Human Settlements Planning
Lecture 8

Urban Planning

We will begin with Urban planning. What exactly is town planning? Like we see, it's the art of shaping and guiding the physical growth of the town creating buildings and environments to meet the various needs such as social, cultural, economic and recreational. So you need to have a well-balanced social and economic development, there should be an improvement in the quality of life, there should be responsible administration of resources as well as environmental protection and there should be rational use of land. So, a combination of all these factors is encompassed as town planning. You need to have a combination of physical, social and economic planning and it's actually a combination of different disciplines and an organisation of different elements like built environment, spiritual environment, financial environment, natural environment and ideological environment. If planning was not there, we would have an uneven and chaotic development, congested cities and completely no zoning mixed land use situation. As planners, it is our role to Consider, Recognize and be concerned for the future. So, we need to consider what is that humans require in an urban scenario or in a town, what are their requirements?, What is it that the process of changing and we also need to recognize the changes that are occurring, the complexities in different geographic locations. If you look at the aims and objectives of town planning - The aim is to create and promote healthy conditions and environments for all the people to make the right use of the land for the right purpose by zoning. To ensure orderly development. To avoid encroachment of one zone over the other. Social,economic, cultural and recreational amenities should be provided. Recreational amenities like open spaces, parks, gardens and playgrounds, town halls stadiums, community centres, cinema houses and theatres are to be provided for convenience. To preserve the individuality of the town, to preserve the aesthetics in the design of all the elements of town or city plan, that is the part of beauty. So, it is a combination of health, convenience as well as beautification.

If you look at the planning process over here, we start with identification and definition of what is the problem. Then we go about, Defining the objectives and once we define the objectives, the next stage, a very important stage is data collection. The data is collected through various studies and surveys. So you basically need to identify the trend and direction of growth, traffic survey, what kind of demography, climate, resources and other potentials and that leads to the analysis of the data that is being collected. So the analysis of the data is basically in the form of study, maps, charts, graphs and the analysis actually divides into short term objectives, long term objectives can be identified. Then comes the next stage of 'Forecasting', what do you project from this analysis? What do you project as long term goals and short term goals? The

demographic projection and forecasting, this is based on migration, employment, industrialization and urbanization. So now that we have the forecast model ready, it comes to what exactly is going to be designed. In design it is basically preparation of development plans, formulation of zones, alteration to the existing zoning regulations, widening of the roads etc. Then you need to fix the priorities, everything is not going to be possible in the plan. So, what is going to be given importance? Identification of priorities based on need, importance and urgency. So, when you actually go about the planning process, it is entirely done for the people in that vicinity. What are their requirements? What is the study and the survey say? So, basically from data collection we will decide how the priorities are going to be fixed and from fixing the priorities we come to implementation. How is it that we are going to implement these? Implementation is by suitable authorities, within that particular time and it must satisfy all the required obligations. Again here, time factor is a very crucial factor because as data collection is done over a period of time, by the time the data becomes redundant, implementation should happen, if that does not happen, the data collected pretty much becomes obsolete. If that becomes obsolete, the entire planning process is destroyed. So, in the Implementation stage, it is very important that data collection is the most crucial stage and that is what decides the forecasting, that's what decides the design, as well as the implementation. After data collection, the most important stage is implementation. Yes, design is obviously very important but what is the purpose of such a good design on paper if it is not implemented. So, the Implementation phase is the most crucial phase that is connecting the data collection and the design and finally, you have the 'Review, Evaluation and Feedback' which is monitored by periodical inspections, feedbacks and review reports. So, this entire thing encompasses our planning process. Right from when we start going about planning, what are the problems faced by the people, then from the people the data is collected as to what kind of city or what kind of objectives is it that the city is going to provide and then we come to the design, what kind of priorities and then fix up the priorities; we need to make sure the city and the design is implemented and finally, it is not enough if it is just going to be implemented, there should be a constant check, review and feedback to ensure that the chain is not broken between the design and the data collection in the implementation phase.

So, we have three different types of plans; you have a Structural plan; Comprehensive plan and a Developmental plan. A structural plan is one that singles out for attention of certain aspects of the environment, usually the land-uses, the main movement systems and the location of critical facilities and buildings. Such a plan aims to influence certain key vocational decisions while recognizing that there are many other things that can't and perhaps should not be decided at the outset. Now, a Comprehensive plan seeks to combine in one document the prescription for all aspects of city development. It includes an analysis of the city's economy, its demographic characteristics, and the history of its spatial development as a preface to plan for

how the city should evolve over a 20 year period. The developmental plan is a plan for development or re-development is very important because if it is a brand new city which is going to start, then there is no issue, a development plan is just going to oversee what are the changes that are occurring from day 1 but in a redevelopment plan there is a lot of history to go back to and the kind of changes that are occurring because of this plan and we have to review and compare between the past and the present and anticipate the future as well. This includes a regional plan, master plan, detailed development plan and a new town development plan.

Now, if you look at the aspects of India which is both rural as well as urban. If you look at the urban area according to the census of India, it's all places with the municipality, corporation, cantonment board or notified town area committee. All other places which has features as; a minimum population of 5000, at least 75% of the male working population engaged in non-agricultural pursuits and a density of population of at least 400 persons per square km and predominantly urban way of life i.e Urbanism. All of this decides urban area, apart from the urban area and urban agglomeration, rest is considered as rural area. These are the characteristics that decide what area is urban vs what area is rural. So, now if you go into what is it that planning entails - the Discipline of planning.

If you look at the urban discipline, it's an urban area that is characterized by higher population density and vast human features in comparison to areas surrounding it. Urban areas may be cities, towns, or conurbations but the term is not commonly extended to rural settlements such as villages and hamlets. As per Census of India 2001: a) All statutory places with a municipality, corporation, cantonment board or notified town area committee, etc. So, the three criterias we just saw; minimum population of 5,000; at least 75% of male working population engaged in non-agricultural pursuits; density of population of at least 400 persons per sq.km. If you look at the city - towns with population of 1,00,000 and above. If you look at Regional planning, what happens in a regional planning? On the basis of the elemental factors of space, a region is a geographic or areal unit with certain limits and bounds. The unit may consist of a few villages or a number of countries. A region may, therefore, be thought of as an areal or spatial organization of varying dimensions. Any portion of Earth's surface where physical conditions are homogeneous can be considered as a region in geographic sense, ranging from a single feature region ot compage, depending on the criteria used for delineation. In practice, a prefix is added to highlight the attributes on which the region has been defined, for example; agriculture region, resource region, city region, planning region. So, what is that purpose of that region and why has it been delineated? So, once that is decided, that ends up being the prefix of that region. If you look at the census - the classifications of towns and cities here, Class I you have 100,000 and above, in India you have 393 like that. In class II you have 50,000 to 99,999, you have 401 towns. Class III - 20,000 to 49,999, 1151. Class IV - you have 10,000 to 19,999,

that's 1344. Class V - you have five thousand to nine thousand, nine hundred and ninety nine, which is Eight hundred and eighty eight towns and Class VI is below five thousand is 191.

Master Plan and its Components

Now, we will move on to Master plan and its components. The purpose of a master plan is to promote growth and guide and regulate present and future development of towns and cities. It is an instrument to work out land and infrastructure requirements for various urban and rural uses, and allocate land for various uses to result in harmonious and sustainable distribution of activities so that towns/ cities are provided with a form and structure within which they can perform all their economic and social functions efficiently and effectively. However, as indicated in various relevant acts, the scope of a master plan confines to the broad proposals and allocation of land for various uses such as residential, industrial, commercial, recreational, public and semi-public, etc. It proposes a network of roads and pattern of streets and traffic circulation systems for the present and the future. A master plan identifies areas required to be preserved and conserved and development of areas of natural scenery and landscape together with preservation of features, structures or places of historical, architectural and scientific interest and environmental value. Master plan includes zoning regulations for regulating development within each zone. It also indicates stages through which the plan is proposed to be implemented. Thus, a master plan is an important instrument for guiding and regulating development of towns and cities over a period of time, and contributes to planned development both conceptually and operationally. Master plans are generally prepared for periods of 20 to 25 years. Population projection for such plans is in fact a difficult task even though various scientific methods are adopted by planners. It is a well known fact that actual population always surpasses the projected population. Therefore, land requirements proposed for a projected population also falls short and so is the case with proposed infrastructure as well. It is not denying the fact that collection and compilation of information required on various parameters is a time consuming process because firstly, up to date and reliable information is not available and secondly, collection of information calls for fresh field surveys every time a master plan is prepared. This is what we discussed initially in the process of planning, the stages between data collection and implementation has to be quite swift because if implementation happens too late, with respect to data collection, the data collected is obsolete and not pertaining to the current scenario. It is because of this difference in time and delay in time, that most of our master plans are not able to anticipate the growth in population and the requirement or lacking in infrastructure or networks, so this gap in time has to be reduced for a master plan to successfully work, because when we look at a time period of 20 to 25 years, the population is obviously going to grow exponentially within that time frame vs the infrastructure to grow within that 20 to 25 years time is not sufficient. Now, if a roadway has to be built from scratch, it is going to take a couple of years. A flyover to be built is going to take a

couple of more years, if you want a MRTS or a Railway system to be built, it's going to take more than 10 years. So, the time factor is the main consideration while proposing it for a city because it's proposed for a period of twenty to twenty five years, the data collected, the data analyzed has to be over projecting what has been collected at that point of time, which is rarely done. What data was collected in 1975, is not going to be applicable in 1995. The world has pretty much changed in those 20 years. So, that is the deficient that most master planners face. Ensuring effective involvement of citizens in plan preparation and implementation is seldom resorted to because in the present practice of master planning, public suggestions and objections are invited by giving only a public notice that too only after the draft development plan is prepared. Planning is a continuous process involving not only plan preparation but also plan implementation. Due to ineffective implementation of plans, planning proposals become irrelevant and meaningless and plan document becomes ineffective. In India, the root cause of urban maladies is disconnection of plan preparation and plan implementation. Thus, over the years, dichotomy has emerged between what has been proposed in a master plan and what has happened literally on the ground. In large number of cases investment opportunities have been made use of in contradiction to master plan proposals, which has led to the emergence of development trends in the directions contrary to that of the master plans. So, now this is exactly what happens like what we discussed. In the year 1985 to 2015, there has been a lot of change with respect to information technology, the kind of cars that are driven, the kind of automobiles that have come on to the road and even the kind of typologies of buildings that have emerged. The planning at that point of time, in Chennai as an example if you take, did not allow for skyscrapers. Chennai believed in growing as a sprawl, not having too high rise buildings because of the sea breeze settling. We wanted to ensure that the sea breeze would set in throughout the city and not hamper it by building tall buildings without any calculation or discussion. But what happened with the emergence of information technology and the IT sector is; the building requirement of tall huge skyscrapers, number of storeyed buildings and these IT complexes. That is a new typology of building that has emerged. Let it be Ascendas, Olympiad Tech Park or Tidal Park; all of these are different typologies of buildings and these were not accounted for in the master plan. These all have changed because of development trends and investment opportunities that the city or the state doesn't want to give up.

If investment strategy goes contrary to the master plan, economic chaos are sure to prevail. Orderly growth of urban centers therefore calls for making available adequate resources and adoption of investment strategies in accordance with the direction indicated in the master plan for effective implementation. Lack of financial resources on one hand and absence of dovetailing of physical planning with fiscal planning has been largely responsible for lopsided and unplanned growth of our urban areas. The same thing happens when you look at the 20-25 year frame, what is planned for today; the cost of materials, the cost of labour, everything is

going to change exponentially 10 years, 20 years and 25 years from now. So, the fiscal planning again, does not warrant for any massive changes but like we know, because of all these changes occurring, the fiscal planning also has to be strong to support the financial changes that occur and the planning changes that are going to occur over a period of time. Land use planning, without any link with infrastructure investment leads to a situation whereby investment is driven by the demand of already developed areas leaving new areas with inadequate investments; yet it can be safely assumed that implementation has not been more than 30 percent. Urban local bodies without exception suffer from very weak resource base. Their incomes are much less compared to the ideal level of expenditure. So, the main bodies who are incharge for master plans and the planners who are incharge, they are not sufficiently given adequate support, to create, master plan of futuristic cities. They also need to be updated on their knowledge, they need to get trained on the different changes that are occurring in the planning scenario, the kind of things that are happening around. So, because of investments not getting channelized in the right way, there are a lot of other expenditures which are happening, which are not pertaining to the urban local bodies. They are not able to earn as much money as they are spending. All of these lopsided activities occur. Demands on these planning institutions are very heavy while the resources available to them are very few, because of the archaic urban land policies and rent control acts, income local bodies have remained static. These urban local bodies are also plagued with high levels of corruption, poor managerial capacity, lack of technical expertise and constant interference of elected representatives. So, that's another main concern that we discussed. Lack of technical expertise because the planners are not given any advice or training with respect to the changes that are occurring around them and as every government changes over a period of five years, the master plan also changes as the priorities of each political party would change and because of this constant interference, the void or the distance between plan implementation and the plan on paper, changes are not met. Inspite of all these limitations as mentioned above, the concept of statutory master plan has been in vogue over the last four decades and it has no doubt made discernible impact in regulating and guiding the development of cities and towns. Without master plans the situation would have been much worse in our towns and cities.

Now, moving on to 'Zoning'. What exactly is regional planning? What is a region? It is an area with certain characteristics, often-mere size, by virtue of which it is adopted as a suitable unit for some particular purpose of business and administration. It is also an area which is homogeneous in respect of some particular set of associated conditions, whether of the land or of the people, such as industry, farming, distribution of population, commerce or the general sphere of influence of a city. A region in general terms is envisaged as a natural unit, in contrast to the artificial unit created for administrative purposes.

Central Place Theory

The Central Place theory was discovered that there is some ordering principle governing the distribution of towns and cities, that is, settlements concerned with the provision of goods and services. Developed a theory regarding the gradation of towns and the degree of centralized services. So, basically a region was decided that it would be a subcategory of what you consider a town or a city and this way, there is a degree of centralized services occurring. An individual areas that are serviced by one particular city centre becomes a region and number of these city centres put together and a number of these regions put together creates a city. In a central place, it is identified as a settlement providing service for the population of its hinterland also known as complementary region, supplying it with central goods and services. When you look at services and goods, it's educational, leisure and cultural facilities, as well as those of retail and wholesale trade. Basic elements of Christaller's theory are; A central good's place, A central place, A complementary region. So, these three elements are very important for a central or a region to occur. In this theory, Centrality means importance, it is manifested by the quantity and quality of different services and functions provided by the settlement. It is defined as the functional importance of settlement of the central place. Functions determine the centrality of the centre and not the location.

One of the most important characteristics of a central function is that, it generates spatial interactions through the movement of men, materials and ideas between the central place and the complementary region surrounding it. Rare the function, the higher the range of the interaction. Each center has its complimentary area and from the center emanates the centrifugal or distributive functions and from the complementary areas to the center gravitate centripetal activities or activities of collection.

Now, what are the assumptions made by the Central place theory? The main assumptions made are; the Landscape is even with an even distribution of natural resources and an even spread of population - invariably assumed to be farmers. "People do the marketing in a circular area." The radius of the circle of the marketing area i.e 'the extent of the market' is the function of transport cost. The circles so overlap that the common areas of overlap provide hexagonal shapes, and all consumers and area are served by various centers. Population is evenly distributed in all the directions and the movement of people in all the directions is unimpeded and involves equal unit transport cost. All people are rational: they want to minimize cost i.e transport cost and the time cost of travelling in particular and maximize gains. All the consumers have the same purchasing power.

Lower order functions are available at lower order places and higher order functions at higher order places, though higher order settlements have many lower order functions also. The relationship between settlement nodes is orderly and not disorderly. There is a hierarchy of

functions related to the hierarchy of settlements. In every field there are facilities ranging from the lowest to the highest order i.e primary school institutes to specialized learning and research, village dispensary to a specialized institute of surgery or medical treatment, One counter bank to a very large bank. Each lower or higher order service requires threshold population. A cinema hall will require a minimum film - viewing public of say, 500 members per show. A threshold population and efficiency of transport system i.e low transport cost will sustain a facility.

Now, let us assume a farmer has to go from point A to point B selling his goods. Since we have assumed that travel is equally easy in all directions, we have to circulate this by deciding that this is the correct radius but in more time, more producers may develop their own separate market areas as shown in the diagram. Then with the development of transportation and communication the market areas will expand, there will be an attempt to cover the maximum place possible. With the circular market areas we can have a situation as in the diagram. So, there will be these unnecessary voids created and that's when you have the hexagonal pattern emerge.

While in the diagram there are several unserved areas, the diagram there is considerably overlapping. Neither of these instances give us a very stable result. While in the former case, the unserved area will have to split equally, the later consumers in the shaded region will go to the nearest centre. Ultimately the hexagonal market areas will emerge as the most suitable. So, you have both formal as well as functional reasons. *Delineation of formal region* is grouping together of local units with similar characteristics according to certain clearly defined criteria but which differs significantly from units outside the region on the basis of that chosen criteria. So, *Delineation of Functional region* is involving grouping together of local units that display a considerable degree of interdependence.