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Regional Disparities in the Levels of Agricultural Development in Siwan District of Bihar

Geography

Tabassum Jahan Research scholar Prof.Nizamuddin Khan Department of Geography Aligarh Muslim University, Aligarh 202002

ABSTRACT

Regional disparities have become one of the most important glaring and growing problems not only in developing countries but also in the most advanced countries of the world. Agricultural region is a device for identification of weaker and prosperous zone of agriculture development. The regional approach plays a vital role in the analysis of regional disparities in the farming practices and for interpretation of the changing pattern of agricultural regions. Siwan has a total geographical area of 2219 sq.km of which the net sown area is 165114(in Hactares).

The soil, climate and general topography of the district are ideal for the cultivation of food as well as non-food crops. The principal objective of this paper is to determine the level of agricultural development at block level of Siwan district. The position of agricultural development in the district conceals remarkable block-wise variations. The present study aims at analyzing the patterns of agricultural development in the district.

KEYWORDS:

regional disparity, correlation matrix, composite standard score, levels of agricultural development

Introduction

Agriculture, therefore continued to be central to all strategies for planned socio-economic development of the country .Rapid growth of agriculture is essential not only to achieve self-reliance at national level but also for household food security and to bring about equity in distribution of income and wealth, resulting in rapid reduction in poverty levels. Kanwar(1970) has focused attention on modernization of Indian agriculture. According to him the new technology of production is based on the use of fertilisers, HYV Seeds, pesticides, scientific water management and other agronomic practices. In this way, the suitable implements machineries have become necessity for the development and modernization of the Indian agriculture. Alam (1974), using the data for individual tehsils ih his study of regional disparities in agriculture development in Andhra Pradesh, employed six indicators from the agricultural sectors. Two of these related to productivity and four to agricultural development

The term Agricultural development refers to growth and over all changes in agriculture resulting in vertical expansion. The development of agriculture should be assessed not only by productivity levels but also with reference to inputs such as yielding varieties of seeds, fertilizers, irrigation (Sharma(1976). The study of agricultural development if immense important in agricultural planning as it help to identify problematic area which might give clue to the planners to adopt proper remedial measures for correcting imbalances (M.G.Jadhave 1997).

Study Area

Siwan is located in the western part of the Bihar It lies between 25° 53' to 26°23' north latitude and 84°1' to 84°47' east longitudes. It is bounded by the district of Gopalganj from the north ,Deoria district(UP) from west ,west, the Saran district from east and by the river Ghaghra (Geora and Saryu) from south which lies the district of Ballia.The total area of the district is sq. km and total population is persons. At present there are nineteen functional blocks in the district namely Mairwa, Guthani, Darauli, Ander, Hussainganj, Siwan Sadea, Barharia, Pachrukhi, Goriakothi, Basantpur, Bhagwanpur Hat, Darauda, Siswan, Raghunathpur, Nautan, Ziradei, Hasanpura, Lakri Nabiganj

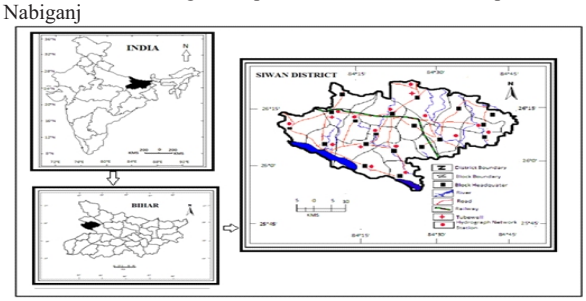

Figure 1. Map of the Study Area

Objectives

1. To access the regional variation of levels of agricultural development in the study region,
2. To examine the geographical patterns of regional disparities in Siwan district,
3. To assess the indicators responsible for the imbalance in agricultural development in the study Area.

Database and research methodology

The present work is based on secondary source of data. The relevant data is collected from the District Statistical Handbook. We have taken blocks as a unit at micro level under study. In order to determine levels of agricultural development following variables are considered.

Table 1. Selected Variables of Agricultural Development in Siwan District

S. No.	Variables	Definition
1.	X_1	Percentage of Working Population to total Population
2.	X_2	Percentage of Literate Population to total Population
3.	X_3	Percentage of Agriculture Worker to total Workers
4.	X_4	Percentage of Cultivators to total Workers
5.	X_5	Percentage of Net Sown Area to Total Geographical Area
6.	X_6	Percentage of Net irrigated Area to Net Sown Area
7.	X_7	Percentage of Canal irrigation to Net irrigated area
8.	X_8	Percentage of Tank Irrigation to Net Irrigated area
9.	X_9	Percentage of Well and Tube Well irrigation to net irrigated area
10.	X_{10}	No. of Diesel Engine Pump-set per thousand of net sown area
11.	X_{11}	No. of tractors per thousand of net sown area
12.	X_{12}	.No. of iron and Wooden Ploughs per thousand of net sown area
13.	X_{13}	Fertilizers consumption in kg per hectare of net sown area
14.	X_{14}	Cropping Intensity
15	X_{15}	Irrigation Intensity
16.	X_{16}	No. of rural Markets

To determine the overall levels of agricultural development and its uneven distribution in the study area the data of the all indicators have been transformed into indices using Z-score technique. The formula is

$$Zi = (Xi - \bar{X})/SD \quad \ldots\ldots\ldots\ldots (1)$$

Where,
Zi = Standard score of the ith observation,
Xi = Actual value of the ith observation,
$\bar{X}$ = Mean of the value of X variable,
SD = Standard deviation of X variable

Further, the results of the standard score obtained for different indicators, were aggregated by composite standard score (CSS) so that regional disparities in the levels of agricultural development of blocks are obtained on a mean and standard deviation scale. The composite score may be algebraically expressed as

$$CSS = \frac{\sum Zij}{N} \quad \ldots\ldots\ldots\ldots(2)$$

Where,
CSS= Composite Standard Score,
Zij = Z-score of an indicator j in block I,
N = Number of indicators.

In order to classify the blocks according to their levels of agricultural development the composite Z-score have been divided into three classes that are high, medium and low.

Result and Discussion

Levels of Agricultural Development

After calculating composite slandered score for all blocks, following results were obtained. For sake of interpretation value of index are grouped into three categories.

High Level of Agricultural Development (Above + 0.014)

Fig. 2 displays the high level of agricultural development of the study region 2013 – 2014.This group of agricultural development covers 26.31 per cent area of the district. In this category, five blocks have been identified, namely Mairwa(+ 0.543), Barharia(+ 0.164), Pachrukhi, (+0.180), Basantpur (+0.693), Guthani(+149) achieved high lavel of agricultural development due to well-developed agricultural infrastructure facilities.
Moderate Level of Agricultural Development (Between -0.014 and + 0.014)

This category covers just half of the district of the area. This group of the agricultural development cover 42.10 per cent of the area of the district. Eight blocks have identified in this category, namely Nautan, Lakri Nabiganj, Bhagwanpur Hat, Siwan, Maharajganj, Siswan, Hussain Ganj and Ander. These blocks experienced moderate agricultural infrastructure facilities.

Low Level of Agricultural Development (Below-0.014)

It comprises six blocks 31.57 per cent area of the district Zera Dai (-0.324) Goriakothi (-0.251), Daraudha (-0.323), Hasanpura (-0.430), Raghunathpur (-0.161), Darauli (-0.360) because these blocks experienced poor s infrastructure of agricultural development.

Table 2. Composite Standard Score of the Variables for the Agricultural Development in Siwan District

BLOCKS	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15	X16	CSS
Nautan	0.05	-0.21	1.12	0.46	-0.12	1.76	-1.31	-0.25	-1.58	2.72	0.96	2.00	-0.94	-1.61	-0.44	-1.06	**0.097**
Mairwa	1.28	1.16	-0.63	-1.01	1.71	1.32	1.33	-1.51	0.86	1.51	1.63	1.15	-0.82	0.79	-0.50	0.40	**0.543**
Zeradei	0.22	0.69	0.39	-0.33	-0.54	-0.99	0.29	-0.42	0.86	-0.72	-1.12	-1.03	-0.94	-0.67	-1.51	0.63	**-0.324**
Siwan	0.98	2.68	-2.31	0.97	0.37	-0.46	-0.26	0.28	0.32	-0.02	-1.37	-0.63	-0.26	-1.04	-1.09	1.31	**-0.034**
Barharia	1.28	-0.11	1.26	-0.80	0.16	-1.39	0.39	0.53	0.86	-1.56	-0.59	-1.26	1.54	-0.01	1.35	0.97	**0.164**
Pachrukhi	1.45	0.18	-1.07	0.45	0.56	-0.49	-0.63	1.24	0.09	-0.84	0.09	-0.57	1.05	-0.35	0.54	1.19	**0.180**
Goriakothi	0.27	-0.99	1.09	-0.30	-0.95	-0.89	0.51	-0.73	0.86	-0.70	-0.65	-0.22	-0.42	-0.01	0.19	-1.06	**-0.251**
Lakri Nabiganj	-0.17	-2.36	-0.16	2.19	-1.91	0.71	2.06	-1.69	0.86	0.63	-0.48	1.39	0.08	-0.65	-0.75	0.52	**0.018**
Basantpur	-0.94	-0.73	-0.21	0.65	1.70	2.09	0.55	-0.08	1.06	1.14	2.12	1.45	1.32	-0.03	-1.43	2.43	**0.693**
Bhagwanpur Hat	-0.97	0.60	0.25	0.55	-0.46	-1.11	0.15	-0.12	-0.59	-0.54	-0.01	-1.43	1.22	1.22	0.59	0.29	**-0.023**
Maharajganj	-0.54	-0.33	0.16	-1.00	0.22	0.03	0.98	0.07	-1.16	-0.53	1.45	-0.78	1.94	1.25	-0.35	-0.61	**0.051**
Daraudha	-0.96	-0.17	0.63	-1.08	0.11	-0.72	-0.60	1.23	-1.99	-0.55	-0.75	-0.83	-0.93	1.87	0.62	-1.06	**-0.323**
Hasanpura	-1.24	-0.40	-1.68	1.11	0.23	0.06	0.18	-0.39	0.08	-0.10	-0.44	-0.27	-0.94	-1.54	-0.49	-1.06	**-0.430**
Siswan	1.23	-0.34	1.28	0.10	-0.50	0.15	1.29	-1.70	-0.72	0.04	-0.07	0.15	-0.80	0.28	1.77	-0.84	**0.083**
Raghunathpur	-0.18	-0.50	1.01	-0.39	0.88	-0.97	-0.23	-0.37	-1.79	-1.06	-1.07	-0.14	-0.81	1.55	2.10	-0.61	**-0.161**
Hussainganj	-1.27	-0.06	-0.87	-2.23	1.15	0.66	-1.31	0.80	0.37	0.48	0.40	1.31	-0.52	0.16	0.21	0.07	**-0.041**
Ander	-0.81	0.00	-0.33	0.79	-0.49	0.05	-1.23	1.98	0.43	0.39	-0.25	-0.02	-0.22	-0.96	-0.62	-0.05	**-0.083**
Darauli	1.40	-0.04	0.19	-0.28	-1.98	-0.61	-0.65	0.22	0.32	-0.32	-0.80	-0.26	-0.62	-0.54	-0.43	-0.50	**-0.307**
Ghutani	-1.08	0.91	-0.12	0.15	-0.14	0.79	-1.51	0.93	0.86	0.02	0.95	0.00	1.05	0.28	0.24	-0.95	**0.149**

Source: Computed by Researcher

Table 3: Levels of Agricultural Development in Siwan District, 2013-14

Category	CSS Range	No. of District	Percentage of the Total District	Name of the Blocks
High	Above + 0.014	5	26.31	Mairwa, Barharia, Pachrukhi, Basantpur, Guthani
Medium	Between -0.014 and + 0.014	8	42.10	Nutan, Lakri Nabiganj, Bhagwanpur Hat, Siwan, Maharajganj, Siswan, Hussain Ganj, Ander
Low	Below – 0.014	6	31.57	Zera Dai Goriakothi, Daraudha, Hasanpura, Raghunathpur, Darauli
TOTAL		19	100	

Source: Computed by researcher based on Table 2

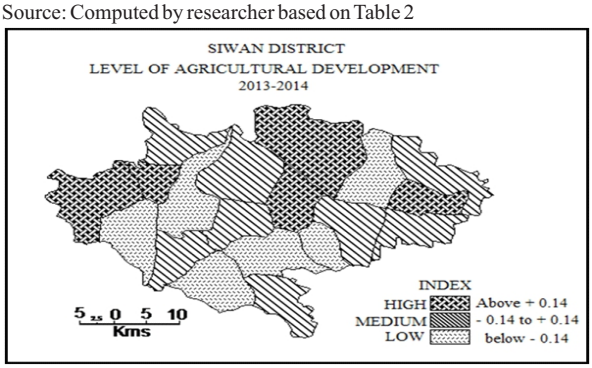

Figure 2. Location Map of the Study Area

Conclusion

The above analysis clearly indicates that the level of agricultural development is not uniform in Siwan District. The study highlights that the majority of the district comes under the medium category of agricultural Development. It is clear that Zeradei, Gorikothi, Daraudha, Darauli, Hasanpura and Raghunathpur due to low infrastructure agricultural facilities. The region which have high level of agricultural development, i.e. Mairwa, Barharia, Pachrukhi, Basantpur, Guthani are not need of any special effort because they have developed infrastructure of agricultural development. The regional disparities in agricultural development have shown its profound impact in the overall development of the region and the socio-economic life of the people. The low level of agricultural development is due to poor infrastructure facilities; therefore, there is a need of special attention towards infrastructures.

References

1. Chand,et.al (2011): "Total Factor productivity and Contribution of Research investment to agricultural growth in india", Policy Paper 25, National Centre of Agricultural Economics and Policy Reserch, New Delhi,Xiii,74 Page.
2. Ajagekar.B.A and Masal.N.S (2011): "Regional Disparities in the Level of Agricultural Development in the Kolhapur District of South Maharashtra", ISRJ, Vol.1, Pp. 139-144.
3. Pagar S. D. (2009): "Spatial pattern and level of Agricultural Development in the Nashik District, Maharashtra", Maharashtra Bhugolshashra Sanshodhan Patrika, Vol. 23, No.01, Pp. 60-71.
4. Sharma R. (2014):Regional Disparities in the levels of Agricultural Development in Aligarh District of Western U.P.,Vol.4,Issue8, Uttar Pradesh International Journal of Scientific and Research Publications.
5. Shrivastava S.L. (1983): "Regional Disparities in Agricultural Development in Madhya Pradesh", Indian Journal of Regional Science, Vol. XV, No.2, Pp 55 to 60.