CHAPTER – II

REVIEW OF LITERATURE

2.1 INTRODUCTION

During the past decades, sufficient literature has appeared on urban land policies. The urban land policies have been studied from different dimensions especially respective to the Geographers, Town Planners, Economists have analyzed this problem in the social as well as spatial context.

The study can be classified into several themes in the light of urban land use polices on Urban Land use Changes, Urban Land Value, Land use Theories, Urban Land use Planning, City master plan and Sustainable Development, Urban Land Ceiling act and its implications, Zoning and Building Byelaws, Urban design and Heritage Status, Slum Clearance and Improvement act and its impact on urban development, and Urban Renewal and its impact on Land use change to know the importance and necessity of the urban land problems in relation to the implementation of the urban land policies and regulations.

2.2 URBAN LAND POLICIES AND REGULATIONS

Many land use policies, regulations, and zoning ordinances promote development that incorporates smart growth principles. In reviewing the literature exploring how property values are related to land use regulations and smart growth, several primary topics emerge:

• Urban growth boundaries;
• Open space;
• Housing affordability;
• Mixed land use zoning.

Urban growth boundaries have objectives of limiting urban sprawl, preserving open space and agricultural lands, and increasing housing density. Most of the empirical studies of the effects of urban growth boundaries on property values have found that land values within the boundary are increased by the imposition of a growth boundary.
Dawkins and Nelson (2002). The Literature on various international and U.S. urban containment policies and compared to the effects of urban policies on land and housing values. They found that these policies affect land prices; most of the studies review showed an increase in land values inside the growth boundary. The results for the effect on housing prices are not as clear, with different studies indicating urban growth boundaries increase, decrease, or have no real effect on housing prices (Dawkins and Nelson 2002; Downs 2002; Nelson, Pendall et al. 2002; Jun 2006). Dawkins and Nelson (2002) also suggest that the housing price effects on growth boundaries depend on many factors, including the type of policy and how it is implemented, local housing market structure, land ownership patterns, as well as other local land regulations.

An important component of most smart growth policies is land use regulations and restrictions that preserve open space in many different forms, including working agricultural lands, golf courses, greenbelts, forests, various types of wetlands and lakes, and prairie. The evidence from numerous empirical studies overwhelmingly indicates that proximity to all types of open space increases property values (Irwin 2002; Netusil 2005; Nicholls and Crompton 2005). Generally, the closer the property is to the open space, the higher the increase in value. The amount of increase tends to be higher if the open space is known to be permanent, i.e. it will have no future development. The relative scarcity of open space in the local area also affects the value increase. In rural areas with abundant open space, the increase is smaller than in urban and suburban areas where open space is relatively rare (White and Leefers 2007).

One segment of the literature examines the relationship of land use regulation and growth management policies to housing affordability. A comprehensive review of this extensive literature conducted in 2002 by Nelson, Pendall et al, concluded that housing prices are primarily determined by market demand. These authors note the difficulty of generalizing the effect of growth management policies on housing prices due to the wide range of policy language and approaches to implementation. This review also found that traditional zoning and land use regulation such as low density requirements, minimum structure size, and restrictions on multi family housing, can increase housing prices by limiting housing supply.
The authors argue that growth management policies, if carefully written and implemented, can improve the availability of affordable housing, and even if housing prices generally increase, these are often offset by decreases in other living costs such as transportation and energy, as well as an increased quality of life.

Mixed land use zoning that includes shops, offices, homes and apartments within neighborhoods is prominent in many comprehensive smart growth policies that have been adopted. Two studies were reviewed that examined the effect of mixed land uses on property values; both employed hedonic price models. Cervero and Duncan (2004)) analyzed data from Santa Clara County, California, and found that properties in and near areas with multi land use zoning had price premiums over areas zoned exclusively for single family housing. Using data from Washington County, Oregon (in the Portland metro area), Song and Knaap (2004) found that a mix of particular land uses with single family homes increased property values. These particular land uses include parks and “neighborhood scale” commercial areas. They found proximity to large or intense commercial development tended to decrease property values, as did proximity to multi family housing. A key finding was that evenly distributed nonresidential uses increased property values, implying that people value relatively homogenous residential neighborhoods. They conclude that mixed use neighborhoods should be carefully designed so that the uses are compatible and the commercial development is appropriately scaled.

One study merits more detailed discussion. Jaeger and Plantinga (2007), comprehensively examined how Oregon’s land use planning system affected property values. They used property value data collected in Oregon and Washington over intervals from the mid 1960s (before Oregon’s land use planning system was implemented) through the early 2000s.

The major part of the work done by Peter wolf (1974) is devoted to a description of urban land policies and regulations, demonstrating some American cities and Great Britain. He argued that land regulation is necessary to protect critical environmental and cultural areas according to public interest. He suggested that to establish special zoning districts to protect and promote public objectives such as agriculture, conservation, historical preservation, recreation, pedestrian related amenities or other public uses.
Daniels, T.L., R.H. Daniels, and M.B. Lapping. (1986) points out that the tax may even encourage subdivision activity as land is marketed in smaller parcels with higher per acre prices to increase after tax profits. The tax is not a substitute for land-use planning and growth-control ordinances and regulations. And they explained clearly the design of modern land policy is provided by a comparison between the Vermont land gains tax and Henry George's Single Tax. The Single Tax attempts to discourage the long term quasi-monopoly of land ownership, while the Vermont tax seeks to discourage short-run land speculation. The Vermont tax applies only to realize capital gains and tends to reward long-term speculators, while the Single Tax captures unearned increments to land value.

The empirical study related to urban land policy and regulations is put forwarded by Ravindra IAS (1996) has made an attempt about urban land policy in a metropolitan perspective particularly Bangalore. According to him urban land policies give direction to the urban planning process on the one hand and become conditioned by the findings derived from the planning process on the other.

Another wonderful work carried out by David E. Dowall, Giles Clarke (1996) argued that developing countries need to reassess and reform their urban land policies. Because many cities use master plans, zoning, subdivision regulations, building codes and other public policies to shape development. These regulations are normally adopted to help protect the urban and natural environment, but in reality government urban land policies are ineffective and, perhaps more alarming, frequently result in significant adverse impacts on social welfare and economic productivity. Hence according to them a six-step framework for reforming urban land policy has been offered: land market assessments; decentralization of land management authority; deregulation of inappropriate and costly land-use controls; privatization of ineffective public land development agencies; implementing titling, registration and information systems to improve land market efficiency; and alternative planning and budgeting systems for financing infrastructure.

Lungo, Mario (2001) has made a study in Latin America in respect of urban sprawl and land regulation. According to him the development of illegal settlements on
the urban peripheries, outside the limits of urban regulations and largely ignored by both public and private investment.

The studies carried out by A.K. Jain (2008) regarding urban land policies and management reforms, clearly stated the urban land development due to land policies and the equitable distribution of resources on land, infrastructure and housing. The author concludes that spatial planning should merge with the land policy and management reforms so as to allow effective integration of spatial, financial, economic and institutional strategies.

Another work done by Belinda Yuen and Leon Kong (2009) have made an attempt about urban planning and climate change in review of the state of climate change research and policy in Southeast Asia.

Vishal Narain (2009) has made a critical study on the implications of the land acquisition process in a village in the Gurgaon district of Haryana state in northwestern India. According to him policies for land acquisition need to be matched by new programmes for livelihood generation and for the absorption of labour that is displaced by the land acquisition process. There is a need to evolve a system for speedy reimbursements from urban authorities or governments for land acquisitions, and to honour compensation commitments in good time can make processes of urbanization more inclusive and participatory and also suggested that improving transportation and connectivity to the city will be essential for sustaining new peri-urban livelihoods.

2.3 URBAN LAND VALUES

The study of land value has attracted researchers for a longtime. Among the different models a few studies have been possible to use and explain the phenomena of changing land values.

The land values are determined by the location of industrial proximity, and accessibility to central areas Alfred Marshall (1890), Richard M Hurd (1924). Robert M. Haig (1926).

There is another view of land evaluation which is based on the thought that utilisation of land is ultimately determined by the relative efficiencies of various uses in
various locations: Ratcliff (1949) Berry and Garrison (1958), Beckman’s (1959), Alonso (1960); Knos (1962); Yeates and Garner (1971), Khan (1976); McDonald (1979) and (1990) and McMillen (1996), Han and Basuki (2001). The city centre is still the area where highest land value is located. However with the development of sub centres, change has taken place in the land value-distance gradient. Land values toward the sub centers increase with increasing distance from the city centre.

The other perspective to this theme is the demand for land and rent ratio, and the taxation having their influence on the land rent. Rose (1992), Stassmann and Blunt (1994). Ravindra IAS (1996) has made some assumptions regarding theoretical concepts of land use regulations and land value of Bangalore city. He emphasized that the; “Three tier Zonation” of residential areas on the basis of land value and population density. He stated that the upward trend in land values in the city and the variation in the trend associated with locational and socioeconomic characteristics. And Ashna S. Mathema (1999) has made a concept of housing stock and land markets in Kathmandu, Nepal. He observed the positive and negative aspects of basic microeconomic principles of housing markets and government policies on the demand and supply of housing, to understand the policy implications in the housing stock in Kathmandu. He concluded a general overview of the importance of informal housing in today’s urbanizing third-world cities, based primarily on the views of Rakodi, Turner, Dowall and Peattie.

The studies carried out by David E. Dowall and Paavo Monkkonen (2008) about detailed study on land use, population density, and land values in Chennai city. They pointed that de facto policy differences between political jurisdictions have had a significant effect on land prices. They suggest that land policy reforms in Chennai have been successful in reducing some of the sprawling urban development patterns evident in the 1970’s and 1980’s.
2.4 URBAN LAND USE AND LAND COVER CHANGE

The changing modes of theorizing on and modeling land use change are paralleled to two broad streams of changes; first, in the conceptualization of land and land use which are affected by changes or differences in socio-cultural values, technology, economic organization, and magnitude of environmental problems associated with land use change, among others; and, second, changes in the modes of theorizing and modeling in the disciplines of the natural and the social sciences that engage in the study of land use change.

1. The Early Period – George Perkins Marsh and von Thunen

Among the most well known pioneers of the study of land use change are George Perkins Marsh in the U.S.A. and J.H. Von Thunen in Germany. They approached the same issue from different perspectives and in different continents. The former, a (prescient) scholar and diplomat, examined in his seminal book _Man and Nature; or, the Earth as Modified by Human Action_ (Marsh 1965; originally published in 1864) the extent and magnitude of impacts of human actions on the natural environment through the ages in various parts of the world. This study while mainly descriptive, attempted to provide explanations of the environmental transformations observed and recorded as well as prescriptions of man’s position vis-a-vis nature. The issue of land use is central (implicitly, at least) in Marsh’s work as all human activity takes place and modifies space for particular uses. In the words of Kates _et al._ (1990) "The importance of _Man and Nature_ lies less in the individual impacts that it catalogued than in a grouping and wide-ranging synthesis that emphasized their interrelations and traced the innumerable distant effects of human action. The work was cited by many early conservationists and influenced the views of nature-society relationships well beyond Marsh’s native shores. Marsh stressed the breadth and gravity of the unintentional human impacts, and thus the need to understand the complex interactions of natural processes prior to human intervention. Marsh also saw the transformation of the environment, if properly done, as almost entirely desirable….." (Kates _et al._1990, 3).
Somewhat earlier than G.P. Marsh, in 1826, from the other side of the Atlantic, a North German estate owner, J.H. von Thunen, "set for himself the problem of how to determine the most efficient spatial layout of the various crops and other land uses on his estate, and in the process developed a more general model or theory of how rural land uses should be arranged around a market town. The basic principle was that each piece of land should be devoted to the use in which it would yield the highest rent" (Hoover and Giarratani 1984, 142-143). Von Thunen viewed land as an economic resource whose main attribute worth considering was productivity and the landscape within which agricultural activity was taking place was flat and uniform in all directions. His purpose was utilitarian and the analysis of the "optimum" land use patterns static. The mechanism of land use change is implicit and can be derived from the assumptions of the theory; the only variable factor affecting location of a land use (and, presumably, its change) being the value of the associated product. Von Thunen’s agricultural land use theory and model are discussed further in Chapter 3.

The two early studies just described represent the first diametrically opposed approaches to the study of land use change. In the decades that followed, a broad variety of studies covering the whole range between these two extremes appeared but Marsh’s and von Thunen’s legacy marked the two opposing currents along which theorizing on and modeling land use change developed in the 20th century. Marsh’s comprehensive view of land, the natural environment and man’s role in causing environmental change is in the core of a host of nature-society theories and integrated models proposed in the years that followed and that are much in vogue in the present. Von Thunen’s economic, rational man producing economic goods for sale in a uniform, static and orderly landscape whose change is not a central issue founded the theories and models of mainstream urban and regional economics in the 20th century.

2. The First Half of the 20th Century

The first decades of the 20th century saw significant changes in the uses of land brought about by industrialization and urbanization in the western world not to mention by the two world wars and other major socio-economic events and technological
progress. These changes were documented in studies of this period – most of which are not easily accessible, however – as well as in studies conducted in the second half of the century. They refer mostly to countries or geographic regions as well as to uses of land experiencing the most rapid and important changes such as urban areas in Europe and the USA, forests and agricultural areas in Europe, Russia, and the USA (e.g. the American Great Plains), coastal areas such as the Mediterranean basin and so on (see, for example, Braudel 1966, Kates et al. 1990, Bouwer et al. 1991). The most important trait of these studies is the establishment of the systematic and "scientific" analysis of land use change based on theories and models drawn from a variety of scientific fields – mainly, economics, sociology and geography. In fact, this trait is a reflection of a broader and more general development of this period: the emergence and development of dominant modes of theorizing and modeling on land and land use in the related fields of the social sciences: urban and regional economics, urban sociology, economic and social geography.

In the economics-oriented fields, central concepts and theories appeared in this period that relate directly or indirectly to the study of land use change. In 1933, Christaller (1966) formulated the Central Place Theory to offer a theoretical account of the size and distribution of retail establishments within an urban area employing two main concepts: the "range" of a good and the "threshold" for a good. In the 1940s, Losch (1954) used the conceptual framework of Central Place Theory to offer a more general account of the patterns of "central places" in a continuous space that accounted for other urban functions in addition to retailing. Extended to the level of an urban system, Central Place Theory accounts for the size and distribution of settlements within this system. The hexagonal hierarchical patterning of places is the distinguishing characteristic of both Christaller’s and Losch’s (and subsequent) versions of Central Place Theory. It should be noted, however, that these theorists dealt more with location in space rather than with land use per se and this is why the genre of location theory deriving from these founding fathers are not considered in the present contribution. Another concept drawing from concepts of social physics was that of human "interaction in space" (Stewart 1947, Zipf 1949) and the related notion of "accessibility" which was reflected mainly in the variability of
transportation costs from some constant point in space (Haig 1927 cited in Korcelli 1982, p. 98-99). These latter concepts provided the foundations, in the latter half of the 20th century.

In the sociology-oriented fields, the development of the school of "human ecology" by sociologists of the Chicago School in the 1920s has had the greatest impact on the analysis of the land use structure and change of urban (and other) regions in this and subsequent periods (for example, Park et al. 1925, Chorley and Haggett 1967). The principal concepts of human ecology are drawn directly from the field of ecology and they are used to describe and explain the physical patterns observed in an urban region as well as the economic and social processes underlying them. Among them, the notions of "community", "competition", "invasion", "succession", "conflict", "climax equilibrium" constitute central descriptive and explanatory conceptual devices (for definitions of some of these terms see, among others, Johnston et al. 1994). The concepts advanced to describe urban patterns, routinely mentioned in most texts of urban and regional studies and planning, are the "concentric zone" hypothesis (see, among others, Park et al. 1925, Romanos 1976), the "radial sector" theory (Hoyt 1939) and the "multiple nuclei" concept (McKenzie 1933, Harris and Ullman 1945). In the same vein, the notion of "sequent occupance" was proposed to describe the geography of an area as "a succession of stages of human occupance which establishes the genetics of each stage in terms of its predecessors" (Whittlesey 1929 cited in Johnston et al. 1994, 549). A well known application of this notion is Broek’s study of the Santa Clara Valley, California (Broek 1932). The first human ecological studies that appeared in the first half of the 20th century marked the beginning of a long procession of similar studies undertaken in the following decades.

The concepts and theories discussed above share some common characteristics that bear importantly on the analysis of land use change. Firstly, most of them are functionalist approaches to the study of urban and regional structure and change – i.e. they reflect "an epistemological position in which teleological as distinct from causal explanatory forms are stressed" (Cooke 1983, 72). They look for "repeatable and predictable regularities in which form and function can be assumed to be related"
(Bennett and Chorley cited in Johnston et al. 1994, 209). Second, some are predominantly descriptive (mostly the human ecology-based approaches) while some others are normative and prescriptive (Central Place Theory). Land, and space in general, does not have intrinsic properties. It is abstract and amorphous – an isotropic medium with uniform (though unspecified or highly abstract) qualities in all directions within which social and economic processes take place. Population and human activities and the uses of land associated with them are treated as though they do not extend over space but are points on a map. Even the city center is a point – simply, the center of a circle or a hexagon. The emphasis is on the location of human activities in space and on the form of the patterns produced – be they concentric rings or hexagonal market areas. Change in the uses of land – when it is a direct object of analysis in these frameworks – is a mechanistic and predictable response to changes in distance or transport cost, a natural consequence of the functionalism of these approaches.

3. The Other (Last) Half of the 20th Century

The scientific analysis and studies of land use change boomed after World War II along the lines of several of the approaches that had been formulated earlier. The numbers and diversity of extant studies make a complete and comprehensive overview impossible. Even a simple enumeration is difficult. The studies cover the whole range from the local (urban) to the global level. The approaches adopted stem from urban and regional economics, urban and rural sociology, geography and planning as well as from the natural sciences. In addition to the mono-disciplinary, a multitude of interdisciplinary approaches have appeared especially after the 1970s. Hence, this section attempts a selective overview of a vintage of the most important categories of studies the emphasis being on those where land use change is more or less the direct object of analysis.

The proliferation of studies and the particular directions pursued in the analysis of land use change are not unrelated to the broader theoretical and methodological changes in the disciplines that contributed to these studies as well as in the required supporting technology. The most important of them is perhaps the so-called "quantitative revolution" in geography but also in economics, sociology and planning in the 1950s and 1960s.
Formal models and theories of land use and land use change were proposed in that period to be rejected – but not abandoned – later when their limitations became evident and their epistemological foundations were seriously questioned. The parallel progress in computer and data processing technology initially reinforced the quantitative orientation of the studies under consideration. Later on and at present, this technology appears to have an emancipating effect on the analysis of land use change in the sense that it facilitates the application of less quantitative (in the sense of the 50s and 60s), more qualitative and heuristic approaches that are not constrained by the frequently unrealistic assumptions of the earlier quantitative theoretical and modeling formulations.

Deeper changes in the epistemological perspectives of the scientific fields involved in the study of land use change at large have played and are playing also a catalytic role in directing the analysis towards particular paths and approaches as the current (beginning of the 21st century) diversity of land use change studies testifies. Finally, the recent policy interest in the (negative) implications of global environmental change – one component of which is land use change – may be exerting an influence on the orientation of the studies of land use change as practical approaches and decision support instruments are sought to guide policy making for sustainable land use.

The systematic and scientific analysis of land use change that had started in the first half continued in the second half of the 20th century in the same fields as before – urban and regional economics, regional science, sociology, geography and planning – in several of which the related theories and models were moving to or had reached mature stages. Again, land use and its change are not always the direct object of analysis in many fields reflecting the different focus of emphasis on particular aspects and dimensions of spatial change. However, the links to land use change are rather straightforward although not always obvious and explicitly elaborated. In addition, studies of land use change from particular fields of the natural and the applied sciences – forestry, agronomy, biology, ecology, remote sensing, environmental sciences – are not uncommon as well as studies attempting interdisciplinary approaches to the subject. Three main bundles of studies are presented below. The first originates in the economics-oriented fields such as urban and regional economics and the relevant subfields of regional science, geography and urban
and regional planning. The second bundle draws from the sociology-oriented fields like urban and rural sociology and the relevant subfields of regional science, geography and urban and regional planning. A third bundle contains a multifarious collection of studies originating in the same fields as before but bearing the influence of the natural sciences and opting for integrated analysis of land use change.

The economics-oriented fields generated impressive numbers of theoretical, modeling and empirical studies of urban and regional spatial structure in the post war years. Broadly, they can be divided into those concerned with the urban and intra-urban spatial (economic) structure and those referring to larger than the regional scale areas. Most of the studies that explicitly account for land use change belong to the first group, the land-using activities more frequently analyzed being residential, commercial, transportation and, to a lesser extent, public and other services. A major stream of research is founded on neo-classical economics informed by spatial concepts; mainly the "friction of space" as measured by the distance among the location of activities. Alonso’s (1964) urban land market theory and model (borrowing concepts from von Thunen’s analysis) is considered the landmark study from which a series of urban economic models followed sharing a common characteristic: the description and explanation of urban spatial structure based on land rent and transportation costs and the assumption of utility maximizing individuals. For a selection of theories and models in this direction the reader is referred to Nijkamp (1986). In a related spirit, the 1960s saw applications of Central Place Theory to the location of retail centers, among others (Berry 1967). Another major stream of studies developed in the 1970s around the notions of spatial interaction and accessibility – already introduced in the 1940s and even earlier. It provided a theoretical framework as well as a "family of spatial interaction models" (Wilson 1974) to account for the location and allocation of activities in space taking into account the transportation network. Integrated land use-transportation models were built also to account for the simultaneity of changes in land use and accessibility (Putman 1983, Wegener 1986). Several variants of these models have appeared each attempting to relax the unrealistic and introduce more plausible assumptions regarding spatial economic behavior in space (for a review of such attempts, see, for example, Batten and Boyce 1986).
In a macro-economic perspective, regional equilibrium and disequilibrium theories and models, among others, developed in this period, too, to describe and explain processes of regional change (growth or decline) but their treatment of land uses is abstract and vague at best. The theoretical and analytical framework of general equilibrium and neo-classical welfare analysis has been employed to produce Pareto optimal solutions to social welfare maximization problems where land is one of the production factors together with labor and capital (for example, Cooke 1983, Andersson and Kuenne 1986, Clark and van Lirerop 1986, Miyao 1986, Takayama and Labys 1986, Fischer et al. 1996a). Finally, empirical analyses of land use changes in urban and rural areas were conducted responding, more or less, to pressing problems such as urban decline, rural-urban land conversion (especially on the fringe areas of metropolitan regions), urban sprawl, etc. (see, for example, McDonald 1984, Simon and Sudman 1982). These have a more practical orientation focusing on detailed typologies of land uses that capture the qualitative, and not only the quantitative, intricacies of land use change (for example, Bourne 1978).

The economics-oriented analyses of land use change share common traits the most important of which is the emphasis placed on the price mechanism (land and transportation costs) as the principal determinant of the location of human activities in space. They are functionalist, quantitative, sometimes highly mathematical, approaches relying on frequently very restrictive assumptions with respect to the nature of land, land use, land use change as well as the characteristics and preferences of the users of space. They attempt both to describe (directly or indirectly) land use patterns and their changes as well as to prescribe optimal land use configurations that satisfy set goals.

The sociology-oriented fields continued the tradition of human ecology developed in the first half of the 20th century producing quantitative, empirical studies of urban spatial and social structure especially in the 1960s and 1970s. Starting with the theory and technique of social area analysis and later moving to the more sophisticated inductive techniques of factorial ecology (Johnston et al. 1994, 558), studies of land use and its change focused on such variables as socio-economic, family, and ethnic status to provide explanations for observed differences in the location of particular activities – mainly,
residential areas occupied by groups of varying socio-economic traits. The characteristic of human ecological studies of this period is best summarized in Johnston et al. (1994): "Later systematizers of sociological human ecology, such as Hawley (1950, 1986), have tended to play down the spatial focus of the Chicago School…..in favor of an emphasis on the demographic and institutional dimensions of society (Saunders 1981) although at the same time they have shown a strengthened interest in human interaction with the physical environment" (Johnston et al. 1994, 258). In fact, most sociological analyses see the urban spatial structure as an expression of the underlying social structure and the associated processes (for example, Suttles 1975, Korcelli 1982).

Within the broader realm of sociology-oriented studies of land use change, two particular approaches have developed: the behavioral and the institutional. The first attempts to describe and explain land use patterns as a function of factors influencing human behavior and decision making and focuses on human activity systems (see, for example, Chapin 1968, Chapin and Kaiser 1979, Korcelli 1982, Johnston 1982, Webber 1964a). A idealistic variation of this approach emphasizes the ways people perceive and experience the world around them and act correspondingly (Tuan 1975, 1976, Hugill 1975, Butttimer 1976 cited in Johnston 1982). The second (also called "radical" or "structuralist ") places emphasis on the constraints imposed on human behavior by societal institutions in the effort to explain spatial patterns in urban and other areas. The central concept of this approach is "power", especially economic power, and a correlate concept is ‘conflict’, usually between unequals, or class conflict (Johnston 1982).

These latter approaches belong to a long repertoire of approaches developed in the 1970s and beyond when geography and planning showed an interest in and were heavily influenced by social theory. Developed frequently as attacks on the empiricism and positivism characterizing most post-war descriptions and explanations of spatial structure and change, alternative approaches appeared that offered explanations of social and spatial phenomena drawing from diverse philosophical and epistemological positions. Historical materialism provided a framework within which patterns of spatial and environmental change are explained as the result of the specific social relations of the capitalist or other modes of production (see, among many others, Harvey 1973, 1985; for
an application to land use change, see, Hecht and Cockburn 1990). Structuralist approaches sought for the truth beneath the surface of the "facts" and the "taken-for-granted" categories by means of which social life was usually comprehended (Johnston et al. 1994, 599). Realist perspectives oriented themselves towards the identification of the causal mechanisms underlying specific (social and spatial) structures which occur under specific (contingent) conditions (see, for example, Sayer 1982, 1985b). Giddens’ "structuration theory" sought to explore the time-space constitution of social life (see, for example, Giddens 1984). Symbolic interactionism emphasized the social construction of reality while phenomenology stressed the individuals’ experiences of the world in a more or less similar fashion as existentialism which stressed the centrality of the human subject’s existential being in the world (see, for example, Berger and Luckmann 1967, Relph 1976, Buttimer 1974). Ethnomethodology has taken an even more extreme stance emphasizing the unique and the idiographic and rejecting any attempt at generalizations (Johnston et al. 1994, 175).

A striking characteristic of all these sociology-oriented approaches which deal, in one way or another, with space, spatial structure, spatial and social relations is that they treat space and the human subjects that exist within it and interact with it in an abstract fashion; i.e. they make no explicit reference to actual land use and its changes within the context of the causal social relations studied. Moreover, frequently they lack spatial and temporal explicitness and concreteness even when they refer to the urban, regional or international level and when they deal with real world applications. In addition, several of these approaches apply to particular socio-political and cultural settings and they cannot be transferred easily and without violating their very assumptions to other contexts. Overall, in their present form and orientation, they can inform the analysis of land use change very little in practical terms.

Besides economics-oriented and sociology-oriented, a host of other approaches to the study of land use and its change borrowing from ideas and concepts of the past developed in the second half of the 20th century. They combine elements of both the natural and the social sciences and they are based, broadly, on the notion of ecological equilibrium which attributes changes in a region to changes in the dynamic interaction of
four sets of factors: population, resources, technology and institutions (see, for example, Coccossis 1991, Meyer and Turner 1996). Although not directly concerned with land use change, Ian McHarg’s (1969) ecological method for land use and landscape planning is worth noting here. On the one hand, it bears the influence of past streams of thought on the man-environment relationship and, on the other, it has marked, in its turn, the way of thinking about the relationship between human activities and nature and of planning for their harmonious symbiosis. The ecological method he had advocated was an appeal to consider the life processes as constraints and opportunities for land use planning. His was a holistic approach as the following statement reveals: "The social value of a given environment is an amalgam of the place, the people, and their technology. People in a given place with opportunities afforded by the environment for practicing a means of production, will develop characteristic perceptions and institutions. These institutions will have perceptions and values that feed back to an understanding of the environment and that have a modification of technology" (McHarg 1979, 14).

Ecosystem-based theoretical approaches and integrated environment-economy-society models became widespread in the last half of the 20th century and especially after the 1970s. The broader climate of this period is marked by the growing appreciation of and concern about the environment in policy and academic circles as well as and among laypersons which created a demand for approaches and tools of analysis of the related problems. Land use and its changes came to be recognized as important elements of the broader nature-society system and non-trivial contributors to global environmental change whose study was a prerequisite for taking action (see, for example, Slocombe 1993, Lutz 1994, Fischer et al. 1996a, Manning 1988, 1991). What distinguishes these approaches from the previous two groups is the treatment of land and land use as having intrinsic and variable environmental (and not only economic and socio-cultural) properties, attributes and capabilities that influence and are influenced by human activities and actions. Hence, land use change is analyzed within a meaningful setting of nature-society interactions which appears to be more promising in handling policy and decision making issues in an integrated manner than the more uni-dimensional approaches discussed before which focus on only one dimension of the subject.
In addition to theoretical and methodological studies, a host of empirical studies have been and are undertaken at both the international and lower levels to identify and record changes in major uses of land, mostly when and where these changes have grave ecological (and economic) consequences as in agricultural, forest, and urban areas. Turner et al. (1990) and Meyer and Turner (1994) provide historical accounts of global studies and present the current trends in this perspective. Besides global level assessments of land use changes, land use change research in individual countries has provided stock taking of major land use changes on a variety of spatial scales as input to both research and policy activities (see, for example, Brouwer 1991, Jongman 1995, CLAUDE 1996). Technological progress in the domain of (spatial) data management and remote sensing has spurred major projects on observing and recording land use changes. Powerful earth observation systems covering the globe (e.g. those utilized in programs such as GCOS, GCTE, GOOS, GTOS, LANES, TREES to name but a few) together with advanced spatial data management systems (mainly, Geographical Information Systems) offer the possibility to monitor and map land cover (not land use necessarily) changes at very disaggregate levels of spatial and temporal resolution. In addition, they facilitate data storing and processing for use in various contexts such as in scientific research, policy making, and implementation of related programs (see, for example, Liverman et al. 1998). Technology is a significant – but not the sole and most important – contributor to the comprehensive and timely analysis of land use change and the fast dissemination of the information and knowledge produced. Despite the more impressive outputs it can produce, such as fancy and colorful satellite images and maps, it will never become a substitute for theoretically informed and methodologically sound analyses of land use change.

4. The New Millennium

Standing at the doorstep of the new millennium, it is natural to ask where the study of land use change is now and to where it is heading (or, to where it should head). This section takes a brief look at the current status of outlook, theorizing, modeling, tools, and initiatives on the subject based on the foregoing presentation.
In the last decade of the second millennium, the 1990s, the study of land use change could be no exception to the sweeping impact of the Brundtland report and the sustainable development movement. An almost universal concern with global environmental change had already gained ground also and had spurred a large number of research and policy initiatives around the globe especially after the Rio Summit of 1992. Examples include the research initiatives of IGBP, IHDP, the FAO, the European Environment Agency (EEA) as well as the UN Conventions on Climate Change (UNCCC), Desertification (UNCCD), and so on. Land use change was soon recognized as a significant component of the global environmental system as "the lands of the earth bear the most visible, if not necessarily the most profound, imprints of humankind’s actions" (Kates et al. 1990, 6) and specific research initiatives, such as LUCC, were formed. At the same time, the scientific fields contributing to the analysis of land use change had matured more or less in terms of theories, models and tools (technology). Interdisciplinary research was undertaken both within broad scientific realms (e.g. the environmental sciences) as well as between scientific realms on the society-environment interface as it was beyond question that the answers to almost all environmental and social problems could not be provided within the narrow confines of any discipline.

As a result of these developments, among many others, the outlook on the subject has broadened and the approaches advanced are more holistic than they were in the past. Despite the persistence and inertia of strong disciplinary boundaries, new forms of scientific cooperation are promoted under the call for "transdisciplinarity". A return to the view of land as a multi-faceted resource and of land use as the wise manipulation and stewardship of this resource is encouragingly visible, echoing the legacy of the past, although it cannot be claimed that it is the dominant view yet.

In fact, it may be difficult to speak of a dominant view and approach on the subject as, at the time of this writing, at least the economics-oriented and the natural-sciences-oriented fields as well as the interdisciplinary research orientation are raising strong voices and claims with respect to theories and models. Only the sociology-oriented fields are still lagging behind despite the strides they are making recently on the subject of land use change. The result of this imbalance is that, from the epistemological point of
view, most approaches to the analysis of land use change move, more or less, along empiricist and positivist lines (remote-sensing and GIS applications, integrated models, the neo-classical economic welfare maximization approach). The critique and alternative views to this epistemology which developed in particular disciplines of the social sciences have not found their way yet into the practical analysis of land use change where they may have potentially a beneficial impact in contributing to the development of more socially-informed and responsive theoretical schemata.

Studies of land use change cover the whole spectrum from the global to the local. But, in most cases, studies at particular spatial levels are usually conducted in isolation from one another and, frequently, they fall within the purview of particular disciplines (e.g. urban economics, geography, environmental sciences, forestry, etc.). This kind of scientific segregation inhibits the exchange of concepts, theories, tools, and results among spatial levels. Global level land use change studies have received greater publicity compared to the other levels given the stronger interest, in general, in global environmental change and the requirements of global policies such as UNCCC and UNCCD. It is recognized, however, that many of the global impacts of land use change result mostly from the many, incremental local level decisions and actions of the actual users of land. Hence, the heightened recent interest on integration – among spatial scales, of local with regional and global level analyses, of urban with rural analyses. Integrated analysis is a relatively under-researched area in most disciplines given, among others, the problems with integrating/synthesizing theoretical and methodological frames of analysis from different disciplines as well as the more mundane but hoary "data problem". Judging from the LUCC Implementation Strategy (LUCC 1999), however, it seems that future studies of land use change will be increasingly characterized by integrated, interdisciplinary approaches to address the issues associated with the management of land use change. This task is expected to be facilitated greatly by further advances in the systems of data collection, compilation and management assuming that the currently high costs and long times associated with the provision of the required data will be reduced to reasonable levels.
A Land use study has greater importance in the changing world because land uses have change through time. In the early 1960 some discussion has involved about land uses in relatively large urban areas. Those studies like Chauncy Harris and Edward Ullman (1945) reported that residential and other public land uses have increased both to total area and to developed land. Industrial and commercial uses have declined because of developed land.

Shahab Fazal (2000) was strongly emphasized on the loss of agricultural land to urban expansion in Saharanpur City between 1988 and 1998 with remote sensing techniques. He found that the agricultural land losses in the city was due to the increased non agricultural land uses and according to him urbanization was play a major role in terms of reducing the supply of high quality agricultural land in the developing countries.

Through his empirical work carried out by Robert Walker (2004) on land use and land cover change and destruction of tropical forest in the Amazon basin.

O. Fabiyi Oluseyi (2006) on urban land use change analysis, modern techniques used to find out urban land classes. He identified urban temporal changes in a typical traditional settlement in Ibadan –Nigeria and concluded that the potential of GIS and remote sensing techniques in measuring change pattern of urban land use even in traditional unplanned settlements.

Victor Tamba Simbay Kabba and Jiangfeng Li (2011) have also made land use and land cover studies and their ecological effects in Wuhan (1987-2005) using remote sensing techniques. They found that urban land use increased throughout the study period. Wuhan’s strategic position in central China, and special privileges accorded by the central government accelerated economic growth that led to loss of its arable land. This too resulted in changes in its landscape structure and composition, as evidenced by variability (between the time periods) in the metrics.
2.5 LAND USE THEORIES AND MODELS

Land use theories and models were developed in the early 19th century. Von Thunen (1826) is the first person who had an economic theory based on agricultural land use patterns in Germany. He made an agricultural land use model with zoning which is enriching with Central Business District. In later years the Burgess (1925) concentric model was the first among the land use models in terms of spatial patterns at the urban level. He analyzed the social classes and recognized that transportation and mobility were important factors behind the spatial organization of urban areas. Sector and multiple nuclei land use models were developed by (Hoyt, 1939), (Harris and Ullman, 1945) respectively. Both models analysed the implications of transportation on the urban spatial structure. Later on there was an attempt to include the concentric, sector and nuclei behavior of different processes in explaining urban land use by Hybrid models. Thus, hybrid models, such as developed by Isard (1955), considered that concentric effect of central locations (CBDs and sub-centers) and the radial effect of transport axis, all overlain to form a land use pattern. These hybrid models are explained the evolution of the urban spatial structure.

Another urban land use models where carried out by Chisholm (1962) and Hall (1966) are put emphasis on economic space and rent differences of city size.

2.6 MASTER PLAN AND ECOLOGICAL SUSTAINABILITY

In an urban area master plan preparation and implementation process by taking examples of master plans of Delhi, Kolkata and Mumbai with a view to find out constraints of master planning system was determined by Meshram D.S. (2005): There is a possibility of achieving interface between CDP and master plan by Meshram D.S. (2006): The ecological sustainable landscape was developed by Jolande.W. Termorshuizen, Paul Opdama, Adri van den Brink (2006): There is another view of ecological sustainability which is based on the thought that unplanned peri urban areas put adverse effect on city sustainability Supriya Vyas and Ashutosh Sharma (2009): and the emerging trend of urban green spaces of Malaysian cities and its implications for safeguarding the biodiversity Johari, (2007); Hussein, (2006); Mazlina and Ismail,

2.7 LAND ACQUISITION UNDER ULC’S ACT AND LAND USE PLANNING

Rants Naidu (1976): primarily focuses upon the urban land ceiling act and development of social infrastructure in Hyderabad and observed that urban land ceiling act and Master Plan both have given better direction to the Hyderabad city in terms ecological balance.

L.C.Gupta (1994): He studied on post-distribution evaluation of ceiling surplus land in Rajasthan with a view to assessing the usefulness and viability of the distribution using statistical techniques.

Kotaka (2002), asserted that adequate compensation must complies three situations: the affected landowners are being paid all the losses incurred as agreed during a harmonised negotiation (or hearing) as it happened in sale transaction; payment is made considering physical factor and no sentimental value is taken into account and; the date of valuation is going to be the date of its first proposal to acquire the land and not when it has been actually acquired.

Nipun Vaid (2006): He mainly focused on the ceiling act and impact on housing.

The studies carried out by Ismail Omar, Mazlan Ismail (2009) regarding the economic of land acquisition. They clearly examined that redefine the adequate amount of compensation from landowners, valuers and administrators viewpoints using Kotaka’s Model with special application in Malaysia.

2.8 ZONING AND BUILDING BYELAWS

M Subash Chandira (2007): has made an attempt on comprehensive discussion on development control rules and building byelaws of Tamilnadu. The author provides a critical commentary on the planning and other related statutes, and assesses their impact in controlling and regulating unauthorized constructions and misuse of premises. The author proposes - consolidation of all related organizations under the control of an
umbrella organization for effective implementation of building byelaws and regulation of development control rules.

Elizabeth Philip (2007): The author argues that there is a need for evolving special regulations for urban core area rejuvenation, for heritage zones and coastal and island zones in Kochi. By incorporating provisions for TDR, plot reconstitution, and other such techniques, the government should modify the existing Town Planning Act in Kerala. It is also proposed that capacity building of enforcement agencies should be undertaken. In metropolitan areas like Kochi, there is a need for creation of Metropolitan Planning Committee as envisaged in the Constitution of India. Development authorities could function as the technical arm of the MPCs for formulating and implementing long term plans as the metropolitan areas.

An interesting study on building byelaws carried out by K. B. Vaghani, Dr. N. C. Shah and Dr. Krupesh A Chauhan (2010) revealed that impact of byelaws on housing for Jaipur and Pune cities based on detailed study on policy aspect with different kinds housing such as detached bungalows, duplex bungalows and row houses.

2.9 SLUM IMPROVEMENT AND CLEARANCE ACT AND URBAN DEVELOPMENT

Nihar Ranjan Rout (2008): He identified that the growth of slums in Bhubaneswar using systematic sampling technique. According to him uneven development of economy in capitalism people migrated different parts of India for search of livelihood. Hence they do not hesitate to work or live in the worst conditions. This leads to enormous problems which are related to civic facilities, social and occupational problems. Therefore, he suggested that the policy makers are to facilitate the types of movement that are most likely to lead to alleviation of poverty, while protecting the slum-dwellers from abuse and exploitation.

Florence Dafe (2009): has made a study about political economy of the continued existence of slums in Nairobi and examined the nature of political patronage, rent-seeking problems in the land, housing and services sector in Nairobi’s slums.
Masoumeh Bagheri, Farzin Hatami Kahkesh and Bahram Nikbakhesh (2011): They gave importance to the policies and strategies for improving slums specially Mallashia slum area and studied socio-economic conditions & sanitation facility of the slums using multi-criteria analysis and they gave importance to the infrastructure improvements in order to find out the health and mental conditions of the urban slums.

2.10 URBAN RENEWAL MISSION

The concept of urban renewal has defined by several researches according to their point of view. In Eurocities (1996) it is noted that urban renewal is about the sustainable development of cities which is holistic in approach, and targeted at economic and cultural redevelopment, social cohesion and physical rehabilitation of cities. Roberts and Sykes (2000) state that ‘Urban renewal can be defined as a comprehensive and integrated vision and action which leads to the resolution of urban problems and which seeks to bring about a lasting improvement in the economic, physical, social and environmental conditions of an area that has been subject to change’.

A.K. Jain (2004) has described about the regeneration and renewal of old Delhi. He found that rich heritage in old Delhi is dying due to increasing trade and commerce. Hence He concluded that there is a need usually conflicting with the accelerating demographic demands and socio-economic pressures. A sensitive approach to planning, with policy departures concretized on the lessons of the last four decades can resolve this conflict.

Ashok Kumar (2005) discussed the prominent trends of privatization of urban planning and centralization of governance with a particular focus on how privatization and centralization is being achieved by central as well as state governments by following exclusionary policy framing strategies even when loud claims for decentralization of planning and governance by elected urban local bodies are being made. The author examined the issue of privatization of urban planning by closely examining the policy framing processes of Special Economic Zones, and City Development Plans apart from the development of townships by the private builders and the JNNURM in general.
H.S. Kumara. (2008): He focused on those areas that are important from a policy point of view and speedy implementation of urban infrastructure projects like “Jawaharlal Nehru National Urban Renewal Mission” [JNNURM]. He reviews the trends of the urban growth, infrastructure crises, fast track, parallel processing, overcoming the hurdles with reference to the Mysore urban area. Because of increasing population growth. It would attract not only private sector investment but also public sector investments for infrastructure facilities through JNNURM programme. He suggested that unless and until the speedy implementation of urban infrastructure projects, being a heritage city Mysore will not see the changes in future.

Rui Li (2008) has carried out a study on urban heritage conservation under urban renewal in Hankou historical district in Wuhan, China. A GIS-based conceptual model designed for urban heritage conservation which integrates three parts: one is for Urban Heritage Inventory; another is for Urban Visual Management, and the other is for Evaluation of Historical District Renewal. Following the designation of conceptual model, a case of Hankou Historical District in Wuhan, China is applied to show the application result of the GIS conceptual model.

The pioneer works done Indian cities are Onkar Preeti, Dhote Kumar Krishna, Sharma Ashutosh (2008) who has given an ideal frame work of urban renewal in the Indian context. They examined that planning in India has followed the western role models of technocratic planning. Technocratic planning is now obsolete, and that planning tools have not been able to contain growth in sustainable ways. In India there is an amazing amalgamation of infrastructure from several centuries in the form of haphazardly built layers of urban fabric under which the common urbanite of India feels suffocated and crushed. Unlike their western counterparts the Indian urban settlements never had the fortune (or the misfortune) of being reduced as ruins of war and thereby necessitating the need for fresh development and renewal.