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Urbanization and Regional Development in Eastern Uttar Pradesh: Some Policy Imperatives

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Abstract

Urbanization and development are closely linked together and it is difficult to say whether urbanization follows regional development or regional development follows urbanization. Present paper attempts to highlight the role of urbanisation in regional development process. The area of study- Eastern Uttar Pradesh is a typical case of developing economy. The pace of development in the region is quite slow, and less urbanised districts are at the lowest rung of development, on the other hand comparatively more urbanised districts are in better state.

Keywords: Economically depressed; Tertiarisation; Metropolitanization and primate city

Introduction

Those urban centres are engines of growth and vehicles of modernization and development and that urbanization, as a process of change, is responsible for regional development has been very well documented. There are several theories of regional development such as Spatial Diffusion Theory [1], Growth Pole Theory [2], Cummulative Causation Model [3], Economic Development Theory [4], Stage of Economic Growth Model [5] and Core-Periphery Model [6] which directly or indirectly explain the relationship between urbanization and development and, thereby, the processes operating in creating regional disparities. But all these theories have their roots in industrial economies and, therefore, are only remotely connected with the dynamics of developing/ backward regions, where agriculture is the major source of sustenance and that too, at subsistence level.

Urbanization is very complex phenomenon which can be explained only by maximum variables with optimum functions [7]. There are different theories of the origin of urban settlements such as Hydraulic theory, Economic theory (theory of agricultural surplus), Religious theory and Defense/ Military theory [8]. According to Klaasses [9], there are four stages of urban development- urbanization, sub-urbanisation (ex-urbanisation), dis-urbanisation (counter-urbanisation) and re-urbanisation [9]. According to VLS Prakasa Rao, there are three processes of urbanization- metropolitanisation, intermediate urbanization and subsistence urbanisation [10]. The metroplitanisation refers to the growth of urban population through those cities which have population more than ten lakhs. Intermediate urbanisation refers to cities and towns which have population of more than twenty thousand.

The subsistence urbanization on the other hand, refers to the growth of urbanization through small towns which have population below twenty thousand. All the three processes are at work in India in general and in different regions of the country in particular. The purpose of this paper is to examine the relationship between urbanization and development, identify the correlates of development and suggest policy imperatives for development for development of a developing region. The Eastern Uttar Pradesh which is one of the four economic regions of the state of Uttar Pradesh has been selected as a case in point. This is important to mention that the state of Uttar Pradesh, which is fifth in area (240,928 sq. km.) and first in population (19,9581477) among the 36 Indian states, is divided into four economic regions: Western U.P., Central U.P., Bundelkhand and Eastern U.P.

The Eastern Uttar Pradesh has been especially selected as area of study because this is the most backward among the four economic regions. This occupies first rank in terms of population, area, density of population and total dropout rate in primary education among four economic regions of Uttar Pradesh. But as far as the development indicators are concerned, it ranks fourth in terms of composite index that is based on 36 indicators of development which includes 10 indicators of agriculture and allied activities, 7 of industrial sector, 10 of economic infrastructure and 9 of social infrastructure (Planning Department, U.P., 2011, p. 308). Evidently, the development in the area under study is in deplorable state even after six decades of independence. This situation, thus, calls for examining the causes and suggesting the corrective measures to be undertaken to lift this area from slumber to take part in the national well

being movement.

Locational Profile

The Eastern Uttar Pradesh extends between 23o 45' N to 28o 30' N latitudes and 81o 45' E to 84o 30' E longitudes over an area of 85,845 sq km with a total population of 79,742,097. This, thus, covers 35.6 percent of the total geographical area and 40.07 percent of the total population of the state of Uttar Pradesh.The area includes 27 districts namely Allahabad, Kaushambi, Pratapgarh, Sultanpur, Faizabad, Ambedkar Nagar, Bahraich, Shrawasti, Gonda, Balrampur, Siddharth Nagar, Basti, Sant Kabir Nagar, Gorakhpur, Maharajganj, Kushinagar, Deoria, Azamgarh, Mau, Ghazipur, Ballia, Jaunpur, Varanasi, Sant Ravidas Nagar, Chandauli, Mirzapur and Sonbhadra. They vary greatly in size, the smallest being Sant Ravidas Nagar (1,105 sq km) and Sonbhadra being largest (6,788 sq km) (Figure 1).
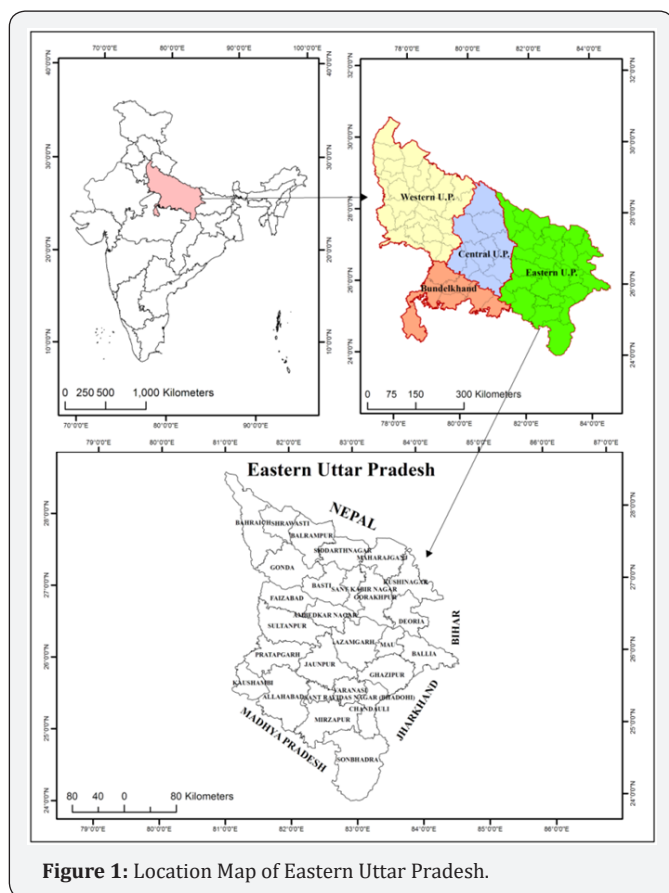

Figure 1: Location Map of Eastern Uttar Pradesh.

Geographical Profile and Resource Endowments

The region may be divided into two main physiographic zones- (a) Northern plain area, and (b) Southern upland area (Figure 2). The Northern Plain region can further be divided into the Saryupar Plain, the Ganga-Ghaghra doab (Avadh plains), and the Gangapar or Trans-Ganga plain. The Southern upland consists of the Vindhyan Uplands (Mirzapur hills), the Son-Gorge and the Sonpar upland complex (Kaimur plateau). The study area is drained by the Ganga and its tributaries (Figure 3). There are three major river systems in the area. These are: the Ghaghra system in the north, the Ganga system in the middle, and the Son system in the south. A general feature of the plain region is that the rivers meet at acute angles and the tributaries form parallel or sub-parallel lines to the main rivers.
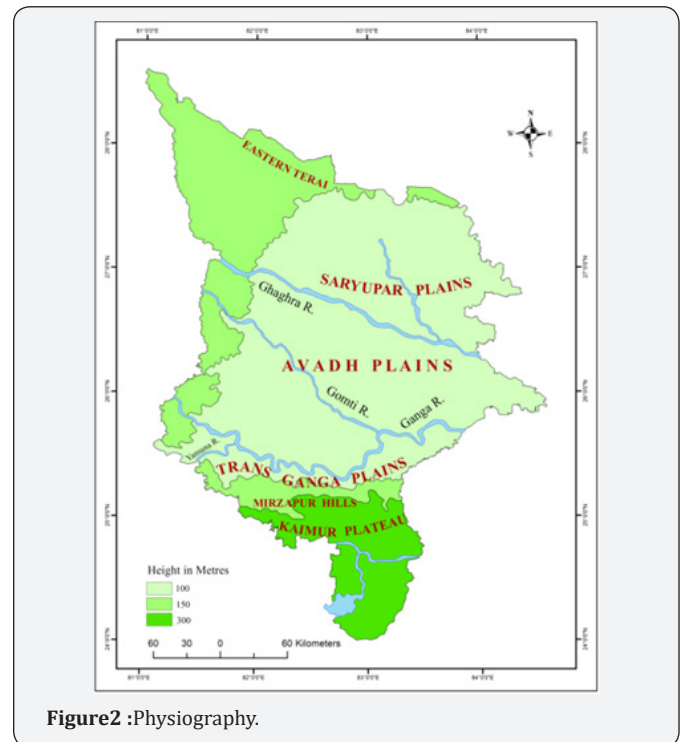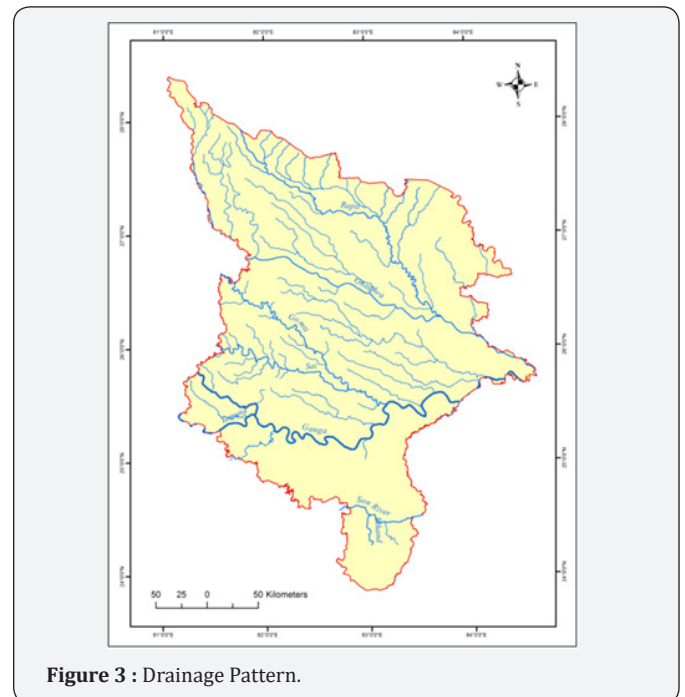

Figure2 : Physiography.

Figure 3 : Drainage Pattern.

The drainage of the trans-Ghaghra plain is received entirely by the Ghaghra through its tributaries – the Ruwana, the Rapti and the Chhoti Gandak coming from Himalayas in the north, have a number of their own tributaries mostly of unstable and seasonal nature. The Ghaghra receives almost no stream of importance

from the south except a few affluent of smaller dimensions. This region has the dendritic pattern of drainage because of the preponderance of small tributary systems and the fine texture of the drainage lines. The Gomti, the largest tributary, divides the doab region into two parts: the Gomti-Ghaghra Doab, and the Ganga-Gomti Doab. The whole doab is drained by parallel running rivers like the Chhoti Saryu, the Mangai, the Neau and the Ganga which ultimately discharge themselves into the Ganga river. The Baruna is the only significant stream in the Gomti-Ganga interfluve that joins the river Ganga near Varanasi. The Pili and the Sai are the chief tributary streams of the Gomti river which are seasonal in character and assume large size during rainy season. In the south-west, the Yamuna river coming from west meets the river Ganga at Allahabad.

The region having adequate rainfall and generally porous alluvial soils has sufficient storage of ground-water. The reservoir occurs in the water-bearing sediments. The water-table is generally lower in the recent alluvium where its sandy nature allows greater sinking of the water than in the older alluvium of clayey areas. However, the water-table varies from 3 to 20 mts. There are two types of soils - alluvial soils, which are found in the plain and residual soils, which are found in the southern upland. Two popular divisions of alluvial soils are: Khadar soils, and Bangar soils. The Khadar, newer in age, is commonly found in the river tracts or flood plains which are renewed every year. They mostly consist of fine silt but along the Ghaghra and the Gandak, they are sandy also.

Figure 4 : Soils of Eastern Uttar Pradesh.
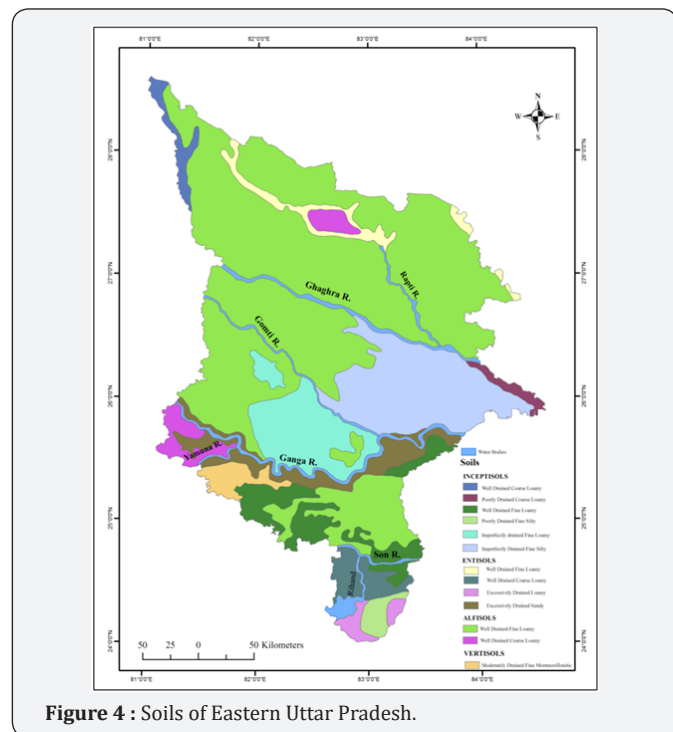
The bangar soil of upper plain is the older alluvium found in the areas beyond the annual flood limit. This soil is subjected to considerable denudation due to rain water. Unlike the khadar, it is under a process of denudation, and contains patches of Usar

infestations increasing towards the western part of the Ganga-Ghaghra doab. The nodular lime or 'Kankar' is spread throughout the upper plains. The heavy clay known as Matiyar is found in the depressions while loam soil known as Dumat or Doras are found in the upper reaches. The soils of the study area may be divided into nine categories as shown in (Figure 4). The forest cover of the study area is 9.2 percent of its total geographical area with maximum in Sonbhadra and Mirzapur districts and the minimum in Mau and Azamgarh districts.

It has four important wild life sanctuaries namely Chadraprabha (Chandauli), Katarnianghat (Bahraich), Kaimur (Sonbhadra and Mirzapur) and Surha Taal Bird Sanctuary (Ballia), Tortoise Sanctuary (Varanasi), Bankatwa (Bahraich) and Sohagi-Barwa (Siddarth Nagar). In Tarai belt of Saryupar plain, excessive humidity and fertile soil have caused the luxuriant growth of plants while in southern uplands the rugged terrain – an unsuitable land for cultivation have preserved most of the forest lands. But the Ganga-Ghaghra doab which was covered by dense forests at a time has now lost almost all its forest cover. Patches of shrubs and grasses are also found in the ravine pockets of the river basins particularly in the basins of the Gomti, the Sai, the Tons, the Rapti and the Kuwana. The tamarind trees grow well in the low lands of the Ghaghra. The three districts- Jaunpur, Ghazipur and Ballia in the far eastern portion of the state, have no forest land at all.

In the districts of Pratapgarh, Faizabad, Sultanpur, Azamgarh, Deoria and Basti also, it is negligible as they have below one percent of their total land under forest. In the Saryupar plain, some parts of the more humid areas and other pockets of Bahraich and Gorakhpur districts have appreciable forest cover. In the south also, the southern part of Varanasi district, Sonbhadra and Mirzapur have some forest lands while only 3.9 percent land of Allahabad district is covered by natural vegetation.

The area has traditionally been an agriculturally dominated area where human resource has been considered as an asset. This is evident from the absolute population and its growth in different decades. This is true that prior to independence, the population suffered a great loss especially during 1901-11, 1911-21 and 1921-31 due to different kinds of epidemics such as cholera, plague, small pox and measles. But once the trauma of epidemic was over and economy improved (only slightly though), the population witnessed a spurt rise in its number. The distribution of population is almost uniform except in the south especially in Sonbhadra where on account of rocky terrain, the soils are not fully developed and the land affordability is very poor.

State of Political Economy

Political economy refers to organization of production and use of wealth production. Viewed from this perspective, the area under study appears to have much less bargaining power vis-a-vis the other economic regions of Uttar Pradesh. (Tables 1 & 2) present a temporal perspective of the state of political economy in terms of some select variables particularly infrastructural

variables which are basically responsible for accelerating the pace of development. It is clear that the per capita availability of basic infrastructures (road, railway, education and health and banking facilities, cold storage, electricity consumption, per capita GDP), female literacy and urban population is extremely low. Significantly there has been no noticeable change during the last one decade (2001-2011). Much though it is rich in terms of resources and has vast potential for development, the region has not attracted the attention it deserves.

Table 1 : Select Socio-economic Variables, 2001.

District	Length of road in Km.	Length of rail track in Km.	Number of UG and PG colleges	Number of banks	Number of Allopathic hospitals	Number of Cold Storage	Per head Electricity Consumption in KWH	GDP per capita	Female Literacy in percent	Urban Population in percent
Allahabad	3283	412	27	298	60	32	295	11727	46.38	24.45
Ambedkar Nagar	1117	65	15	90	25	16	75	7270	45.30	8.93
Azamgarh	2487	66	11	208	14	9	75	7060	43.40	7.55
Bahraich	1202	152	7	147	6	9	47	7235	22.78	10.00
Ballia	1859	114	17	174	15	14	80	7217	43.16	9.77
Balrampur	970	72	4	71	32	2	52	7429	21.79	8.06
Basti	1054	54	7	130	10	5	129	6988	36.92	5.56
Chandauli	1681	191	6	89	8	2	153	10925	44.13	10.56
Deoria	2253	111	13	131	8	3	36	6411	42.51	9.89
Faizabad	1629	116	15	132	50	10	124	8425	42.26	13.46
Ghazipur	2930	193	32	174	17	21	114	7683	44.03	7.68
Gonda	1370	181	4	161	7	8	58	7033	27.17	7.03
Gorakhpur	2596	84	34	217	52	14	133	9003	42.88	19.59
Jaunpur	4005	233	21	228	24	19	105	6901	44.07	7.40
Kaushambi	1226	63	4	61	9	0	103	10215	29.79	7.10
Kushinagar	1834	177	4	123	8	2	42	7426	29.64	4.58
Mahrajganj	1156	45	2	99	26	8	48	7335	27.93	5.09
Mau	1076	104	12	93	12	3	152	9251	48.66	19.44
Mirzapur	1886	170	8	138	22	10	125	9327	39.26	13.54
Pratapgarh	2750	140	11	165	11	6	71	6825	41.54	5.29
Sant Kabir Ndagar	739	22	7	72	6	3	52	6767	34.92	7.08
Sant Ravidas Nagar	1059	74	5	73	2	1	120	9881	38.44	12.82
Shrawasti	634	25	2	62	27	0	0	5590	18.58	2.84
Siddharth Nagar	1041	50	4	114	4	2	33	6619	27.08	3.81
Sonbhadra	1269	103	4	93	17	0	75	25344	33.70	18.82
Sultanpur	2545	186	17	177	15	5	92	8492	40.86	4.74
Varanasi	2283	122	15	226	61	14	271	10091	53.05	40.16

Table 2: Select Socio-economic Variables, 2011.

District	Length of road in Km.	Length of rail track in Km.	Number of UG and PG colleges	Number of banks	Number of Allopathic hospitals	Number of cold storage	Per head Electricity Consumption in KWH	GDP per capita	Female Literacy in percent	Urban Population in percent
Allahabad	8593	412	232	485	70	41	401	33791	60.97	24.74
Ambedkar Nagar	3407	65	64	170	2	11	135	22382	62.66	11.71
Azamgarh	6177	66	88	314	12	6	108	19225	60.91	8.53
Bahraich	3106	77	21	311	30	5	95	18085	39.18	8.14

Ballia	2885	114	116	240	7	11	115	23602	59.75	9.39
Balrampur	2657	72	8	89	4	0	61	24504	38.43	7.74
Basti	2974	54	29	216	19	2	108	21073	56.23	5.60
Chandauli	3685	191	26	150	3	1	224	28658	60.35	12.42
Deoria	3249	111	62	198	10	3	85	20705	59.38	10.22
Faizabad	2930	116	77	211	149	14	150	29633	59.03	13.77
Ghazipur	5194	193	106	276	33	48	157	22552	60.29	7.58
Gonda	3504	181	13	182	7	7	75	22140	47.09	6.55
Gorakhpur	4878	104	110	338	52	14	236	27294	59.36	18.83
Jaunpur	6261	233	142	314	9	22	130	19533	59.81	7.71
Kaushambi	2071	63	44	102	4	7	170	29600	48.56	7.78
Kushinagar	3386	177	36	221	2	2	54	20163	52.36	4.72
Mahrajganj	2515	45	34	144	4	5	75	19943	48.92	5.02
Mau	2697	104	84	142	22	3	232	25306	63.63	22.63
Mirzapur	4848	170	41	205	10	8	167	25717	56.86	13.92
Pratapgarh	4195	140	99	276	10	10	117	19466	58.45	5.46
Sant Kabir Nagar	1697	22	21	124	8	2	98	20194	54.80	7.49
Sant Ravidas Nagar	1551	74	22	115	2	2	148	29556	56.03	14.53
Shrawasti	1549	0	7	73	13	0	40	21048	34.78	3.46
Siddharth Nagar	2495	50	18	137	15	0	61	19241	47.41	6.28
Sonbhadra	6029	103	32	162	37	0	175	40249	52.14	16.88
Sultanpur	3127	105	43	188	59	3	122	17186	58.28	5.26
Varansi	3359	122	39	438	202	10	391	30678	66.69	43.44

It may be added that the region under study is represented by 32 Members in Parliament and 159 out of 403 MLAs in the state assembly of Uttar Pradesh, and, thus, the region is very well represented both in the centre as well as in the state. As many as 5 Prime Minintsres (Pt. Jawahar Lal Nehru, Lal Bahadur Shastri, Rajiv Gandhi, V. P. Singh, Chandrashekhar Singh) hailed from this region. Yet it remained ignored as far as the development scale is concerned. The infant mortality is very high in the region because health facilities are in deplorable state, the per capita income is extremely low because the land holding distribution is very skewed. The number of marginal and small farmers has been continuously increasing. Most of the land lies in the hands of select few. Undoubtedly, electricity plays a very crucial and critical role in rural development process. However, this is in awful state.

The state of education is one of the worst kind mainly due to poor infrastructure in terms of teacher-taught ratio, and related facilities. Female education is yet to pickup; gender bias continues unabated. The plans are not based on logic and rationale rather they are based on whims, cast, creed and sect. In place of short, medium and long-term plans of development, there are ad-hoc and random plans having no foundation whatsoever.

Urbanising Landscape

The region is characterised by the economy where agriculture is the main stay of the people. The process of urbanisation has, thus, been very slow. The growth of urbanization in Eastern Uttar Pradesh may be perused from the (Table 3). It is evident that the urban population of Eastern Uttar Pradesh has been increasing continuously since 1931. During 1901-1921, the population in general declined due to different kinds of diseases particularly plague, cholera and small pox. The population has grown faster after 1951 during independence period. The highest growth (61.4 percent) of urban population in Eastern Uttar Pradesh and 60.6 percent in Uttar Pradesh were recorded in 1981. Surprisingly the growth of urban population in Eastern Uttar Pradesh was much less (27.8 percent) as compared to Uttar Pradesh (33 percent) during 1991-2001. The urbanization grew by 24.46 percent only during 2001-11 which is a little less than earlier decade.This indicates that the factors and forces which are responsible for urbanization are having week linkages in the study area. The economic linkages such as industrialization, commercialization, trade and transport and services have not taken off. The slow process of urbanization is distinctly visible from the analysis at the district level as well (Table 4).

Table 3: Decadal Variation in Urban Population in Eastern Uttar Pradesh (1901-2011).

Census	Urban population in million			Percent Urban Growth		
	India	Uttar Pradesh	Eastern Uttar Pradesh	India	Uttar Pradesh	Eastern Uttar Pradesh
1901	25.9	5.2	1.2	----	----	--
1911	25.9	4.7	1	0	-9.2	-15
1921	28.1	4.7	1.1	0.8	0.2	4.3
1931	33.5	5.3	1.3	1.8	13.2	18.1
1941	44.2	6.7	1.5	2.8	26.1	19.7
1951	62.4	8.2	1.9	3.5	21.9	24
1961	78.9	9	2.1	2.3	9.3	12.3
1971	109.1	11.6	1.7	3.2	29.7	30.2
1981	159.5	18.7	4.4	3.8	60.9	61.4
1991	217.2	26	6.1	3.1	38.5	38.3
2001	285.4	34.5	7.8	2.8	32.9	27.8
2011	377.1	44.4	9.7	2.8	28.8	24.5

Table 4: Growth of Urban Population at District Level in Eastern Uttar Pradesh-2001-2011.

District	Urban Population			Variation and Growth in Percent of Urban Population	
	1991	2001	2011	Growth Percent (1991-2001)	Growth Percent (2001-2011)
Allahabad	954607	1206785	1472873	26.42	22.05
Ambedkar Nagar	140986	181093	280730	28.45	55.02
Azamgarh	225719	297301	393401	31.71	32.32
Bahraich	190364	237998	284044	25.02	19.35
Ballia	224087	269944	304109	20.46	12.66
Balrampur	115139	135580	166391	17.75	22.73
Basti	94108	115985	138097	23.25	19.06
Chandauli	125038	173558	242553	38.80	39.75
Deoria	217363	268305	316803	23.44	18.08
Faizabad	236526	281273	340253	18.92	20.97
Ghazipur	187433	233370	274360	24.51	17.56
Gonda	149587	194319	225029	29.90	15.80
Gorakhpur	575276	738591	836129	28.39	13.21
Jaunpur	221339	289411	346580	30.75	19.75
Kaushambi	67758	91785	124456	35.46	35.60
Kushinagar	108764	132523	168107	21.84	26.85
Mahrajganj	82917	110600	134730	33.39	21.82
Mau	243995	360369	499208	47.70	38.53
Mirzapur	228640	286506	347567	25.31	21.31
Pratapgarh	122101	144555	175242	18.39	21.23
Sant Kabir Nagar	81718	100551	128531	23.05	27.83
Sant Ravidas Nagar (Bhadohi)	139238	173485	229302	24.60	32.17
Shrawasti	26542	33356	38649	25.67	15.87
Siddharthnagar	59508	77801	160691	30.74	106.54
Sonbhadra	144083	275430	314342	91.16	14.13
Sultanpur	114168	152258	199916	33.36	31.30

Varanasi	1046464	1260571	1597051	20.46	26.69
Eastern U.P.	6123468	7823303	9739144	27.76	24.49
Uttar Pradesh	25971831	34539582	44495063	32.99	28.82

From Table 4, it may be clearly made out that the growth of urban population has been very varied during 2001-2011. The districts which have been economically better off, have recorded higher growth of urban population as compared to those districts which are economically depressed. The urbanization in these districts is taking place due to tertiarisation rather than industrialization Misra, 1990 which is a very unique feature of this region. Intermediate pattern of growth has been taking place at the level of district headquarters. This growth may be attributed to service sector. There is almost no development of secondary sector activities. However, there are two districts where the process of metropolitisation is also at work and these are Allahabad and Varanasi. Both are million cities and are growing as regional capitals dwarfing the growth of subordinate towns. The two cities have emerged as primate cities of the region as conceived by Jefferson [11].

Table 5: No. of Towns in Different Size Class in Eastern Uttar Pradesh (1901-2011).

Class	I	II	III	IV	V	VI	Total Towns
1901	2	3	3	12	21	8	49
1911	2	2	4	11	16	14	49
1921	2	3	3	10	21	15	54
1931	2	3	7	8	21	14	55
1941	2	3	10	8	20	13	56
1951	3	3	10	10	20	10	56
1961	4	3	13	11	17	0	48
1971	5	4	12	21	25	2	69
1981	5	10	12	48	68	13	156
1991	8	12	24	64	59	2	169
2001	15	8	43	88	33	4	191
2011	17	6	67	101	98	16	305

There has been phenomenal growth in the number of towns during 1901-2011 (Figure 5). They have increased from 49 to 305 during this period. But major increase has taken place during 1971-2011 particularly in 2001-11. This indicates that more than 256 rural settlements have joined the category of towns during this period. There was large scale cut down in the number of towns in 1961 due to rigorous definition of towns in this Census. During 1971-81 there has been phenomenal growth in the number of towns. It grew from 69 in 1971 to 156 in 1981. The growth in the number of towns has picked up since 1971. This growth in the number of towns may be interpreted as socio-economic transformation among rurban centres which were serving as overgrown market centres. The aforesaid observation is further elaborated by the number of towns in different size classes (Tables 5 & 6). From this table, it may be seen that the number of towns in class I size has increased from 3 in 1951 to 17 in 2011. Obviously, the number of big size towns is growing. The other group of towns which has demonstrated big jump in its number are size classes III, IV and V. The towns belonging to size class VI are not so significant but the size class IV is emerging in a big way.
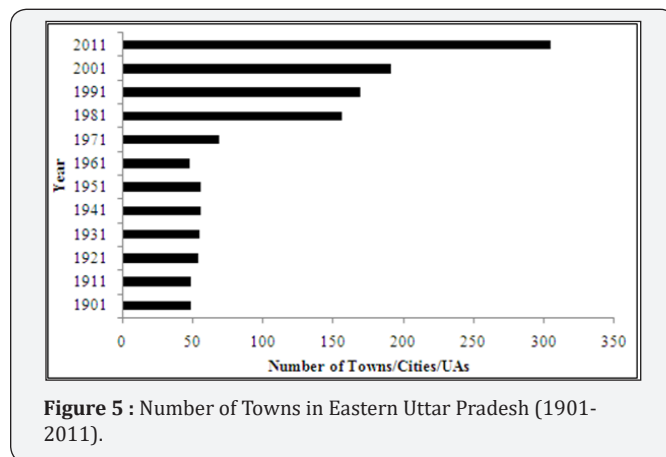

Figure 5 : Number of Towns in Eastern Uttar Pradesh (1901-2011).

Table 6: Population Percent in Different Classes of Towns in Eastern U.P. (1901-2011).

Year	Class I	Class II	Class III	Class IV	Class V	Class VI
1901	36.41	18.94	10.29	16.94	14.85	2.57
1911	41.03	12.14	12.17	17.17	12.12	5.37
1921	37.65	17.87	8.92	16.41	14.57	4.58
1931	35.51	18.37	17.02	10.69	13.97	4.43
1941	39.04	16.58	22.82	7.77	10.83	2.96
1951	48.78	13.16	18.28	8.48	8.85	2.45
1961	57.35	9.85	20.06	6.72	6.02	-
1971	57.27	9.92	15.82	8.24	6.63	0.12
1981	47.85	15.69	8.55	15.36	11.34	1.21
1991	51.01	15.23	11.18	14.66	7.78	0.14
2001	58.50	7.57	14.99	15.47	3.25	0.22
2011	52.46	4.88	19.99	14.86	7.06	0.75

These small size towns are becoming important in strengthening the bond between urban and rural landscapes. This has great bearing in the process of change. From the Table 6, it is clear that more than 50 percent urban population is supported by the class I towns which are 17 in number. The class III and class IV towns which are 67 and 101 respectively accommodate 19.99 percent and 14.86 percent urban population respectively. Only 5 percent population lives in class II towns; the class v and class VI towns support 7.8 percent population only. Obviously there is a gradual sliding-up in the hierarchy of towns. The process however is slow. The degree of urbanization refers

to the percent of urban population to the total population. Based on this formulation the district level urbanization has been presented in (Figure 6). From the map it may be clearly seen that Varanasi, Allahabad and Mau have comparatively high degree of urbanization. Varanasi and Allahabad are the metropolises and Mau is carving out a place in household industrial products.
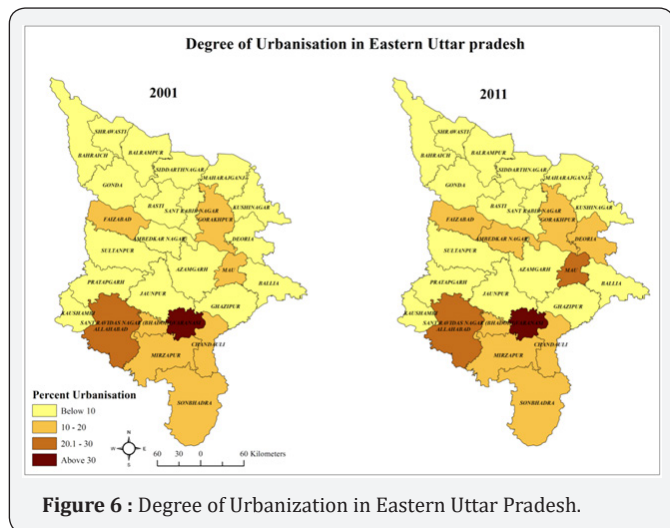

Figure 6 : Degree of Urbanization in Eastern Uttar Pradesh.

The rank-size rule presents a good measure to understand the process and pattern of development. According to this rule if the towns are plotted according to their size and rank, they are supposed to follow three pattern such as (a) Concave (b) Stepped and (c) Binary. While concave is the indicative of sluggish and poor economic development, the other two patterns indicate fast and mature levels of development [28]. In the present case, the curve presents a very mixed pattern (Figure 7). It is tilted more towards the combination of stepped and binary patterns.
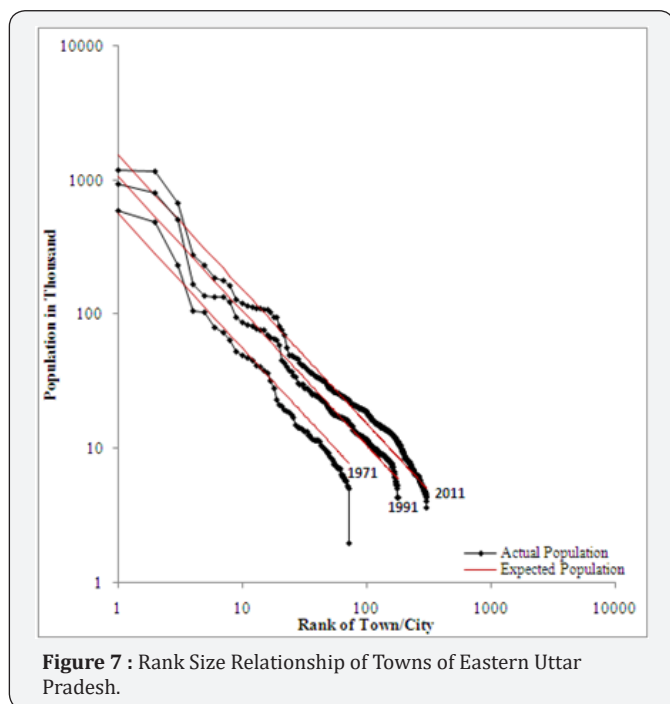

Figure 7 : Rank Size Relationship of Towns of Eastern Uttar Pradesh.

An exercise was also undertaken to calculate the Rank Size rule based on the formulation given by Gibbs [12]. While Varanasi and Allahabad occupy the top hierarchy, all other towns are far below the expected size. The number of towns has been emerging fast but the economic base is so poor that they are not able to strengthen themselves in terms of infrastructure and economic opportunities. The population in the small towns is mainly due to reproductive process and not on account of migration. The condition of most of these towns is quite deplorable in terms of public utilities and transport system. There is no element of planning; it is all haphazard and misdirected. In order that the rank size rule should follow, some shifts of population from higher to lower order towns is imperative. Apparently this shift is not possible unless the economy improves and small towns witness positive change in their infrastructure, amenities and employment opportunities.

Measures of Development Disparity

One of the ways of measuring the consequential impact of development is examining the spatial inequality. The spatial inequality here refers to social well being or development disparity prevailing in areas or regions. Identifying the spatial component of social inequalities is crucial not only to the study of human geography but also to the improvement of social conditions within the society as a whole. The spatial inequality which is caused mainly due to human interventions has several manifestations. Several geographers have attempted to define and measure the spatial disparity. The criteria, methods and approaches of measuring inequality, however, vary considerably [13-24]. There are several variables which have been used to identify this inequality. The United Nations Research Institute for Social Development (UNRISD) listed nine basic components of social well-being. These are: nutrition, shelter, health, education, leisure, security, social stabilty, physical environment and surplus income. However, the important variables which have been used quite frequently are birth and death rate, income per capita, literacy, availability of potable water and shelter.

There are several methods such as linear transformation, Ginni Coefficient, Z Score Method, Principal Component Method and Factor Analysis which have been used from time to time to measure the development disparity level. In the present case, the following variables have been used to undertake this exercise of measuring the level of development in the area under study:

A.   X1. Development Level (production function variable)

B.   X2. Length of road in Km. per `000 sq. Km. area

C.   X3. Length of rail track in Km. per `000 sq. Km. area

D.   X4. Number of under-graduate and post-graduate colleges per lakh population

E.   X5. Number of banks per lakh population

F.   X6. Number of allopathic hospitals per lakh population

G.   X7. Number of cold storage per lakh population

H.   X8. Per head electricity consumption in KWH

I.   X9. Per Capita GDP

J.   X10. Female literacy in percent

K.   X11. Urban population in percent

Based on the composite Z scores of above mentioned variables for 2011, the 27 districts of the Eastern Uttar Pradesh may be put into four categories (Figure 8) which are as under:
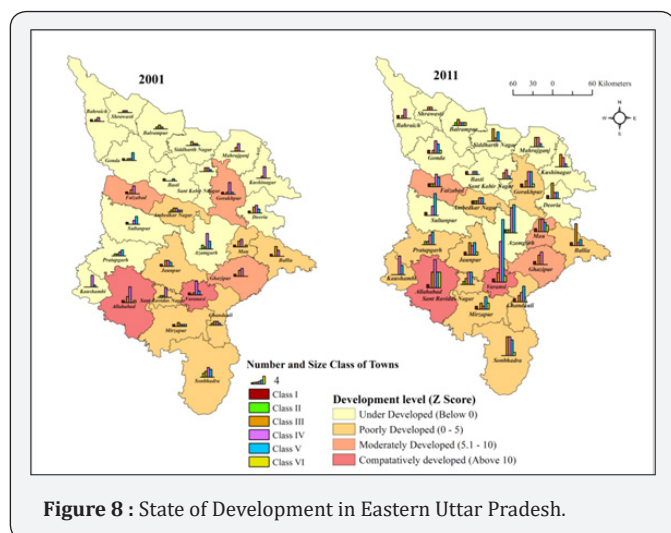

Figure 8 : State of Development in Eastern Uttar Pradesh.

a)   Comparatively Developed Districts (Above 10): There are only two districts in this category i.e. Varanasi (19.18) and Allahabad (13.66). Both Varanasi and Allahabad are metropolises and work as primate cities of the region.

b)   Moderately Developed Districts (5.1-10): This category is represented by Faizabad (8.49), Ghazipur (6.71) and Mau (6.45).

c)   Poorly Developed Districts (0 - 5): As many as 10 districts which fall in this group are- Gorakhpur (4.53), Chandauli (3.3), Sant Ravidas Nagar (2.61), Jaunpur (2.31), Sonbhadra (2.1), Ambedkar Nagar (1.46), Mirzapur (0.82), Ballia (0.65), Kaushambi (0.14), and Pratapgarh (0.06).

d)   Under Developed Districts (Below 0): This forms the major category because nearly half of the districts of the region form the array of under developed districts. Most of the districts in this group are those which are located in the Terai belt of the state of Uttar Pradesh. The districts falling in this category are- Deoria (-1.93), Azamgarh (-2.23), Basti (-3.1), Sultanpur (-4.32), Kushinagar (-4.81), Sant Kabir Nagar (-4.86), Gonda (-6.73), Bahraich (-7.38), Mahrajganj (-7.71), Siddharth Nagar (-8.82), Balrampur (-10.17), and Shrawasti (-10.42). The state of development in this group of districts is very poor.

A comparative analysis of development scores of 2001 and 2011 indicate that the districts which are closely linked with Allahabad and Varanasi have witnessed improvement in their developmental status whereas the districts which are linked with Gorakhpur, yet another primate city of the region, are declining. Even Gorakhpur itself has witnessed low score in 2011 as compared to 2001. Interestingly the districts which were put into the under developed category have further declined in terms of development. This is a matter of grave concern and needs to be pondered seriously at the policy level.

e)   Development Correlates: There are a host of variables which impinge upon the process of development and, therefore, it is well-nigh impossible to capture and locate them all. However, based on 10 variables which have been used to measure the composite development score based on Z score method, inter-correlation matrixes have been worked out for 2001 and 2011. From (Table 7) it is evident that as many as 23 correlations are highly significant. The development score is strongly correlated with 8 (road and rail network, educational institution, banks, cold storages, female literacy and urban population) of 10 variables. Likewise inter-correlation matrix presented in (Table 8) displays 29 highly significant correlations. All the 10 variables are strongly correlated with development score. Even per capita GDP and allopathic hospitals, which were left out in 2001 have shown to have been playing important role in achieving development score.

Table 7: Correlation Matrix of Different Variables, 2001.

2001	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11
X1	1										
X2	.66**	1									
X3	.65**	.69**	1								
X4	.64**	.41*	.26	1							
X5	.60**	.24	.22	.21	1						
X6	.33	.00	-0.11	.13	.13	1					
X7	.56**	.19	.22	.62**	.31	.19	1				
X8	.88**	.53**	.67**	.39*	.49**	.22	.42*	1			
X9	.32	-0.12	.06	-0.03	.29	.13	-0.19	0.28	1		
X10	.81**	.67**	.54**	.68**	.36	-0.03	.49**	.69**	.11	1	
X11	.85**	.51**	.50**	.31	.52**	.39*	0.27	.81**	.44*	.56**	1

Table 8: Correlation matrix of different variables, 2011.

2011	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11
X1	1										
X2	.82**	1									
X3	.72**	.72**	1								
X4	.60**	.43*	0.36	1							
X5	.69**	.45*	0.29	0.22	1						
X6	.58**	0.32	0.22	0.08	.57**	1					
X7	.53**	0.38	0.36	.62**	0.25	0.17	1				
X8	.90**	.73**	.64**	.44*	.61**	.46*	0.35	1			
X9	.62**	0.29	0.35	0.26	.42*	.41*	0.13	.66**	1		
X10	.77**	.80**	.60**	.62**	.43*	0.25	.39*	.59**	0.21	1	
X11	.83**	.70**	.55**	0.24	.64**	.60**	0.13	.89**	.63**	.52**	1

The per capita consumption of electricity (r=.90), percent urban population (r=.83) and road network (r=.82) are strongly correlated with development score attained by the districts of the study area. The application of stepwise regression reveals that the per capita electricity consumption is the most crucial variable in heralding the development and modernization. The other important variables which are in supporting role in augmenting the development are- road network and urban population. It may be concluded that availability of energy in the form of electricity and road network generate development whereas urbanization simply accelerates the process of development.

f) **Some Policy Imperatives for Development:** It may be concluded that the area under study is a typical case of developing economy where pace of development is quite slow mainly due to lack of man-power planning, poor awareness of critical and non-critical zone resources, absence of productive forces, less or no diversification in agriculture, poor industrialization, absence of settlement planning and also due to lack of vision for alternatives of development. Nevertheless, the region does have great potential to take off provided following steps are undertaken to boost and reinvigorate the processes of development.

g) **Spatial Restructuring:** The spatial restructuring demands that there should be a good network of market centers, service centers, growth points, growth centers and growth poles so that the widening gap between urban and rural area can be minimized. There are about 305 towns and 50,632 villages, the ratio being 1 to 166. Even though this is a very crude measure, yet it shows the gap between rural and urban areas. There is a need for two pronged strategies in this context- one at the regional level and the other at the settlement level. Reducing the gap at regional level is important and this can be done by introducing some policy and non policy functions at selected points keeping in view the minimum distance to be travelled by the residents. At the settlement level, the strategy for selective territorial closure may be followed.

This is a strategy which emphasizes on the local level or village level planning based on local resources, local man-power, education and organization. It is assumed that these together generate the capillary action and help in rejuvenating the villages by making them self-reliant [25]. By imparting correct and professional education, strengthening the local organizations and managing the land and water resources, these villages will start playing catalytic role in development process. The current rage for smart city may feasible only when there are smart villages. The strategy of selective territorial closure may help promote the smart villages.

h) **Managing the Productive Forces:** There is dearth of science, scientific temper, adequate power and skilled labour which constitute the productive forces and contribute in the regional development process. The fabric of institution is very weak. The physical, social, economic and political institutions at different spatial hierarchy need to be strengthened so that they are able to play desired role of capacity building of people. Unfortunately, as of now, they are almost dysfunctional. There are hardly any proactive and productive economic institutions. There is a mushroom growth of educational institutions but they also have failed to provide any succor to population by imparting much needed quality education. Even at policy level, there are hardly any social, cultural, economic or research institutions worth the name. In spite of the fact that there is a great scope for agriculture, there are hardly any institutions promoting the cause of research in this field. These need to be addressed on priority basis.

i) **Diversification of the Agriculture:** The age old practice of traditional agriculture continues to perpetuate even in 21st century. The food crops production without much

innovation and diversification has accentuated the poverty of people in the area. While greater emphasis is to be laid on commercialization of agriculture; some alternatives such as floriculture, horticulture, dairying, bee-keeping, viticulture, aquaculture, pisciculture and sericulture have great scope for promotion because the study area has great potential for development of these alternative occupations. The land, water and climatic conditions are quite favorably disposed to take advantage of these alternative ventures in the field of agricultural diversification.

j)   Industrial Development Restructuring: The study area needs industrial restructuring on priority basis. There are several types of industries which may be promoted in Eastern Uttar Pradesh keeping in view the resource potentials of the region such as.

k)   Agro-based Industries: The fertility of soils and all other associated features are so favourable that the area may be turned into one of the granaries of the country. There are several crops such as wheat, rice, maize, sugarcane, oils, pulses and potato which may be produced in surplus provided due attention is paid to promote these crops through innovative techniques, fertilizers, irrigation and HYV seeds, besides, of course, pesticides and weedicides. Once surplus, these crops can turn out to be raw materials for establishing agro-based industries such as flour mills, rice mills, oil mills, sugar mills, pulse mills, maize and potato based products etc. Lately, it has been felt that sesame and flax seeds provide the natural sources for omega-3, and safed musli and menthol can be the herbal product of great commercial value. The study area is best suited for these products.

l)   Forest based Industries: The tarai area and southern uplands have great potential for development of forest based industries such as paper and other ancillary products. There is also a great scope for promotion of silviculture. Infact forest research institute may be established for promotion of different plant species. The terai belt which consists of the districts of Gonda, Behraich, Shrawasti, Mahrajganj, Sant Kabir Nagar, Siddharth Nagar, Gorakhpur and Deorial is in a very deplorable state because the mindset of the people has not changed even after six decades of independence. In spite of the fact that the area has great potential in terms of resources particularly land and forest, the development is yet to take off.

m)   Mineral based industries: The districts of Mirzapur, Sonbhadra and Allahabad have several minerals which can be sources for development of small scale industries. Unfortunately, the minerals found in the area are being handled by some individuals in a most indiscreet manner leading to several environmental problems. There is need to reorganize the mining and mineral based industries through intervention by appropriate authorities that be.

n)   Tourism Development: This can be yet another alternative which needs to be promoted because the study area has several hot pots, religious and historical places of heritage importance which can be developed. The Bankatwa, Chandra Prabha , Barawa and Kachhwa sanctuaries and national parks, Sirsi, Vindham falls and historical monuments of Chunar and Allahabad have great potentials for the development of tourism as a smokeless industry. In fact, Buddhist circuit Kaushambi-Sarnath-Kushinagar-Shrawasti and religious circuits- Allahabad-Vindhyachal-Varanasi need to be taken up on priority basis to promote tourism and enhance the per capita income of the people in the area of study. Currently agri-tourism is gaining momentum and the Eastern Uttar Pradesh can be the best area for promoting this tourism. This will help open up the people, places and area. The unique feature of this area is that there are some villages in Ghazipur which are a bigger than towns and they can be attractive places for foreign tourists to see and understand the locales of these villages. There are several historical sites in the region which may be developed to attract tourists.

o)   Road Rail Network: The development moves through the network of roads and rails. This is evident from the inter-correlation matrix which clearly shows that road (r=.82) and rail (r=.72) networks have very strong relationship with the level of development. Although the area covers about 36 percent of total area of Uttar Pradesh, the per capita availability of road-rail network is very low as compared to Western and central Uttar Pradesh. This is very unfortunate. Even though the geomorphic conditions are quite suitable, yet the infrastructural development is very poor. This needs to be augmented in order to accelerate growth as well as development of the region.

p)   Man-Power Planning: This is the vital segment of development. There is immediate need to promote good and standard education. Besides, making people professionally trained to equip them with skill is the need of the hour. The female education needs attention in particular. In several districts the female literacy is still less than 30 percent. The female empowerment, which is one of the main ingredients of sustainability, may be made practicable only by educating females so that they are able to play the important role in the decision making process. If any priority is to be fixed it is education and that too technical and female education to set the ball of development rolling.

q)   Watershed Development: The two major resources of the study area are land and water. Both can play critical role in the regional development process provided the two resources are properly managed. The fact remains that the area under study forms part of the Middle Ganga Plain and, therefore, it represents one of the most fertile pieces of land with high productive nutrients in the soil. Likewise, this is an area which is very rich in terms of water availability.

Almost every year Gorakhpur, Deoria, Bahraich, Basti, Kushinagar and Maharajganj are experiencing floods due to heavy rainfall and most of the water unfortunately goes as surface runoff. It is imperative that the entire Eastern Uttar Pradesh is divided into mini, micro and meso watersheds in order that both land and water are managed in an integrated manner. If these two resources are preserved, conserved and used for productive purposes, the area can turn into the granary for the entire state of Uttar Pradesh. Unfortunate part of the story is that these two vital resources have been ignored and there is hardly any policy programme to be effectively implemented to harness these two vital resources. The crop diversification, spatial restructuring and industrial development and man-power planning may be made feasible only through management at the watershed level. It is needless to say that watershed management is the only way by which the study area can herald a new era of socio-economic transformation.

r)   Role of Political Economy: This is true that the area has some geographical disadvantages in its development process due to its interior location but this is also true that the political economy has not been favourly disposed to this region. It has rich and fertile agricultural land but neither the crop diversification could be promoted nor could the potential for agro-based industries be harnessed. Despite the fact that this represents one of the most level plain terrain which is favourably disposed to development of good rail-road network. The rail network is almost nonexistent and road network is so very poor that development is not able to accelerate its speed. The region is very rich in terms of historical –cum-religious sites and there are several hot spots here but the tourism potential is not being realized.

The region has strong political background as several leaders took very pro-active part in freedom movement, and there are as many as five prime ministers who have represented this region. Yet it has gone into the background because it has not been able to shape up powerful political leadership in the current context to spearhead the cause of development. Even at the state level, there is a very fluid situation. There is no long term vision of development. Plans, policies, programmes and priorities change with the changing political leadership. The political leadership has been quagmire in cast, creed, sect and nepotism. The development funds are wasted for non-productive purposes. Quite often sizable portions of such funds are pocketed by various interest groups and the targeted beneficiaries receive only a fraction of the allocated funds [26]. Special funding provision was made to develop this region and reduce the disparity by establishing Purvanchal Vikas Nidhi in 1991. But this could not take off in proper perspective simply due to lack of collective leadership [27-30]. The development, which should have been the focus, has gone into the background. These are only a few entry points which need to be plugged before some innovative initiatives are launched.

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