

STUDY OF LAND USE CHANGE DETECTION IN FARIDABAD: A GEOGRAPHICAL APPROACH

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Abstract

Urban land cover/land utilize changes are exceptionally unique in nature and must be observed at normal interims for sustainable condition development. Remote Sensing data is exceptionally helpful on account of its succinct view, dull scope and ongoing data securing. The advanced data in type of satellite symbolisms, along these lines, empower to precisely register different land cover/land utilize classifications and aides in keeping up the spatial data infrastructure (SDI) which is exceptionally basic for observing urban extension and change recognitions ponders. As it were, the remote sensing satellite data in multi determination and multispectral intends to give spatial data to land cover/land use at various levels for different perspectives as developed land, horticultural land, forests, wastelands and water bodies and so forth. In this way, the land cover/land utilize maps arranged utilizing multi date and multispectral data gives distinctive levels of spatial data which are utilized as a part of progress identification thinks about.

1. INTRODUCTION

The Urban organizers figured the idea of National Capital Region (NCR) Delhi in the principal Master Plan of Delhi in 1962. The principle goal of NCR Delhi locale creation was to decongest Delhi by diffusing the populace weight towards ring towns. From that point, the NCR Delhi area appeared in 1985, when some encompassing locale turned out to be a piece of it. Later on, the NCR Planning Board detailed a Regional Plan 2001 which gives a model to sustainable urban and economic development. This arrangement needs to accomplish its goals through a between related approach structure in setting to socio-economic and condition development parameters, for example, the populace re-

dispersion, settlement designs, local land cover/land utilize designs, economic activities, infrastructural offices and natural elements and so on. Along these lines, the NCR Delhi district contains by the National

Capital Territory (NCT) Delhi and the portrayed region of the encompassing conditions of Haryana, Uttar Pradesh, and Rajasthan. The whole NCR Delhi district spread over a region of around 30,242 sq. kms. Out of this, the Haryana (7 regions) account the biggest territory of 13,413 sq. kms in like manner, the Uttar Pradesh (5 regions) and Rajasthan (incompletely 1 locale) account for a territory of 10,853 and 4,493 sq. kms. Separately. While the National Capital Territory (NCT) Delhi (9-

locale) account for 1,483 sq. kms. zone of the NCR Delhi district.

2. OBJECTIVES

- 1) To dissect the urban land cover and existing land utilize changes;
- 2) To look at the urbanization affect on the land cover/land utilize changes; and
- 3) To investigate the appropriate systems for sustainable condition and urban development

3. DATABASE AND METHODOLOGY

The present study depends on the remote sensing spatial data and in addition the non-spatial data accessible from the different hotspots for various periods. The Indian Remote Sensing Satellite IRS 1C and 1D multi determination sensors as Panchromatic (PAN) and Linear Imaging Self Scanner (LISS-III) symbolisms with ground determination of 5.8 and 23.5 meters separately have been obtained for two periods for the study region. Along these lines, the spatial advanced data is similarly more helpful than different strategies for data accumulation particularly for urban land cover/land utilizes change identification contemplates.

The simple filtered pictures of the Survey of India (SOI) top sheets on the size of 1:50,000 and 1:25,000 have likewise been utilized for the study territory. Though the non-spatial data as horticultural land, forests and wastelands have been acquired from the different sources as the Statistical Abstract of Haryana, Faridabad District Census

Handbook and Faridabad District Gazetteers, and so forth. Hence, the present study has been bolstered by the essential wellsprings of data produced through the broad field confirmation review and in addition the writing study of the records of the Department of Urban Development and Poverty Alleviation Ministry, Faridabad Forest Department, Faridabad Development Authority, Haryana Urban Development Authority (HUDA) and Master Plans of Delhi and Faridabad.

The Geographic Information System (GIS) and Remote Sensing (RS) tools have been connected to discover the land cover/land utilize changes over periods in the Faridabad locale. For example, the Arc/Info, ArcView, GeoMedia and ERDAS have been utilized for geographical examination, joining, and introduction of the spatial and non-spatial data for land cover/land utilize change location. In this way, these tools are more successful for observing and demonstrating for urban land cover/land utilizes changes and in addition for the sustainable condition and urban development in the Faridabad locale.

4. STUDY AREA

The Faridabad locale lies between the scopes 27° 51' 15" and 28° 30' 52" north and the longitudes 77° 04' 39" and 77° 32' 50" east. The Faridabad as an area appeared on the guide of Haryana on the fifteenth August, 1979 as the twelfth locale of the State, cut out from the Gurgaon region. Faridabad region is limited by Delhi on the north, Gurgaon area of Haryana State on the west, Gautam Budh nagar locale on the east

and Mathura region in the south of Uttar Pradesh State. Faridabad region spreads over a territory of 2,151 sq. kms. Out of this lone 59 sq. kms. Zone is under timberland which includes 2.83 for every penny of the aggregate geographical zone. The River Yamuna flows up and down the whole eastern limit from north to south isolating the area from the Uttar Pradesh State. Delhi-Mathura National Highway No. 2 i.e. the Shershah Suri Marg goes from north to south heading through the focal point of the Faridabad area. Faridabad city is around 32 kms. far from Delhi

5. LAND COVER

The land cover/land utilize topical maps have been readied utilizing the Survey of India advanced simple topographic sheets and the remote sensing satellite symbolisms. The land utilize has been grouped into the

three levels in subtle elements as is recommended in the manual of National Remote Sensing Agency (NRSA) for the NCR Delhi district

5.1 Faridabad Locale

- **Cultivated Land**

The Faridabad locale is all things considered shaped by the plain region. The River Yamuna is streaming up and down its eastern limit. It has framed a surge plain region. For example, there is a restricted tract of land up and down the Yamuna River which is very not the same as the staying plain zone. The previous is known as 'Khadar'. It is likewise know as the low lying surge plain where the more up to date alluvium is discovered kept. Though the last is know as 'Bhangar'. It is an upland plain which is made by the older alluvium.

Table 1: Land Cover / Land Use in Faridabad District: 1980-81 to 2000-01

Classification		1980-81	1990-91	2000-01	1980-81	1990-91	2000-01
		Area (in '000 hectares)			% to Total Geographical Area		
1.	Land Not Available for Cultivation:	38	42	39	17.84	20.19	18.40
	Land put to non-agricultural uses	29	34	30	13.62	16.35	14.15
	Barren and uncultivable land	9	8	9	4.22	3.85	4.25
2.	Other Uncultivated Land:	3	2	3	1.41	0.96	1.41
	Permanent pasture & other grazinglands	3	2	3	1.41	0.96	1.41
iii. Culturable waste							
3.	Fallow land	1	1	1	0.47	0.48	0.47
4.	Net Sown Area	167	157	163	78.40	75.48	76.89
5.	Forests	4	6	6	1.88	2.89	2.83
<i>Total Geographical Area</i>		<i>213</i>	<i>208</i>	<i>212</i>	<i>100.00</i>	<i>100.00</i>	<i>100.00</i>

- **Industrial Complexes**

The Faridabad locale is in effect basically created as an industrial territory; a railroad line has been set down directly through its center to be functional to all the industrial units set up there. The first industrial zone was 240 sections of land partitioned into plots of different sizes shifting from underneath 1 section of land to around 10 sections of land. There is simple accessibility of the major infrastructural offices as the land, work, control, crude materials, machinery, market, transport and budgetary help and so forth for the foundation of different kinds of manufacturing plant enterprises all through the Faridabad locale. There are presently around 15,000 little, medium and huge businesses giving immediate and roundabout work to about a large portion of a million people and positions ninth biggest industrial domain in Asia. Numerous international/multinational organizations like Whirlpool, Goodyear, Larsen and Toubro, Asia Brown Boveri, GKN Invel, Woodward Governor, Castrol other than Escorts, Eicher, Cutler Hammer, Hyderabad Asbestos, and Nuchem are operating in the area. It is tragic that the inhabitants of Faridabad are as yet breathing in the dirtied air producing out of the bursting stacks of the Faridabad Thermal Power Plant and the processing plants.

- **Transport Network and Other Infrastructures**

Faridabad area has very much associated network of street, rail and electricity. Every one of the towns of the locale are associated

by metallic streets and electricity since 1970. Faridabad is all around associated with different parts of the nation by rail and street. The expansive check railroad line of the central rail routes goes through the locale. The Delhi-Mathura National Highway-2 (NH-2) additionally goes through the center while associating with Faridabad, Ballabgarh, Palwal and Hodal towns of the locale. There territory around 6 phone trades and around 126 post workplaces in the area

6. DYNAMICS OF LAND USE IN URBAN CENTERS

There are six urban centers which are found everywhere throughout the Faridabad area. They are assuming a counter-profitable part in the economic advance since the beginning of Faridabad as a different region. Mention that the Faridabad and Palwal towns are to be created as urban-industrial complexes.

- **Faridabad City**

The Faridabad as a town is known to have been established in 1607 A.D. by Shaikh Farid, treasurer of Jahangir, with the goal of ensuring the highway which went through the town. In January, 1972 the towns of Ballabgarh, Faridabad Old and Faridabad Township were incorporated into the 'Faridabad Complex Administration' (FCA). The FCA was constituted to advance the arranged development of the area especially on the urban-industrial side. Faridabad city is for all intents and purposes a suburb of Delhi. It is situated around 11.26 to 32.19 kms. far from Delhi, and 1.61 to 6.44 kms. from the Old Town of Faridabad.

The year 1951 imprints the starting a quick populace development. The populace development has descended amid 1991-01 in contrast with the past periods which is great sign for populace control. Then again, the Faridabad city accounts for the biggest

extent of 86.46 per cent of the aggregate urban populace. The thickness of populace was 3,444 persons per sq. kms. In 1991 which developed to 5,633 of every 2001 as is confirm by the Figure 2.

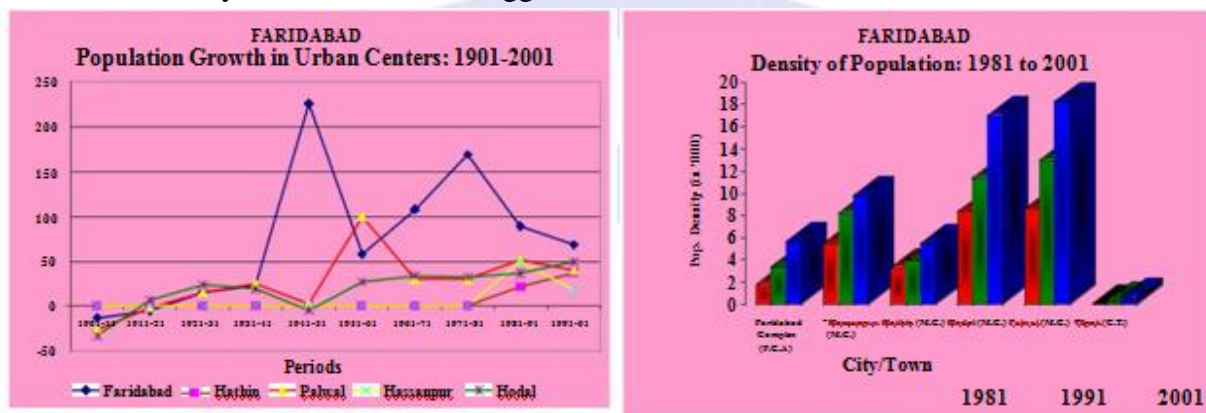


Figure 1 Figure 2

7. ONCLUSIONS

The urban land cover and existing land utilize have been dynamic in nature over the periods in the Faridabad district. There are number of ramifications of urbanization on the land cover/land utilize changes as the landscape's physiological destruction, illicit land infringement and shrinkage of forests cover and so on. The Master Plans have been there for quite a while now, and in spite of this long incubation period, there has been no worth development in the Faridabad district. Because of quick increment in population, the land esteems have gone high in and around Faridabad city. The district's urban centers must develop in concordance to share the population weight on the Faridabad city. In this way, it is normal that amid the urban development process the farming land

changed over into the developed land result to increment in land esteem which can be utilized for financing of the urban development. Spatial local arranging in general and land cover/land utilize arranging specifically are vital tools to control the sustainable urban and condition development.

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