Urban land use refers to the physical and functional structure of land occupancy of towns and cities. It involves the study of layout pattern of internal structure, street pattern, alignment and architecture of buildings, densities and the different functions of the city. Cities are always developed and transformed through the interaction between the different socio-cultural, political, economic and technological forces. Hence, these forces create the urban land use and its pattern in the city. Urban geography is studied with three dimensions: histogenesis and evolution, land use and morphology, and urban planning. The urban land is a base for the development of the modern society. Cities are distinctive spatial units of the people, their activities and the institutions. The present urban society is facing the problem of increasing population pressure on the urban space. In the developing country like India, this problem can be observed in the form uncontrolled development in urban space. The occupancy of the land by man changes dynamically in space and time. This requires a scientific analysis of the urban land use, so that the land resources may be utilized efficiently for a sustainability of the future and smart city.

Maunath Bhanjan City (25°54’21” N - 25°59’08” N & 83°30’16” E - 83°35’44” E) is located in the fertile alluvial land of southern (right) bank of river Tons or Tamsa or Chhoti Sarju (a tributary of river Ganga) in the heart of the triangle constituted by joining the Azamgarh, Ballia and Ghazipur district in the eastern Uttar Pradesh. It lies on the main urban axis of major handicraft, industrial and commercial centres on Gorakhpur-Mau-Azamgarh-Shahganj-Allahabad and Varanasi-Mau-Bhatani-Gorakhpur/Chhapra northern and north-east railways and on the crossing point of NH-29 (National Highway) and SH-34 (State Highway) roads as well as main Gorakhpur-Mau-Varanasi-Mumbai railway route. The city has well developed transport network and is connected with roads and railways from different part of the country. It lies 375 km from the south-east of state capital Lucknow, 96 km north-east of Varanasi, 44 km east of zonal headquarter Azamgarh, 110 km south of Gorakhpur and 72 km west of Ballia. Physically also, its situation is of considerable significance as it has grown on a ridge top of southern (right) bank of river Tons in middle Ganga plain at average elevation of 84.50 metres and relief of the city is generally alluvial plain. The city, a district headquarter and a major handicraft and other industrial units, is an important place among urban centres of the state. The city has been an important centre of cotton textile both as manufacturing and handloom as well as power-loom in Eastern Uttar Pradesh. The surrounding region of the city has well developed as agro-based industries.

The present municipal board (Nagar Palika Parisad) of Maunath Bhanjan city is 49.17 km² (Master Plan, 2003). The city extends from Bakhtawar Gunj in the north-west and Bhujauti in the north, Baharipur and Tajpur in the south along Gorakhpur-Ghaziipur-
Varanasi National Highway-29; and from Rastipur and Musardah in the east to Achhar and Haqiqatpur in the west. The shape of the city is almost irregular, with a tongue-like projection towards the southwest. The city is divided into 36 municipal wards.

Population growth of Maunath Bhanjan city (2,78,745 persons) is very high (31.08%) as comparatively adjacent cities like Ghazipur (1,21,020 persons), Azamgarh (1,10,983 persons) and Ballia (1,04,424 persons) which is low in current census year (2011). The percentage increase in population is 17.16, 18.67 and 2.92, respectively, because of the city is significant for cotton textile and handicrafts as well as other industrial units in the recent past. It is typically significant to note that this city is dominated and settled by minorities (specially Muslims) consisting of about 58 percent population (UIDSSMT, 2010) in 2001 (2,12,657 persons) which reached third in the rank of the State of Uttar Pradesh after Sambhal (Moradabad) (77%) and Rampur (71%). The old part of the city is highly concentrated by Muslims in the Chowk as well as south and south-west of the city. In India, its rank is 11th as a minority’s city. Therefore, it is selected to study for the urban research.

(c) Statement of Problems

During the field survey, the following problems have been identified in my study -

1. The physical growth and development is haphazard and uncontrolled in the city. This poses serious problems related to urban and functional structure of land occupancy of the city.

2. The land use of the city, as unplanned residential and commercial building emerging in the present form, is not showing any good sign for the future development. They are basically under control of the nexus of powerful businessman, politicians, anti-social elements and contractors.

3. The cotton textiles and handicrafts as well as other industrial units need thorough revival. They are facing multitude of problems and poor local governance and weak finance. The most vital of them is the problem of capital.

4. The government authorities have failed to provide basic infrastructure, public, semi-public, and recreational, traffic congestion and facilities to the people. The sewerage, drainage facilities and solid waste management have been neglected and do not follow the standard norms.

(d) Research Questions

Some of the basic questions which seeks the answer are following-

1. To what extent the land use of the city is emerging in right direction and function and facilities have influenced the morphology of the city?

2. Why the government authorities have failed to provide even basic desired infrastructures and facilities to the people?

3. What socio-economic, politico-cultural, and technological forces have caused the exiting land use of the city?
4. What improvements are needed in the planning for a sustainability of the future development of the city?

5. To what extent the use of Remote Sensing (RS) and Geographical Information System (GIS) affects the human decision and behaviour so that a positive approach towards development may be taken?

(e) Objectives of Research

The major objectives of the research are following -

1. To examine the evolution of urban landscape of the city in spatio-temporal context.

2. To analyse the urban growth, land use and the significant change in urban development of the city.

3. To analyse the spatial variation in different urban land uses, i.e., residential, commercial, industrial and other infrastructural, public and semi-public land use.

4. To find out the land use and its impact on urban functional morphology.

5. To critically examine the planning efforts taken by the civil authorities/ ULBs (Urban local Bodies) proposal for a viable plan to sustain the urban life of Maunath Bhanjan city.

(f) Research Hypotheses

The following hypotheses have been formulated:

1. The urban land use and its structure need the requirement of the people than anything else.

2. Urban morphology reflects the imprints of land use and its development.

The researcher has used both quantitative and qualitative methodologies in the present research work. The work based on both primary and secondary data sources, specially collected through the vast literature available on Maunath Bhanjan and Azamgarh from different secondary sources as well as through personal meetings with learned scholars, administrators and many prominent personalities from different field likes historians, geographers, poets, bureaucrats, social workers, lawyers, industrialists, businessmen, writers, press and media personalities, priests, politicians, engineers, doctors and the most valuable of them local people. This researcher also used retrospective interview to reconstruct the past, asking informants to recall personal historical information. The researcher used Google Earth Satellite imagery (2013) in the research work. The imagery eye altitudes of 512 metres, elevations of 79 metres and, horizontal and vertical scale of 100 metres (Imagery date 22.02.2013). Then mosaiced manual on Adobe Photoshop CS4 in two part (first part-510 slides and second part 483 slides) of study area. These two part of Google Earth Satellite imagery at 1 metre resolution was also been mosaiced on Arc GIS 9.3 software. During the vast and intensive field work, the researcher got the printouts of the Google Earth Satellite imagery on fabric.
paper (4.5 x 4.5 feet) and demarcation of existing land uses, along the major roads as well as lanes to access and examines various components of land use. They were handy to mark the features in the city. The job was hectic, but after successful survey it also gave a photographic memory of the study area to this researcher which would be never wipe out. The digitized map (Image on Arc GIS 9.3 version) of land use was prepared with the help of Maunath Bhanjan City – Town & Village Planning Department, U.P., Azamgarh Divisional Planning Sector (Published, 2003 in Master plan – 2021). It was geo-referenced with the help of the toposheet no. 63 O/9. The thematic maps (populations and infrastructures) were prepared on Arc GIS 9.3 software. The map was digitized on Arc GIS 9.3 software and exported to calculate the areas of the respective land use categories which were polygon features and their final layout on M S Power Point 2007, typing the manuscript in M S Word 2007, which was done by the researcher himself.

The present study comprises of eight chapters. Chapter first, **Concepts, Research Methodology and Study Area** deals with the concepts of urban, urban land use, urban morphology and research methodology including statement of problems, research questions, objectives, research design and tools and techniques with a brief review of literature and introduction of study area have been done. Second chapter, **Population Growth and Characteristics** consists of population growth and projection, population distribution and density as well as population characteristics. The population data has been available for the city ever since 1872 (Census of India) when its population was 11,315 persons. The population growth has been analyzed and plotted graphically which also gives the projection for the next three decades. Since boundaries of the administrative wards have been same from 1881 - 1941 (106 ha), while it was changing in each census from 1951 to 2011 (except 1971). Therefore, the entire census data have been analyzed in the tabular form (1872 – 2011) and all the maps have been prepared based on the census data of 2001 and 2011. Chapter third is devoted to **Evolution of Urban Landscape**, where different phases of urban growth and evolution have been explained. Its deals with the nomenclature, histogenesis and origin, evolution of urban landscape and spatial urban expansion of existing city. This chapter focuses on the growth of the city in both spatial (space) and time frames. The fourth chapter analyses the **Land Use and its Change**. This chapter has been provided to study the land use categories of Maunath Bhanjan city which has been demarcated on the basis of intensive field work with the help of Google Earth Satellite imagery. The characteristics of land use and its change are comprised of residential, commercial, industrial, public and semi-public like administrative and other uses including transport, electricity, educational and also other land uses like, recreational, cremation and burial ground, and byre (Goshala) and animal shed which are developed in the city. The first hypothesis, which deals with urban land use and its structure emphasizing the requirement of the people, is clearly dealt with the analyses of land use and its change due to creation of new district and increasing population pressure in the city. This chapter is devoted to interpret and explain these issues very much in the city. In chapter fifth, analysis has been done of the **Residential and Commercial Land Uses**, which deals with the spatial characteristics of residential land use with high, medium and low density and spatial characteristics of commercial land use in the inner
part, middle part and outer part as well as new commercial establishments and shopping malls of the city with brief discussion. The sixth chapter deals with Industrial, Infrastructural and other Land Uses. The spatial characteristics of industrial land use have been discussed to explain small and small scale industries, textile industries, i.e., handlooms and power-looms as well as industrial estate and industrial area. The infrastructural land use, i.e., transport, electricity and water supply and sewage; and land under public uses such as administrative, educational, health and cultural land use of the city, have been dealt in detail with other land uses. Chapter seven covers the Morphology and its Development of the city. The characteristics of urban morphology as well as functional morphology have been analyzed to the extent in the form of different land uses: residential, commercial, industrial, administrative and area under other public uses to ascertain the formation of morphology of the city. The spatio-temporal development of urban morphology have been explained as urban growth and multiple nuclei growth during the various phases. The qualitative assessment of the second hypothesis has been observed in analyzing the morphological interpretation of Maunath Bhanjan city which clearly indicates that ‘urban morphology reflects the imprints of land use and its development’. Finally, in eighth chapter, Land Use: Problems and Planning has been discussed in which after evaluating the different developmental problems and issues as well as marking the characteristics of Master Plan (2021). A land use plan has been suggested with recommendations for 2031 A.D. A summary followed by a selected bibliography have been given at the end of the work. A few photographs have been provided at different suitable places in order to illustrate the work.

This is the first work in urban geography dealing with urban land use and morphology of the Maunath Bhanjan city. The present work has not been done by any other researcher for which a proper training in Advance Diploma in Computer Application (ADCA), Desk Top Publishing (DTP), digital map making and Arc GIS have been done. This is the first work after training. No study can be successfully outlined unless there is availability of the requisites, i.e., maps, Google Earth Satellite imageries, data, photographs, computer software, Arc GIS software, etc. The collections of these requisites have been tiring and tedious. There can be mistake and discrepancy in the work. If there is any mistake and discrepancy anywhere in this work, the researcher is solely responsible for that, nobody else is responsible. However, every possible pain has been undertaken to compile the information and record whatsoever available in a systematic and geographical framework. It also leaves many unanswered questions. It is hoped that the study would stimulate the planners, academicians, scholars as well as the local people to think for the sustainable development of the city.

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