



## SPATIAL AND TEMPORAL TRENDS OF POPULATION IN HAMIRPUR DISTRICT (UTTAR PRADESH) : A GEOGRAPHICAL ANALYSIS

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Population is the most important element of cultural landscape. Not only, man is the final judge in determining the economic pattern of resource utilization but he himself is the essential resource, furnishing the needed labour (mental and physical), to plan, organize and execute the processes utilizing the natural resources. By these processes he changes the natural environmental into a cultural landscape (signismond, 1948, p. 278). That is why the analysis of population characteristics of a region is sine quanon for the study of rural land use. It is with this objective that an attempt has been made, here, to analyse the growth, distribution, density of the rural population in Hamirpur district so as to understand the nature of settling processes operating in the past and forecast their future trends for Planning and development.

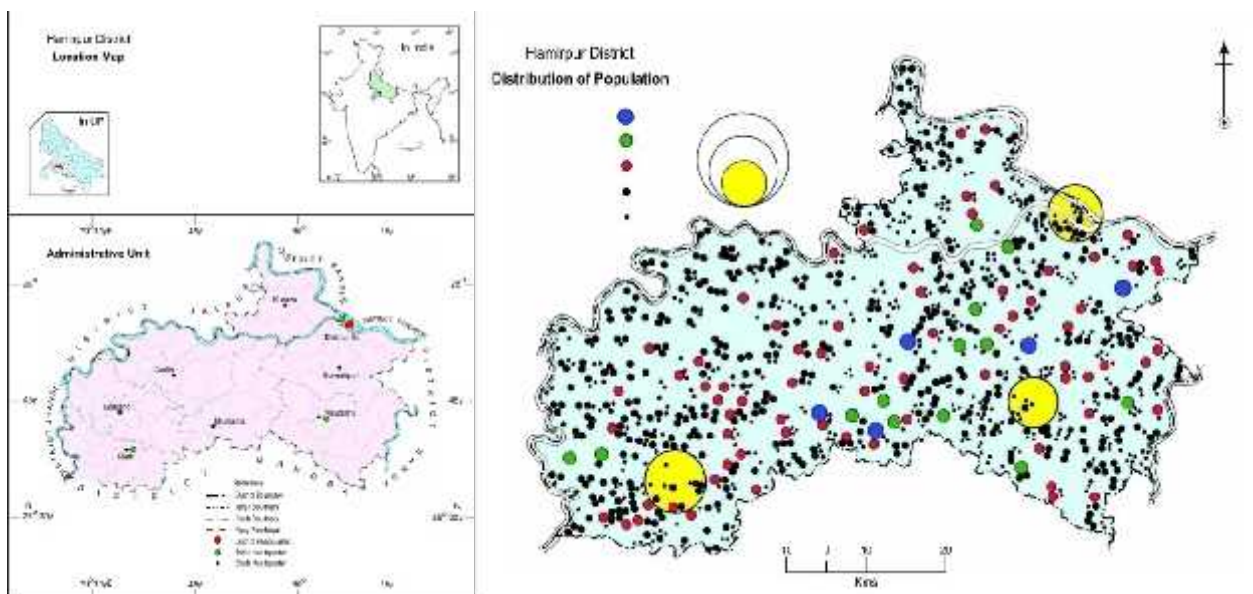
### STUDY AREA

The study area, Hamirpur District is situated in the north-eastern corner of Chitrakoot Dham Division of Uttar Pradesh. It forms part of the Bundelkhand Plain in the Yamuna-Betwa Valley, lying between  $25^{\circ} 30' - 26^{\circ} 8' N$ . Lat. and  $79^{\circ} 22' - 80^{\circ} 21' E$ . Long. the study area is bounded on the east by Banda District, on the west by Jalaun and Jhansi Districts, on the north by Kanpur and Fatehpur districts and on the south by Mahoba district. The district covers a total geographical area 4121.9 sq.km. (Rural area 410.2sq.km. and urban area 19.7 sq.km.) and supports a population of 1042374 (Male 563126 and female 479248) of which 83.35 percent is rural (2011) census.

The entire district comprises of three Tahsils; (Hamirpur, Maudaha and Rath) divided into seven blocks (Kurara, Sumerpur, Maudaha, Muskara, Sarila, Gohand and Rath), 59 Nyaya Panchayat, 314 gram Sabhas and 629 revenue villages.

### POPULATION GROWTH

The study area owing to its fertile soils and favourable location has always attracted large concentrations of population since ancient days. This ever increasing growth of population and its rising pressure on physical and economic resources have found their echo in mass poverty and unemployment in the district. For the sake of present study the entire population growth has been divided in two district phases:



#### (a) Early Phase-

No definite information of specific nature is known concerning the early growth of population in the study area. Paleolithic tools and implements of 'hand-axe-culture' found in different parts of the region indicate that the region was inhabited even during the ancient time. The Buddhist and Greek records indicate that between B.C. 400 and 300 the craft and commerce of Northern India were at a level of development comparable to that of later medieval times in Europe. Prior to the advent of Aryans the region was mostly inhabited by non-Aryan tribes who attained considerable degree of civilization. During the



Aryan influence the growth trend took a new shape and a number of villages and towns developed banks of Yamuna, Betwa and Chandrawal river. On the basis of preceding discussion it is evident that Pre-Census records are not authentic because at that time the enumeration of population was only done for military and taxation purposes. But there is no doubt that the region has seen civilized and settled life since early times.

### (b) Census Period

It is very difficult to have a correct understanding of the population growth prior to 1842 because past records were neither properly maintained nor well preserved. The first attempt to ascertain the population of the region on the basis of village was made in 1842. The total population was 2,26,245 persons which gave a density of 118 per square mile. By the time of the next census, which was taken in 1865 given a total population of 320941 persons which give a density of 138 per square mile (District Gazetteer Hamirpur 1988, p.56)?

### (c) Decadal Growth of Population

The dynamics of population growth since 1865 onward was taken in the region. But the full details of total population are available since 1901 onward when its population was recorded as 450542 (Rural population 413284) persons. Ten years later it was 463782, with positive growth rate of 4.65 percent. The largest increase during this decade was observed in Hamirpur tahsil (9.91 percent) and lowest increase Rath Tahsil (0.37 percent).

The next decade (1911-21) was marked by natural calamities like plague, cholera and influenza. As a result, people started migrating to the safer places for their livelihood. The population of the region decreased by 7.28 percent (Rural population). Rath Tahsil was the highest loser (10.27 percent), followed by Maudaha (7.79 percent), and Hamirpur (2.87 percent) Tahsils. The decline in the population during 1911-1921 was due to the outbreak of influenza epidemic (1918-1920) which took a heavy toll of life in the region (Table I).

From 1921 onward, the region's population recorded a marked increase continuously. The 1921-31 decade recorded an increase of 15.72 percent in the rural population of the region. The noteworthy increase in the region can be accounted by several factors- railway, Roads, Construction of water tanks (Madan Sagar, Kirat Sagar) for in Mahoba drinking and irrigation, which led to some improvement in economic and health conditions in the rural population. The highest percentage of decadal growth is found in Charkhari and Mahoba Tahsils (Present time district Mahoba).

**Table-1, Growth of Population (Total/Rural)**

Census years	Population Total	Net Variation	Decadal growth (Percent)	Population (Rural)	Net Variation	Decadal growth (Percent)
1901	458542	0.00	0.00	413284	0.00	0.00
1911	463782	+5240	+1.14	432508	+19224	+4.65
1921	440245	-23537	-5.07	401014	-31494	-7.28
1931	502689	+62444	+14.18	464082	+63068	+15.72
1941	468109	+145420	+28.92	582396	+118314	+25.49
1951	665429	+17320	+2.67	590731	+8335	+1.43
1961	794449	+129020	+19.38	747896	+137165	+26.60
1971	788215	+193766	+24.38	890259	+162363	+19.03
1981	1194168	+205953	+20.84	995742	+105483	+11.85
1991	1466491	+272323	+20.80	1211846	+216104	+21.70
(i) 71882 (Mahoba)		464291	(Mahoba)			
(ii) 747609 (Hamirpur)		747555	(Hamirpur)			
2001	1042374	+294746	+39.43	869916	+122361	+16.37

Source : District census Handbooks and District Gazetteer, Hamirpur District.

**Table-2, Projected Population (000)**

Sl. No.	Tahsils	2011 A.D.		2021 A.D.	
		Rural Population	Total Population	Rural Population	Total Population
1.	Hamirpur	277	307	313	347
2.	Rath	349	399	408	467
3.	Maudaha	375	405	432	465
	District	1002	1201	1155	1381



The period 1931-1941 recorded growth rate of 25.49 percent in the region. The largest increase, during this decade, was observed in Hamirpur tahsil (30.45 percent) and Rath Tahsil (26.29 percent).

The decade 1941-1951 has recorded a phenomenal growth of population in the region ( 1.43 percent). The accomplishment of the independence and partition of the country influenced the demographic situation directly or indirectly in every part of the Country. The net balance of in and out migration in population brought a number of refugees in the region. Though there was an over-all growth of population but the rate was slower as compared to the preceding decade.

The decade 1951-1961 for surpassed all previous records not only in terms of growth rate (26.60 percent but also in addition of actual numbers; a absolute increase of 137165 persons only in a short period (1951-1961) of ten years. It has been the first decade of planned Socio-economic development for welfare of the society. control of epidemics, improvement in transport and communication, and increased awareness towards better living conditions led to the phenomenal increase in the region's rural population.

The decade 1961-1971 shows a slightly declining growth rate (19.03 percent) than the previous decade. The floods causing (Yamuna and Betwa Rivers) serious damage to the crops adversely affected the growth of population. As a result, many families from the villages migrated to the city for their livelihood. During the 1971-1981, the growth rate was recorded 11.85 percent. The decade 1981-1991 shows a increase 21.70 percent. This during the total population increases 22.80 percent and rural population increase 21.70 percent.

The decade 1999-2001 show a slightly growth rate (16.37 percent). During this period population growth rate was 39.43 percent and rural population growth rate was 16.37 percent. Better medical facilities and total eradication of fatal epidemics like cholera, small-pox, plague etc. have rendered the region's population free from the horrors of 'Collective deaths'. The spread of Education and hygiene and realisation of civic culture among the people and their acquaintance with medical care, have reduced mortality rates in recent years. (Tiwari and Lal, 1987, P.115 and 178).

#### (d) Net Growth

On the basis of foregoing discussions, it is evident that the rural population of Hamirpur district short-up 413284 to 869916 during (1901-2001), recording a net growth of 150.93 percent. The net growth shows wide variations, the highest has been recorded in Hamirpur tahsil (180.50 percent), Maudaha Tahsil ( 171.04 percent) and the lowest in Rath Tahsil (106.21 Percent).

#### (e) Annual Rate of Increase

Various techniques have been devised by demographers for calculating the annual growth rate of population. The annual rate of increase for rural population in the region has been calculated by using the following formula suggested in "U.N. Demographic year Book" (Clarke, 1980, p. 146).

$$\text{Annual rate of increase} = \sqrt[t]{\left(\frac{P_1}{P_0} - 1\right)} \times 100$$

where,  $P_0$  is the population at the beginning of the period (1901)  
 $P_1$  is the population at the end of the period (2001)  
and  
 $t$  is the number of year ( 100 years)

The annual rate of increase was 1.25 percent of rural population in the region during the last 100 years. As in case of net increase, Hamirpur tahsil records the highest annual rate (1.45 percent), while the lowest percentage of annual rate is recorded in Rath Tahsil (0.96 percent). Infact, 'the rapid development of transport and communication lines (especially roads) has led to the emergence of several rural marketing centres which have become the hub of recent aggregation of rural population (Tiwari, 1978, p.132).

#### (f) Population variability:

Geddes (1942) underlined the significance of variability index in describing the growth of population, as decadal growth fails to show variability. The region has a high variability index (15.98 percent). In the tahsil level highest percentage of variability has been observed in Hamirpur tahsil (?16.83 percent) followed by Rath (16.46 percent) and Maudaha (13.36 percent) Tahsils.



Percent variation from expected to actual has been Calculated by the following formula (Geddes, 1941, pp. 228-52).

$$yc = \frac{yC-y}{y} \times 100$$

Where, yc is expected population and  
y is the actual population

On the basis of the percent variability mean percent variation may be calculated as follows:

$$\frac{d_1+d_2+d_3+\dots}{n+1}$$

Where, d<sub>1</sub>, d<sub>2</sub> ..... are percent variation and x is the number,

### (g) Population Projection

The estimated trends of future population are known as population projection. 'Population projection is a phenomenon which broad caste the growth of population in ensuring future. The future population that is projected, as logical construct, an artifact designed to help and to understand the observed population (Keyfitz and Flieger, 1971, p. 158). Here future trend of population growth in the region has been calculated by using the following formula.

$$A = P \left(1 + \frac{r}{100}\right)^n$$

Where, A= Projected Population

P= Present Population

r= annual growth-rate during (2011-2021)

n= number of years between A and P

Assuming the growth rate between the period 2001-2011, at the rate of compound interest the region's rural population is expected to reach 11,55,000 persons and the total population 13,81,000 persons by 2021 A.D. (Table-2)

### Density Pattern

The general distribution of population does not provide any clue to human pressure on land resources. Therefore, the Spatial pattern of population density may be analysed which indicates the actual pressure of population on the resource base (Trewartha, 1953, p.94). Generally population remains dispersed in rural areas and concentrated in urban areas. But this does not always yields good results in case of the study region where the pace of urbanization and industrialization is very slow. According to 2001 census the region has recorded an average density of 212 persons/km<sup>2</sup>. This helps us in identifying four density categories in the district.

#### (i) Very High Density

It consists only one block- Sumerpur (Hamirpur Tahsil) which covers 626 km<sup>2</sup> area of total rural areas. Here the density range arithmetic density 247 persons/km<sup>2</sup> and Agricultural density 60 persons/km<sup>2</sup>. The higher density in block is due to fertile agricultural land, facility of irrigation, easy means of transport and communication and proximity of towns (Sumerpur and Hamirpur) and service centres.

#### (ii) High Density

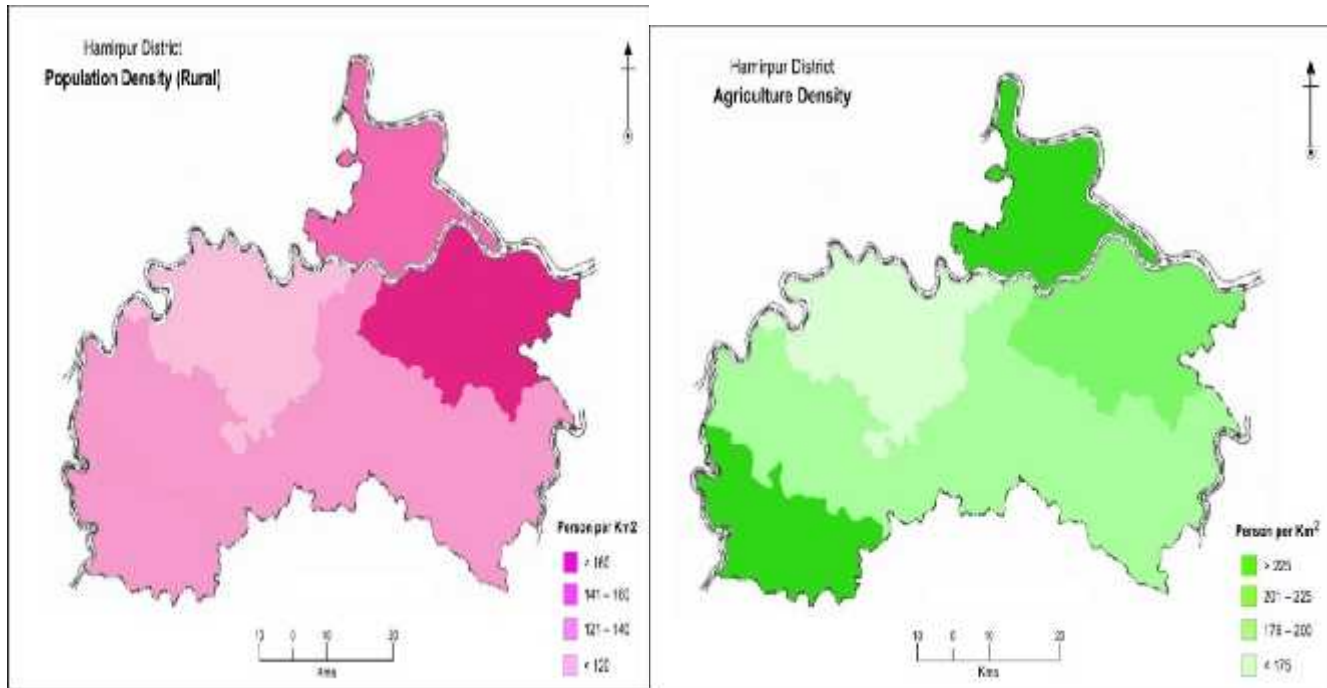
It consists of two development blocks (Rath and Maudaha) together occupies 1983 Km<sup>2</sup> area of the district. Here the density ranges from 158 persons/km<sup>2</sup> (Rath block) to 153 persons/km<sup>2</sup> (Maudaha block). Agricultural density in Rath block is 52 person/km<sup>2</sup> and Maudaha block is 46 persons/km<sup>2</sup>.

#### (iii) Moderate Density

This density group stretches over two blocks covering rural area of 1057 km<sup>2</sup>. Arthmatics density 140 person/ km<sup>2</sup> and agricultural density ranges 207 persons/km<sup>2</sup> (Kurara block) to 201 persons /km<sup>2</sup>. Muskura block. All blocks of this group are mostly located in the flood affected and ravine lands in the basin of Yamuna, Betwa and Dhasan revisers and vast low land tracts.

#### (iv) Lon Density

It contains only one block (Sarila block, Rath Tahsil), covering the total area of 640 km<sup>2</sup>. Arithmetic density 120 persons/km<sup>2</sup> and agricultural density 48 persons/km<sup>2</sup>. This block located in the flood affected area of the Betwa river. Where rugged topography, infertile soils which lower down the density values.



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