has few meaningful substitutes in the eyes of users.
3. Real estate investment is characteristically illiquid. Once property is purchased, it is difficult to sell, in comparison with securities, for example, because each property is unique and because the market institutions for conducting transfers of real estate ownership are not highly developed.
4. Real estate investment is subject to special income and capital gain tax provisions. For example, deductions are permitted for depreciation, though the property normally increases in value with the passage of time, and these allowances may be partly recaptured at the item of sale. Tax provisions significant enough to obscure the “fundamental” investment performance of real estate and complex enough to make the careful investor seek professional advice or avoid real estate altogether.

5. Real estate investment may be carried out in a number of legal forms, some of them peculiar to this kind of investment and each having distinctive tax implications – estate and gift taxes as well as income and capital gain taxation.

The user

The real estate user's goals are most in need of clear definition at the time when his is searching the market. Generally, the situation is that the choice is far wider than the user can actually make himself aware of. To get the most in terms of location and amenity for his rent dollar, the tenant should not only identify every property on the user market that could reasonably be adapted to his needs, but he ought to continue to do so even after settling down. The costs of real estate market information are high, or the supply of it is imperfect, so users frequently settle for something less than perfection. The range of choice is further limited by the rate of turnover of suitable types of property and by the user's commitment to his present location. A family may allow a month a new community to find and move into an apartment, for example, and so limit themselves to places that happen to come on the market in the early part of that month. A business firm, knowing its lease is to expire and will not be renewed, has lead time to look around but a fixed time at which it mist be out of the present premises. Better places that are expected to be vacated shortly thereafter must be dismissed, and so must suitable places that are vacant and for rent but that cannot be held until the present lease expires. The user's objective, then, quite apart from knowing what he wants in terms of location, lease arrangements, amenities, space, and so on, is to make an efficient search.

Retail stores fall easily into two categories – those depending primarily on traffic generated by a cluster of retail facilities, and those that do not benefit particularly from having other

retail stores as neighbors. Even free standing shops, however, are attracted to centers of gravity or convenient crossroads in residential areas.

Industrial firms tend to avoid areas of non industrial traffic congestion, preferring locations where long distance transportation equipment can reach the factory directly and to which factory employees have ready access. Areas where there are likely to be community complaints about noise or pollutants are avoided. Storage and docking activities have less concern for worker access or community complaints but must be even more directly tied in with long distance transportation.

Office space users in the market consider the kinds of face to face contact that their work requires and the prestige that particular buildings will give to their firms. There is a wide spectrum of interest in both of these attributes, however,

Personal service firms - such as Laundromats, shoe repair shops, and beauty shops, - like free standing retail stores, are drawn to residential focal points, though some categories rely on traffic generated by a cluster of stores or by common parking arrangements.

Hotels and conference activities make highly specialized and often large scale uses of real estate, which may involve layers of ownership and tenancy; they are thus conducive to joint venture types of operation. For practical purposes, the developer is the user, location demands cannot be generalized.

Dining and recreation establishments have weak centrality. They gravitate toward specialized districts but there are many exceptions, and the ability of the operator is usually far more important than the real estate in determining the success of the enterprise.

The Property Market and Price Determination

The property market deals in rights and interests in land and buildings; transactions involving heterogeneous units of high value in many submarkets – shops, office, houses, - reflect variations in buyers, sellers, local knowledge and unique locational factors. The market has no formal organization or central agency or institution like the London Stock Exchange or Lloyd's

The property market is very imperfect; nevertheless there is an underlying rationale due to the effectiveness of market price in allocating resources between different users. Transactions occur between sellers and buyers of property and in the long run rights and interests will be controlled by those users who bid the highest price for these interest.

A property may be purchased either for own occupation or for investment. If the former the purchasers return is in occupational benefits; if the purchase is for investment, the return may be as an annual rent or as a capital gain following a successful planning application either changing the use or density of existing use.

Assuming rational behavior the investor will be seeking to maximize returns in profitability or satisfaction from either own occupation or investment. The decision to rent or purchase will depend upon the current level of rents, interests rates, the availability of credit, expectations about future trends, and personal financial factors. If anticipated rents are less than interest charge the owner might be induced to sell rather than rent, unless there is a prospect of capital gain. Similarly a potential purchaser will compare interest payable on borrowings and their availability with rents payable. The opportunity cost of capital must be considered whether renting or buying.

When a potential user decides to rent rather than purchase he must offer a rent high enough to induce the owner to let; the greater the potential profitability and utility to him of use of a

building the higher the rent the will offer. Similarly the potential purchaser will bid a price determined by expectations regarding likely profits from ownership of that building. Bids will reflect the different expectations. Owners will similarly differ on how much they should receive for giving up interests in their property.

Real properties are heterogeneous and this adds to the complexity of supply and demand analysis. The market price of real property reflects economic assessments on the part of various buyers and sellers regarding anticipated net income and profitability.

Whether renting or purchasing, the investment aspect is present; the essence of investment is the giving up of a capital sum in return for income over time. The purchaser or potential occupier needs to discount the stream of anticipated income and benefits from the property to a present value at the appropriate rate of interest. Probably the marginal cost of financing the project and according to present income and capital, the degree of risk and the likely return on capital in alternative investments with similar risks. Potential occupiers or purchasers will consider differing advantages from occupation so that each will arrive at a different price influenced by the price and availability of substitute properties. For any property interest there will be a maximum price which buyers will be prepared to pay. Similarly potential sellers will value their interests and establish minimum prices influenced by the selling prices of comparable properties, expectation regarding future price change, economic policy and prospects, and the cost of equivalent reinstatement elsewhere. Thus, deals will occur provided potential buyers have maximum prices above the minimum prices of potential sellers. Where the buyer’s maximum price is above the seller’s minimum price, the price fixed will be determined by the competition amongst buyers and their expectations as against the number of properties on offer and the expectations of sellers.

If there were only one potential buyers of a particular property with a maximum price higher than the seller's minimum price the market price will be fixed somewhere between the two points by bargaining. The two prices fix a limit on the possible movement of market price at any time, the situation may change as expectations or conditions within the property market vary. The stronger the seller's bargaining position the closer the market price will be to the maximum price; the weaker his position the closer will price be to the buyers maximum (or sellers' minimum).

Thus prices within the various submarkets will be determined by the various maxima and minima determined by prospective buyers and sellers bidding against each other. Equilibrium prices may be reached at which the amount of real property offered for sale is taken up by buyers; however, a characteristic of the property market as a whole and of sub markets such as private housing is that it lacks the flexibility to clear itself. At times property remains unsold because the minimum price asked by owners is higher than the maximum price of bidders. That the property remains unsold may bring about an adjustment in the owner's minimum price or buyer's maximum in a subsequent market period. Alternatively the owner may keep to his price hoping that buyers will raise their maximum price as perhaps economic change.

Any potential buyer of real property is likely to view several properties before maintain a purchase and a potential seller will await a number of bids before making a sale. However, few persons are able to investigate all alternatives; where a potential buyer lacks information or buys too quickly he is more likely to pay a price which may be higher than the market level generally. Similarly, the potential seller lacking information or making a hurried sale will receive a lower than the market price. Where a potential seller purchased a property in boom

conditions and is under no pressure to vacate he may hold out for a price that will cover his expenditure even though conditions may have changed fundamentally.

The imperfection of the property market is especially significant in sub markets, such as for land. A plot in a similar area may be bought or sold at different prices according to the expertise or lack of experience of the buyer. Here lies the change of making a speculative profit because one person is more astute than the market in anticipating future trends. If perfect knowledge were available as to future events regarding land there would be no opportunity for speculative gains because all future potential and therefore value would be fully and accurately discounted to the present. Speculative gains can only be made in an imperfect market. Similarly when there are few sales involving a particular type of property and where buyers and sellers are not fully informed relative skill in bargaining is significant in determining price. Market imperfections may mean a heavy reliance on professional middlemen leading to monopoly power.

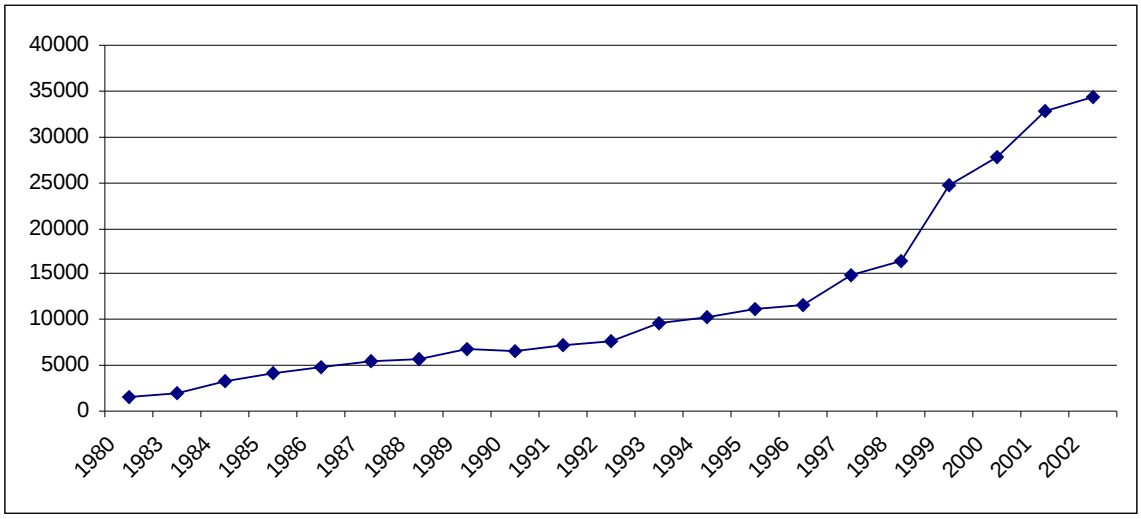
The typical method of conducting transactions in the property market is by private treaty between buyer and seller. The price will be determined by the offer and counter bid process described. The transaction is likely to be carried out discreetly through the medium of professional middlemen. Because of market imperfections the seller will not know exactly what price he will obtain; the final selling price of a real property is rarely revealed. A more open method of buying and selling real property is through auctions which are used where there is great uncertainty as to property values due to unique factors or where the market conditions are so fluid as to produce rapidly changing values. The transaction is completed in a much shorter period than under private treaty. Auctions are also used for sales by special bodies such as public trustee. If the necessary minimum price required (the reserve) is not

reached the property may be withdrawn and possibly put up for sale at a later date. Another method used where market conditions are exceptionally unstable or where the property is unusual is the tender; potential buyers are invited to submit a sealed bid by a set date. The seals are not opened until this date and provided the tender is acceptable (the reserve reached) the highest bidder secures the property. The tender may secure the highest possible price for the seller as potential buyers will tend to put in a maximum bid without having the advantage of knowing competitors' bids as at an auction; also buyers will not have the opportunity normally of resubmitting a tender. There are also many other transactions between divisions of a large company or members of a family, completely sheltered from the market processes and where price will be determined by quite unique features.

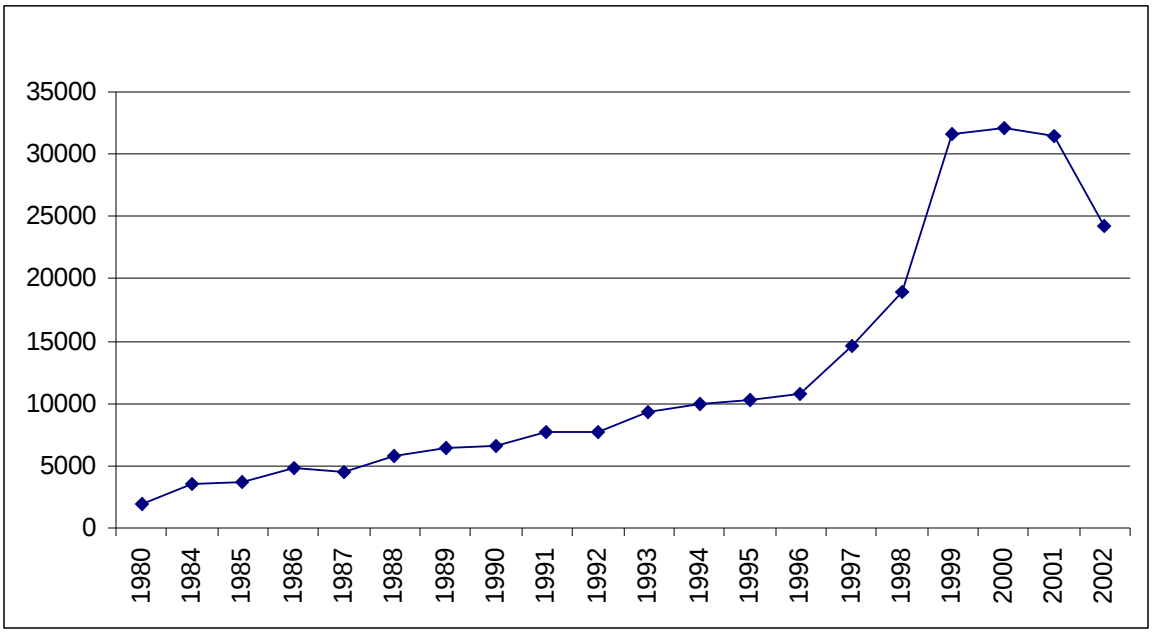
APPENDIX-IV

FIGURES ON LAND VALUE

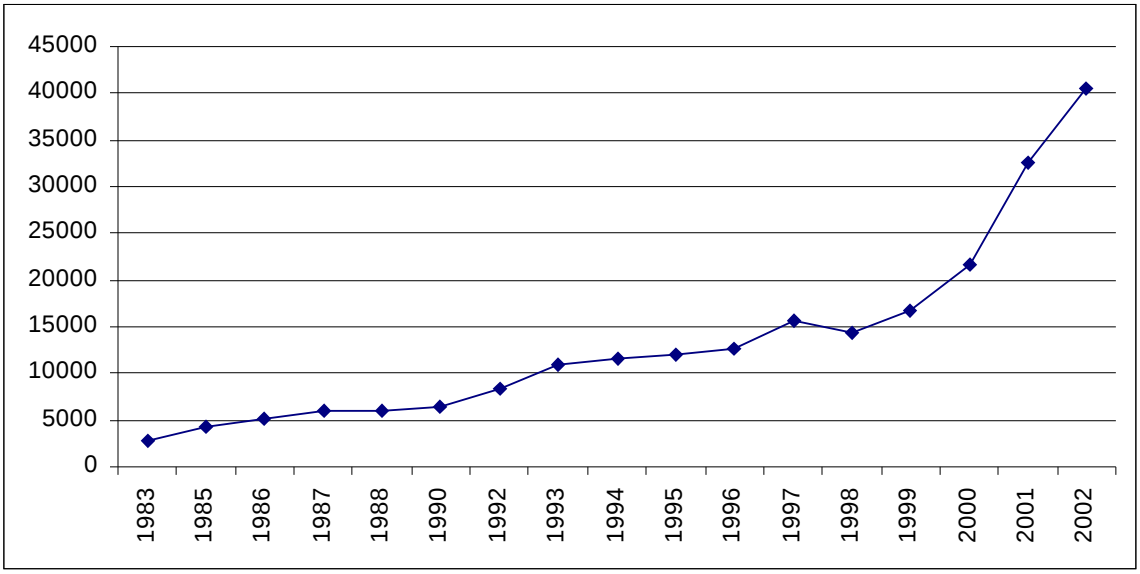
The Three Yearly Moving Average of Edappally



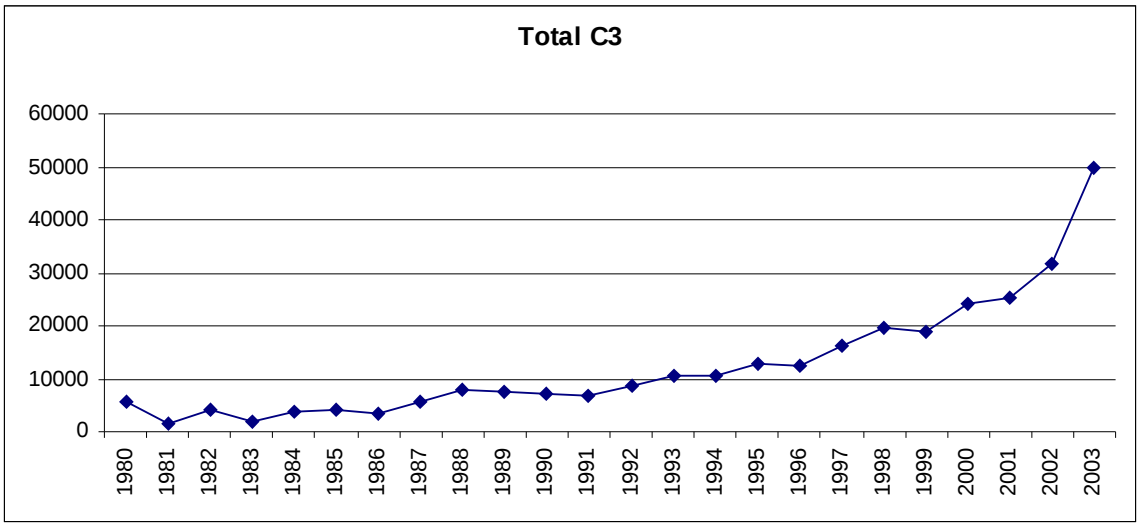
The Three Yearly Moving Average of Edappally South



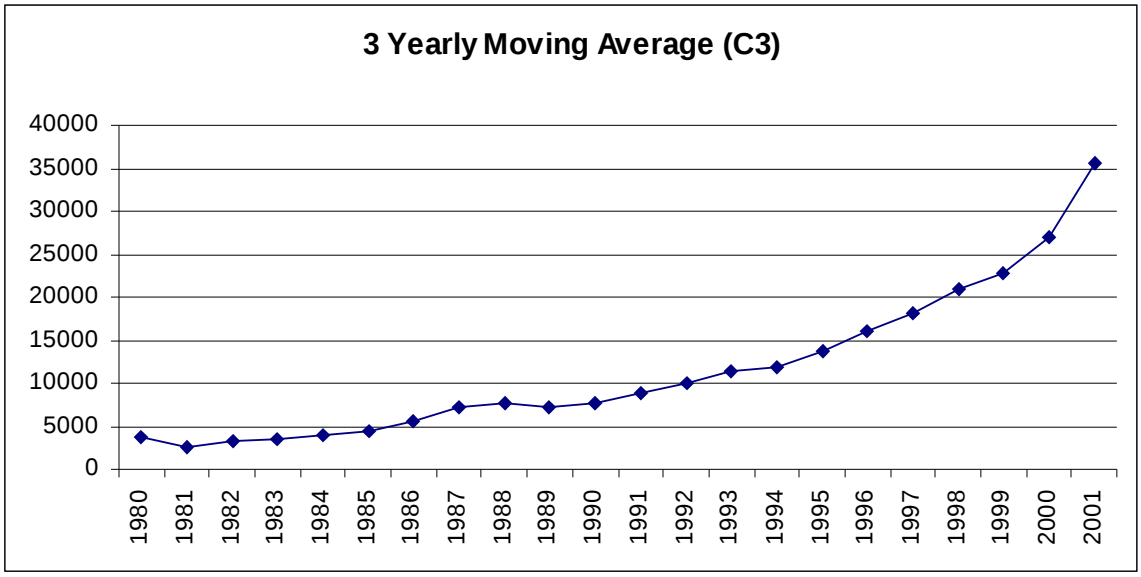
The Three Yearly Moving Average of Edappally North



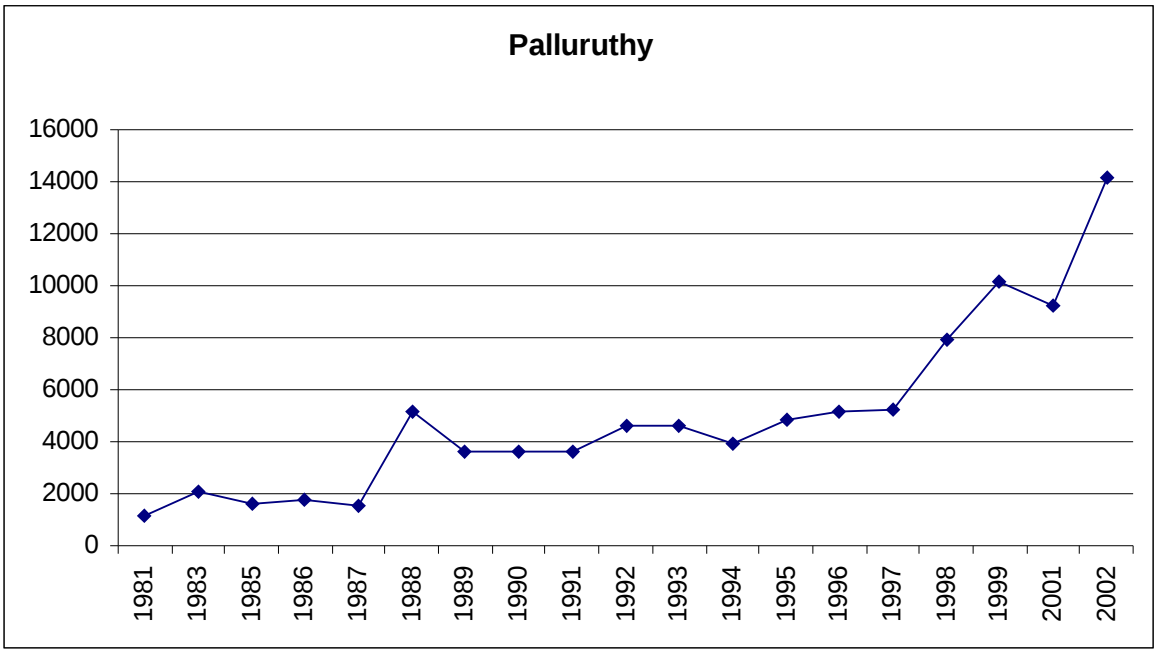
Trend in Value Per cent in Mattanchery Region

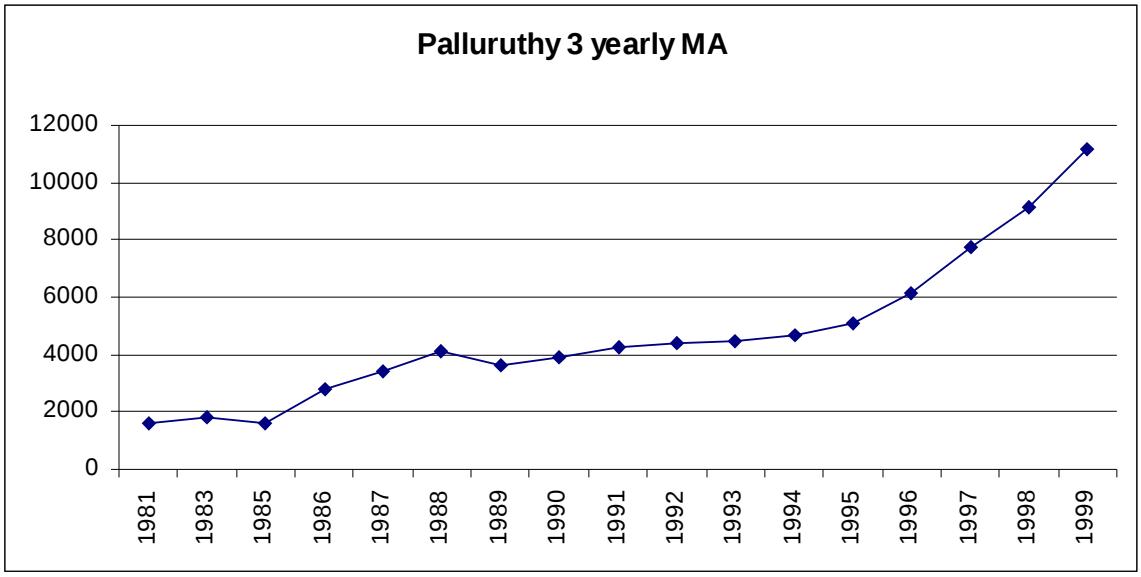


Three yearly moving averages of value per cent

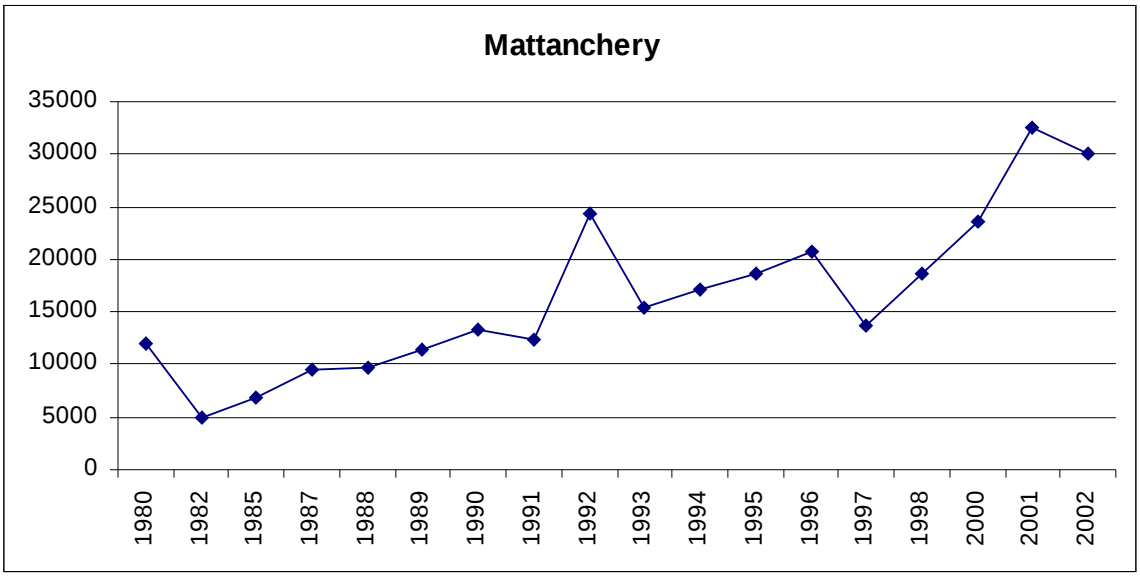


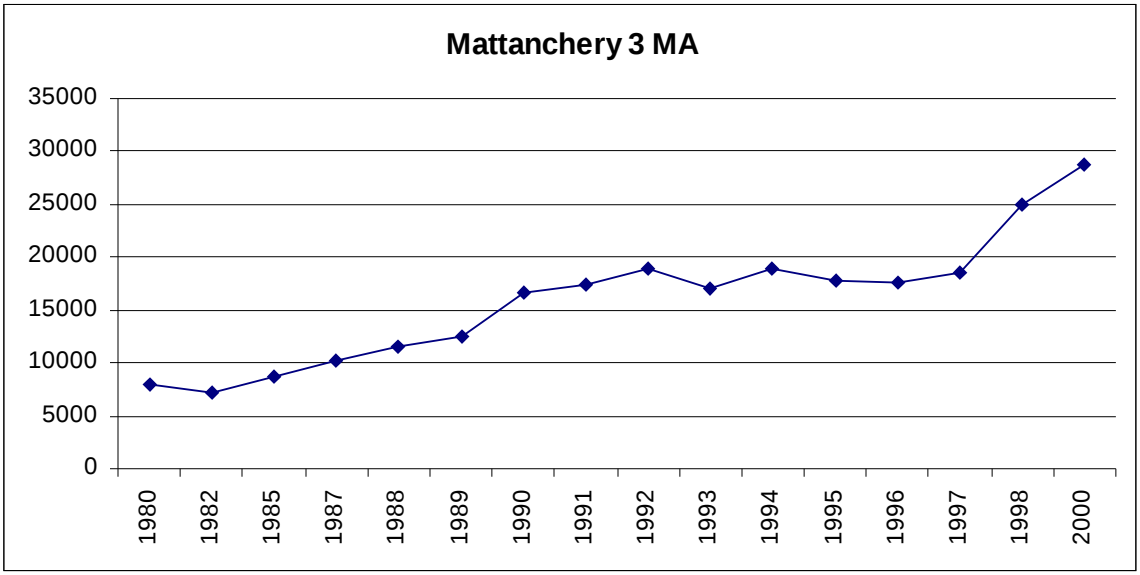
Three Yearly Moving Averages of Value Per Cent Palluruthy



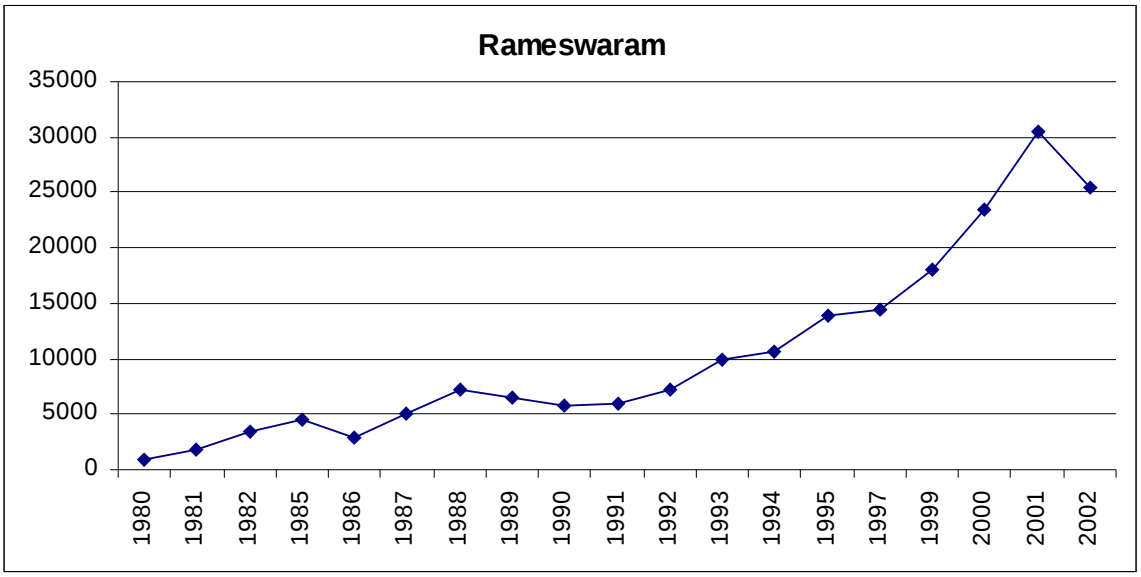


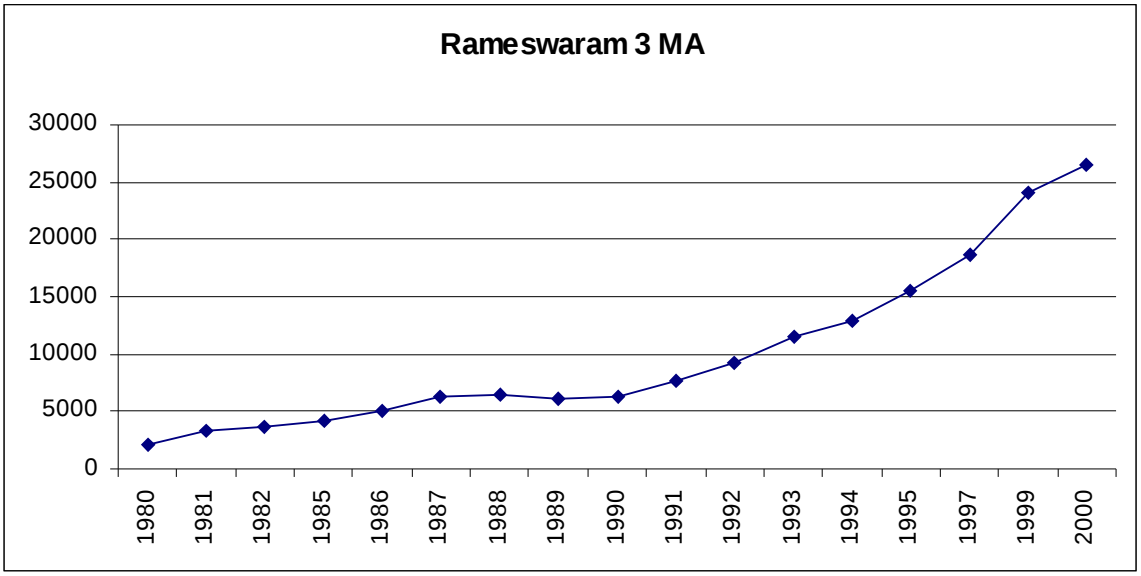
Three yearly moving averages of value per cent of Mattanchery



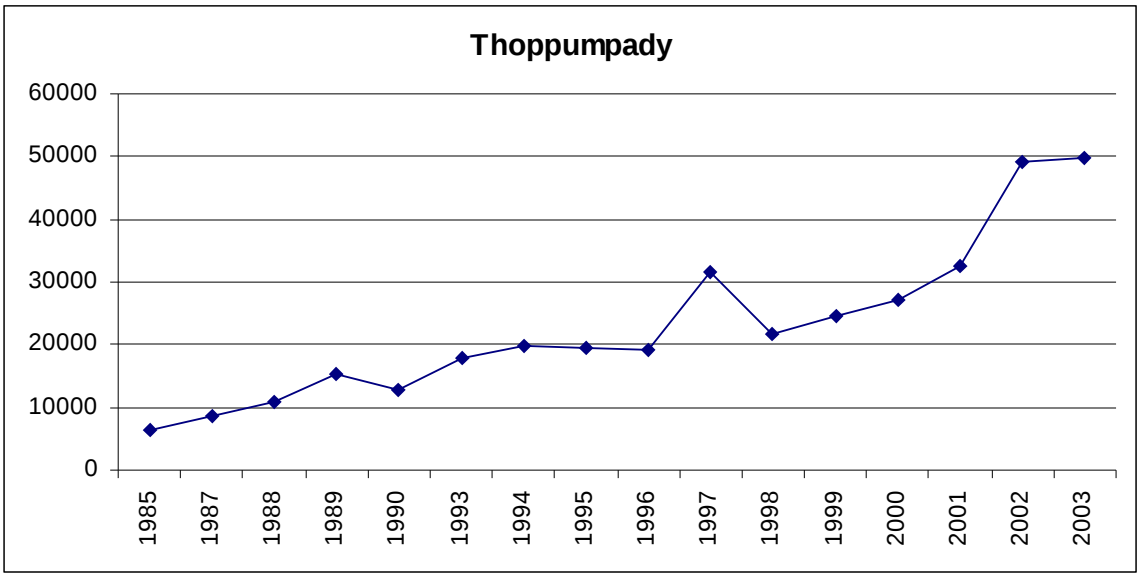


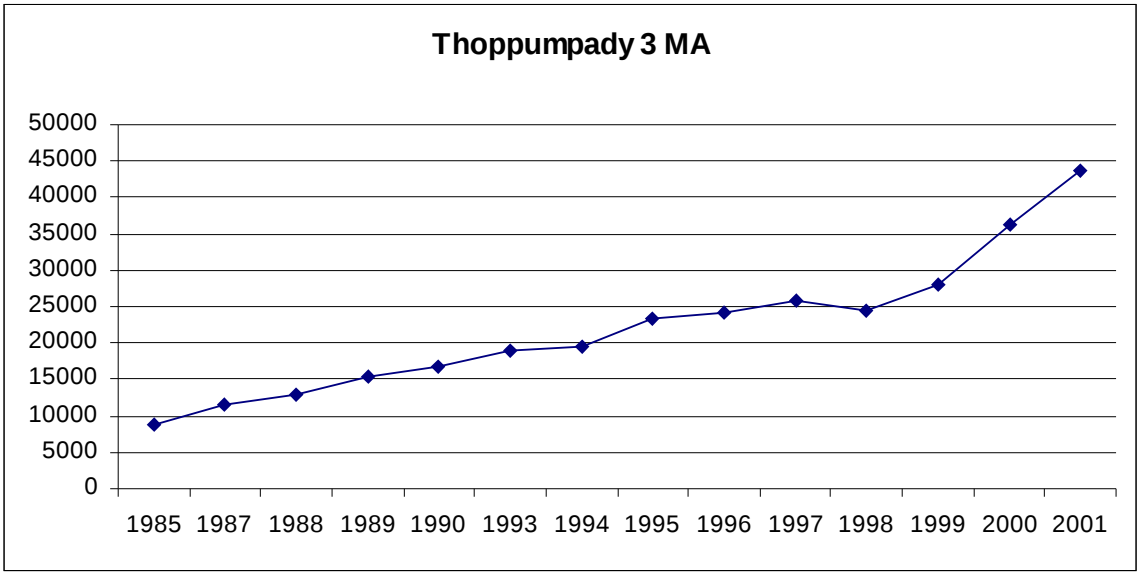
Three Yearly Moving Averages of Value Per Cent Rameswaram



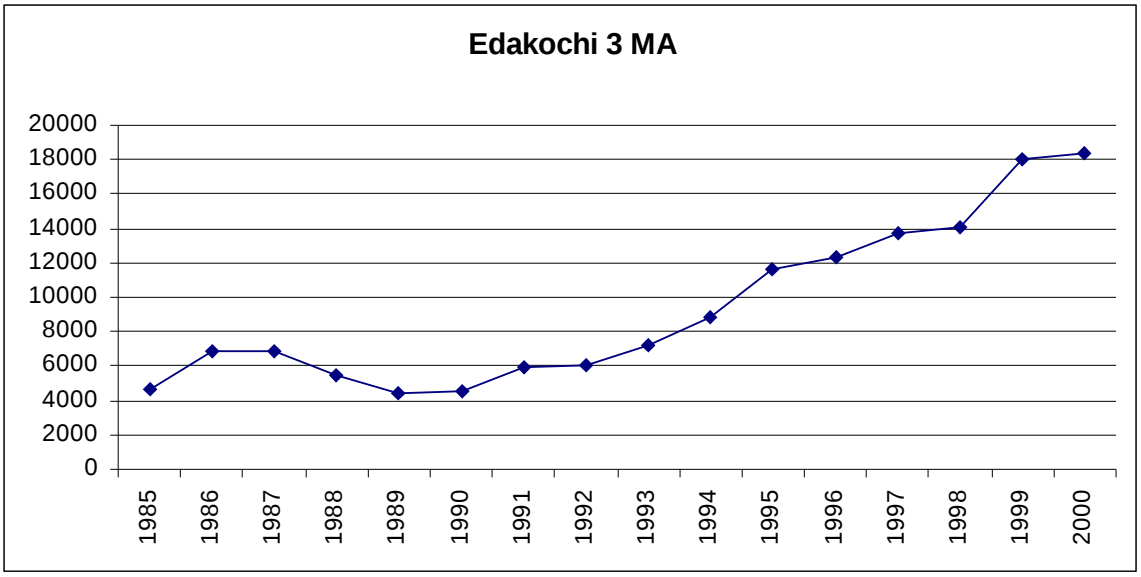


Three Yearly Moving Averages of Value Per Cent Thoppumpady





Three Yearly Moving Averages of Value Per Cent Edakochi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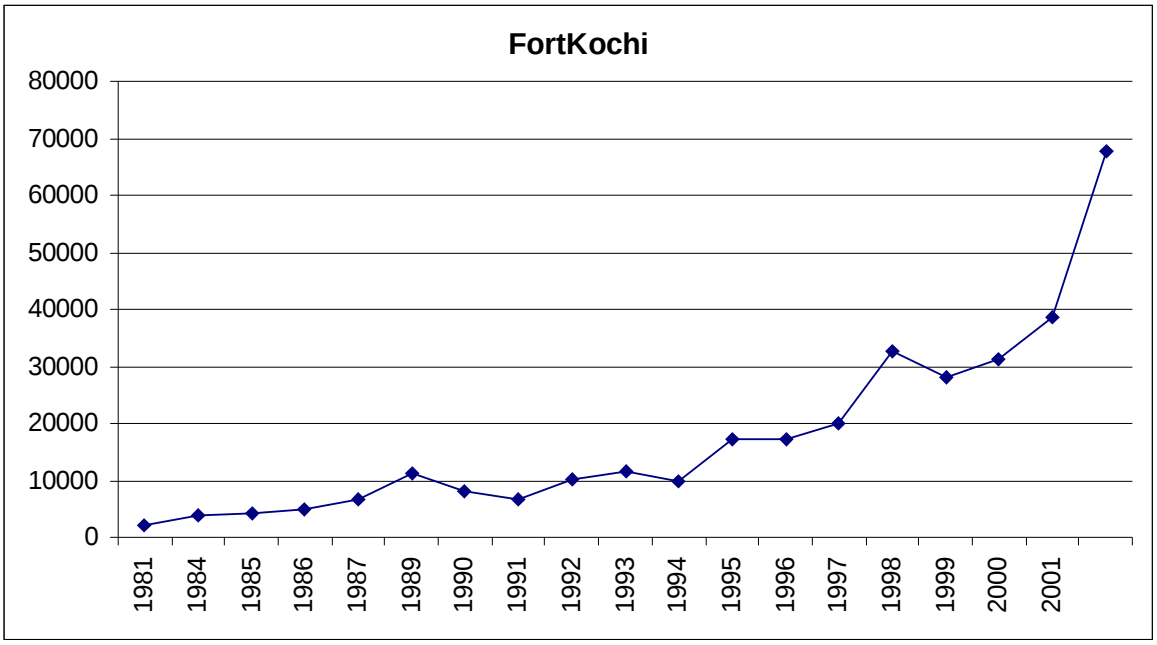
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