Status of Sugar Industry in Kushinagar district, U.P.

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Abstract

Kushinagar district has a fertile alluvial deposited by Great Gandak and its tributaries which is highly suitable for sugarcane cultivation. As a result, sugar industry is developed as leading agro-based industry in this district since initial age of this industry in the country, but many factors related to sugarcane cultivation as well as sugar mills are pushing the sugar industry to be agglomerated at some places which ultimately brings regional variation in development. Present study is an attempt to analyse the pattern and levels of development of sugar industry at block level. This paper also points out the factors which affect the development of this industry.

Key Words: *Levels of development, patterns of development, region of high development, region of moderate development, region of low development factors affecting development.*

Introduction:

Sugar industry tends to follow the decentralization pattern, but, variation in socio-economic, political and locational factors affect the development and location of sugar industry. Kushinagar district (extended from 83°45ʹE to 84°15ʹE longitudes and 26°45ʹN to 27°15ʹN latitudes, covering an area of 2864.62 km²). is rich in sugarcane production.

Alluvial soil, irrigation facility, adequate rainfall, availability of labour etc. are agricultural infrastructure available in this district for sugarcane cultivation but adequate raw materials are not available to the sugar factories due to different problems of agriculture as well as mills. During the last decade the production of sugarcane has a declining trend due to lacking interest in the sugarcane farming among farmers because of prices instability, lacking consumption of sugarcane in the sugar industries (due to

its illness), replacement of sugarcane farms by other cereals cash crops and several other problems related to farmers and industries itself. Therefore, the study of spatial pattern, levels of development and factors affecting the development of sugar industry is needed to understand for further planning. This study analyses the spatial patterns and levels of development of sugar industry in Kushinagar district.

A) Spatial Patterns of Development of Sugar Industry

Kushinagar district has made significant strides in sugar production following the development of railway web after 1900 and the emphasis laid on further development of sugar industry started from fourth five year plan. The tenth and eleventh five year plans were devoted to decentralizing the sugar industry through establishing new factories in backward areas nearer to

sugarcane production areas. To review the developmental efforts and its impact on the sugar industry of the district, the analysis has been done to explain the pattern of development of sugar industry.

Pattern of established units

The distribution of heavy sugar factories is centralized in the some centres which show lopsided development of sugar industry. As for as the distribution of heavy sugar factories is concerned, six blocks, *i.e.,* Kaptanganj, Ramkola, Hata, Khadda, Padrauna and Sewrahi had one sugar mill each (Table- 1). Remaining blocks had no any sugar mill and distillery in working condition in 2010-11.

Table 1: Heavy Sugar Mills, Capital Investment and Employment

Blocks	Industrial Units		Capital Investment		Industrial Workers	
	Number	%	Crore Rs.	%	Number	%
Kaptanganj	1	16.67	250	13.89	470	12.18
Ramkola	1	16.67	250	13.89	640	16.58
Motichak						
Sukrauli						
Hata	1	16.67	500	27.78	1000	25.91
Khadda	1	16.67	250	13.89	455	11.79
Nebua Naurangiya						
Vishunpura						
Padrauna	1	16.67	270	15.00	545	14.12
Kasiya						
Duddhi						
Fazilnagar						
Tamkuhi						
Sewrahi	1	16.67	280	15.56	750	19.43
Total	6	100	1800	100	3860	100.00

Source: Field Survey and District Industries centre, 2010-11, Kushinagar

Besides, small scale (registered) sugar units (Crushers and *Kolhus*) are developed in the study area. Padrauna block had 42.49 per cent of total small units followed by Duddhi (11.90 per cent), Nebua Naurangiya (8.81 per cent), Kasiya (7.25 per cent), Hata (5.18 per cent) and Ramkola (4.15 per cent) and Tamkuhi (4.15 per cent) in 2010-11. Lowest percentage of small scale (registered) sugar units found in Kaptanganj block (1.55 per cent) followed by Khadda (2.07 per cent), Fazilnagar (2.07 per cent) and Sewrahi (2.07 per cent) in the same year (Table- 2). It clearly indicates that the decentralization of sugar industry is very much needed in the district.

Pattern of Capital Investment

Major part of the capital in heavy sugar mills has been invested in six blocks. Hata block had highest percentage share of capital investment (27.78 per cent) followed by Sewrahi (15.56 per cent), Padrauna (15 per cent) and Kaptanganj (13.89 per cent), Ramkola (13.89 per cent) and Khadda (13.89 per cent).

Table- 2: Small Sugar Units, Capital Investment and Employment

Blocks	Industrial Units		Capital Investment		Industrial Workers	
	Number	%	Lakhs Rs.	%	Number	%
Kaptanganj	3	1.554	1.20	0.819	6	0.84
Ramkola	8	4.145	9.35	6.382	30	4.21
Motichak	6	3.109	1.95	1.331	17	2.38
Sukrauli	5	2.591	8.61	5.877	26	3.65
Hata	10	5.181	7.22	4.928	47	6.59
Khadda	4	2.073	1.77	1.208	14	1.96
Nebua Naurangiya	17	8.808	11.84	8.081	71	9.96
Vishunpura	7	3.627	9.10	6.211	28	3.93
Padrauna	82	42.487	64.13	43.772	305	42.78
Kasiya	14	7.254	11.90	8.122	52	7.29
Duddhi	21	10.881	9.40	6.416	62	8.70
Fazilnagar	4	2.073	1.48	1.010	15	2.10
Tamkuhi	8	4.145	4.41	3.010	26	3.65
Sewrahi	4	2.073	4.15	2.833	14	1.96
Total	193	100	146.51	100	713	100

Source: Field Survey and District Industries centre, 2010-11, Kushinagar

Remaining blocks had no any working sugar mills or ancillaries (Table- 1). The investment pattern in the small scale sugar units is quite different. Padrauna hasd the highest percentage of capital investment (43.77 per cent) followed by Kasiya (8.12 per cent), Nebua Naurangiya (8.08 per cent), Duddhi (6.45 per cent), Ramkola (6.38 per cent), Vishunpura (6.21 per cent), Sukrauli (5.88 per cent), Hata (4.93 per cent), Tamkuhi (3.01 per cent) and Sewrahi (2.8 per cent) while remaining district had less than 2 percent of capital investment (Table - 2).

Pattern of Employment

The distribution pattern of employment in sugar industry brings out an unbalanced regional distribution scenario in the study area. It presents a clear picture of the degree of development of sugar industry in different blocks of the district. Kaptanganj block

(25.91 per cent) provided the maximum percentage of total employment engaged in sugar mills followed by Sewrahi (19.43 per cent), Ramkola (16.58 per cent), Padrauna (14.12 per cent), Kaptanganj (12.18 per cent) and Khadda (11.79 per cent). Rest of the blocks (Motichak, Sukrauli, Nebua Naurangiya, Vishunpura, Kasiya, Duddhi, Fazilnagar and Tamkuhi) had no any sugar mills, but, workers are working in other blocks in sugar mills. Employment in small scale sugar units is found in the all blocks, but, in different numbers (Table-2). Padrauna had the highest percentage of employment (42.78 per cent) followed by Nebua Naurangiya (9.96 per cent), Duddhi (8.70 per cent), Kasiya (7.29 per cent), Hata (6.59 per cent), Ramkola (4.21 per cent), Vishunpura (3.93 per cent), Sukrauli and Tamkuhi (3.65 per cent each), Ramkola (2.38 per cent) and Fazilnagar (2.10 per cent) while Kaptanganj had the lowest percentage of employment (0.84 per cent) followed by Khadda and Sewrahi (each have 1.96 per cent of total employment in small units).

B) Levels of Development of Sugar Industry

Many scholars have attempted to identify the levels of industrialization on the basis of different methods and variables and many sophisticated statistical techniques for multi variable analysis have been used for the rationalization purpose. Identification of industrial concentration is a difficult task (Sharma, 1993). There are so many difficulties in collecting the reliable data especially regarding, value added by manufacturing, power consumption, production, cost of input etc. (Jarrett, 1977). Also, these data are not alone representing the exact situation of industrial level. In this study, levels of development of sugar industry in various blocks are delineated on the basis of number of units per km^2, per capita investment and ratio of employment in sugar industry to total workers. The composite index is calculated from weighted value with the help of the following formula (Sharma, 2004, 2006 and Tiwari and Sharma, 2011, 2014):

$WV = N/M \times 100$

Where,

WV = Weighted value of numbers in the series of indicator,

M = Maximum number in the series, and

N = Number in the series to be weighted

Weighted value is calculated giving 100 as a weight to the maximum number of the series. Every number of the each series is revaluated in the reference to 100 and thus, revalued number is the real rational value of the series and composite index is the weighted value of the sum of revalued numbers. On the basis of above analysis, Kushinagar district has been delineated into three categories: (1) region of high development, (2) region of moderate development and (3) region of low development (Table- 3). Composite value of the district is the break point for delineation.

Table- 3: Index of Sugar Industry Development

Blocks	Heavy Sugar Mills			Small Scale Units (Registered)			Weighted values of Heavy Sugar Mills + Small Scale Sugar Units				
	Units /Km2	Per capita Investment (Rs.)	Workers /1000 population	Units /Km2	Per capita Investment (Rs.)	Workers /1000 population	Weighted Value of Units/ Km2 (A+D)	Weighted Value of Per Capita Investment (Rs.) (B+E)	Weighted Value of Workers/1000 Population (C+F)	Composite Index	Composite Value
	A	B	C	D	E	F	G	H	I	(G+H+I)	
Kaptanganj	0.0056	10960.35	2.061	0.0167	0.526	0.026	59.874	40.165	36.756	136.795	46.10
Ramkola	0.0043	9828.94	2.516	0.0342	3.676	0.118	50.520	53.249	54.256	158.024	53.25
Motichak	0	0	0	0.0347	1.000	0.087	7.509	5.375	9.516	22.401	7.55
Sukrauli	0	0	0	0.0316	4.551	0.137	6.840	24.470	15.005	46.315	15.61
Hata	0.0063	23173.90	4.635	0.0632	3.346	0.218	77.465	96.936	100	274.401	92.47
Khadda	0.0033	9521.56	1.733	0.0130	0.674	0.053	35.643	36.060	34.319	106.021	35.73
Nebua	0	0	0	0.0857	5.291	0.317	18.565	28.453	34.647	81.665	27.52
Vishunpura	0	0	0	0.0321	3.600	0.111	6.960	19.359	12.096	38.415	12.94
Padrauna	0.0036	6181.11	1.248	0.2944	14.681	0.698	100	100	97	296.757	100
Kasiya	0	0	0	0.0957	5.724	0.250	20.727	30.781	27.313	78.822	26.56
Duddhi	0	0	0	0.0872	3.163	0.209	18.898	17.007	22.778	58.684	19.77
Fazilnagar	0	0	0	0.0241	0.650	0.066	5.216	3.496	7.195	15.908	5.36
Tamkuhi	0	0	0	0.0382	1.623	0.096	8.267	8.729	10.451	27.447	9.25
Sewrahi	0.0043	9090.26	2.435	0.0172	1.347	0.045	47.166	38.211	45.002	130.379	43.93
Total	0.0021	5040.94	1.081	0.0666	4.103	0.200	35.290	39.235	39.579	114.104	38.45

Source: District Industries Centre, 2010–11, Kushinagar (U.P.)

The blocks having the composite value less than that of the district (38.477) are considered as region of low industrial development where as the blocks having composite value more than that of the district are grouped in to two categories, i.e., region of high development (composite value more than the average) and region of moderate development (below the average value).
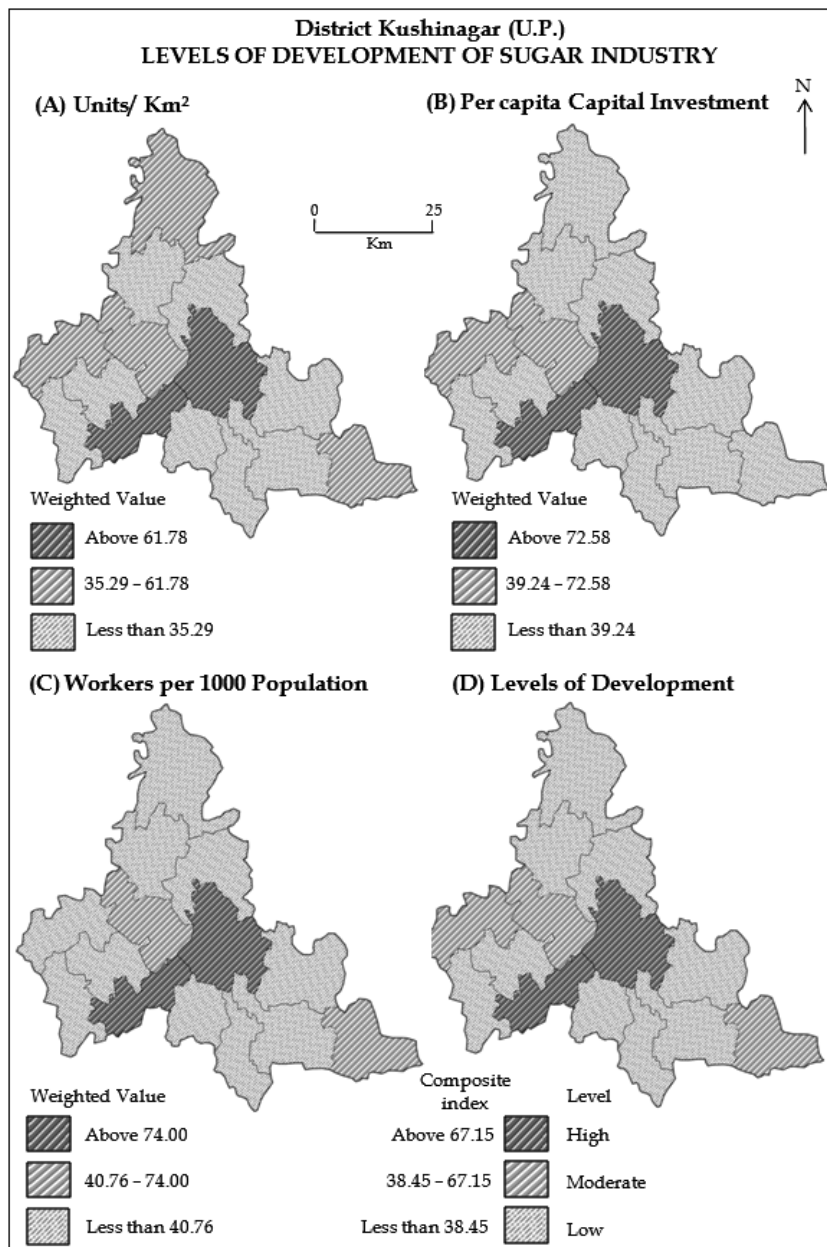

District Kushinagar (U.P.)
LEVELS OF DEVELOPMENT OF SUGAR INDUSTRY

(A) Units/ Km²

(B) Per capita Capital Investment

N

0 ___ 25
Km

Weighted Value
- Above 61.78
- 35.29 – 61.78
- Less than 35.29

Weighted Value
- Above 72.58
- 39.24 – 72.58
- Less than 39.24

(C) Workers per 1000 Population

(D) Levels of Development

Weighted Value
- Above 74.00
- 40.76 – 74.00
- Less than 40.76

Composite index
- Above 67.15
- 38.45 – 67.15
- Less than 38.45

Level
- High
- Moderate
- Low

Fig. 1

Region of High Development

Only two blocks, Padrauna and Hata form the region of high development of sugar industry (Table- 4 & Fig. 1D). This region has 33.34 percent of heavy sugar mills (2 mills) with capital investment of 42.78 percent (Rs. 770 crore) and employment of 40.03 percent (1545 persons) while 47.67 percent of small scale registered sugar unit (92 units) with capital investment of 48.7 percent (Rs. 71.35 lakh) and employment of 49.37 percent (352 persons). Two heavy sugar mills are working in this region, first, New India Sugar Mills was established at Dhadha Bujurg, block- Hata by Birla group's Oadh Sugar Company in 2005 with total crushing capacity of 7000 TCD, capital investment of ₹ 500 crores and employment of more than thousand persons. This mill was started production since 2008 crushing season, and, second, 'J.H.V. Distillery and Sugar Mills limited' was established at Padrauna in 1929, with capital investment ₹ 248.01 lakh which is presently working with total crushing capacity of 6000 TCD, capital investment of ₹ 270 crore and employment of 545 persons.

About all the government activities are centralized here, therefore, the entrepreneurs feel to have preference to establish industries in the surroundings. The entrepreneurs feel a security of the availability of many prominent infrastructures like, power, capital, technology, skilled labour, market and raw materials etc. Padrauna head quarter is linked by railway and road with the interiors of the district and nearby other districts and Hata situated on national highway. Availability of sugarcane, labour and market has given a backup to rural industrialization of this region. However, this region is facing the problem of the sickness in sugar industry, like, a sugar mill at Kathkuyan is closed since 1998.

Table- 4: Structure of Region of High Development

Blocks	Heavy Sugar Mills			Small Scale Units (Registered)		
	% to total units	% to total Invest.	% to total Employ.	% to total units	% to total Invest.	% to total Employ.
Padrauna	16.67	15.00	14.12	42.487	43.772	42.78
Hata	16.67	27.78	25.91	5.181	4.928	6.59
Total	33.34	42.78	40.03	47.67	48.7	49.37

Source: District Industries Centre, 2010-11, Kushinagar (U.P.)

Region of Moderate Development

Three blocks, Ramkola, Kaptanganj and Sewrahi form the region of moderate development of sugar industry (Table- 5 & Fig. 1D). This region has 50 percent of heavy sugar mills (3 mills) with capital investment of 43.34 percent (Rs. 780 crore) and employment of 48.19 percent (1860 persons) and 7.77 percent of small scale registered sugar unit (15 units) with capital investment of 10.03 percent (Rs. 14.7 lakh) and employment of 7.01 percent (50 persons).

Table 5: Structure of Region of Moderate Development

Blocks	Heavy Sugar Mills			Small Scale Units (Registered)		
	% to total units	% to total Invest.	% to total Employ.	% to total units	% to total Invest.	% to total Employ.
Ramkola	16.67	13.89	16.58	4.145	6.382	4.21
Kaptanganj	16.67	13.89	12.18	1.554	0.819	0.84
Sewrahi	16.67	15.56	19.43	2.073	2.833	1.96
Total	50.00	43.34	48.19	7.772	10.034	7.01

Source: District Industries Centre, 2010-11, Kushinagar (U.P.)

Three heavy sugar mills were working in this region in 2010-11. The first large scale sugar mill was installed in 1914 in Tamkuhi Road in Sewrahi block by "United Province Company". Presently, this unit is working under 'Uttar Pradesh State Sugar Corporation Ltd.' which has total market value of Rs. 280 crore, 5500 TCD crushing capacity and 750 employees. Second is 'Triveni Engineering and Industries Limited' was established at Padrauna in 1932. In 2011, this unit had crushing capacity of 6500 TCD, capital investment of ₹ 250 crore and employment of 640 persons, while, third is 'Kanoria Sugar and General Manufacture Limited' that was established in 1934 at Kaptanganj, district- Kushinagar with capital investment of ₹ 242.17 lakh which has presently crushing capacity of 6000 TCD, capital investment of ₹ 250 crore and employment of 470 persons.

Thus, the historical development supported by the resource availability and infrastructure development, Sewrahi and Kaptanganj are emerging as industrial centres in the corner part of the district. Hata has come up in the industrial scene after new industrial policy. This is facing the problems of capital, replacement of old machines, skilled labour and entrepreneurs. However, this region is moderately rich in sugarcane production and liked with railway and roads. Hence, it has good potential for sugar industry development.

Region of Low Development
Remaining blocks, namely, Motichak, Sukrauli, Khadda, Nebua, Naurangiya, Vishunpura, Kasiya, Duddhi and Fazilnagar are included in the region of low development of sugar industry (Table- 6 & Fig. 1D).

Table 6: Structure of Region of Low Development

Blocks	Heavy Sugar Mills			Small Scale Units (Registered)		
	% to total units	% to total Invest.	% to total Employ.	% to total units	% to total Invest.	% to total Employ.
Motichak	--	--	--	3.109	1.331	2.38
Sukrauli	--	--	--	2.591	5.877	3.65
Khadda	16.67	13.89	11.79	2.073	1.208	1.96
Nebua Naurangiya	--	--	--	8.808	8.081	9.96
Vishunpura	--	--	--	3.627	6.211	3.93
Kasiya	--	--	--	7.254	8.122	7.29
Duddhi	--	--	--	10.881	6.416	8.70
Fazilnagar	--	--	--	2.073	1.010	2.10
Tamkuhi	--	--	--	4.145	3.010	3.65
Total	16.67	13.89	11.79	44.561	41.266	43.62

Source: District Industries Centre, 2010-11, Kushinagar (U.P.)

This region has 16.67 percent of heavy sugar mills (1 mill) with capital investment of 13.89 percent (Rs. 250 crore) and employment of 11.79 percent (455 persons) and 44.56 percent of small scale registered sugar unit (86 units) with capital investment of 41.27 percent (Rs. 60.46 lakh) and employment of 43.62 percent (311 persons).

Only one sugar mill of Indian Potash Limited (Sugar & Chemical) was established in 1932 at Khadda town nearer to railway station by Padrauna state. Since 2010, this mill is working with crushing capacity of 1200 TCD and employment to 455 persons. Market value of factory was more than 250 crore in 2010-11. This region is facing the problems of lack of skilled labour, discontinuation of power supply, non-mobilization of raw materials and finished goods due to very poor transport facilities, poor communication, lack of modern technology, lack of entrepreneurs and capital etc..

Factors Affecting the Development of Sugar Industry

Sugar industry basically developed into sugarcane producing areas in Kushinagar district, but many other factors are involved in development. Kushinagar district has large net sown area, monsoon climate, alluvial soil and high agricultural labourers which create suitable environment for sugarcane cultivation, the only profitable crop in this region. In study area, sugar industry developed mostly in those blocks which are well connected with railway network. Normally, sugar mills are established nearer to railway stations, like, Kaptanganj, Luxmiganj, Ramkola, Padrauna, Kathkuyan, Tamkuhi Road, Khadda and Chhitauni. These sugar mills were established under

the 'British India Corporation' or outsiders entrepreneurs and at present, many of these are closed or worked under private sectors. After independence, development of road transport minimized transport cost, so, modern sugar mills are developed nearer to sugarcane producing areas. Old sugar mills were also dependent on governmental power supply, but modern mills have own power plants and they generates power for self use and for sell also. Besides, advance cane forming, development of water sites and availability of entrepreneurs are other major factors which help in development of sugar industry.

Conclusion

Analysis of spatial pattern of development of sugar industry shows that some blocks are more developed due to high quantity of sugarcane production. Sugar industries are exclusively developed in the areas of intensive sugarcane cultivation, like, Padrauna, Kaptanganj, Hata, Sewrahi and Ramkola blocks. These blocks have the 5 sugar mills (83.33 per cent) out of total 6 of the total district, whereas, small scale sugar units are scattered mainly in remote villages in these blocks. Agricultural products are sufficient in this district, but lack of infrastructure facilities, like, entrepreneurs, skilled labourers, capital, technology, power sources, transport and communication facilities etc; socio-economic backwardness and lack of political-will are responsible for backwardness in industrial sector.

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