



A GEOGRAPHICAL STUDY OF AGRO-INDUSTRIAL LANDSCAPE IN LAKHISARAI DISTRICT

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ABSTRACT:

A landscape that has been modified by the effects of human activities related to industrial development is generally termed as industrial landscape. An industrial landscape is a type of cultural landscape where human activities become ahead of primary activities through processing work. Industrial landscape is that area where intensive industrial activities are performed. In the district, there is potential of developing agro-industrial landscape. The entire district is an agricultural dominated economy hence the possibility appears to develop the agro-industrial landscape. Lakhisarai, Ramgarh Chowk, Halsi, Chanan etc are the small industrial centres. In this kind of agricultural diversification, farmers are taking a further step towards developing industrial landscape. Activities like horticulture, agro-forestry, and livestock rearing etc. will provide impetus towards industrialization.

KEYWORDS:

MAINSTAY, AGRICULTURAL ACTIVITIES, DIVERSIFICATION, FOODSTUFF, TECHNICAL LABOURERS, SCIENTIFIC IMPLEMENTS.

INTRODUCTION:

Lakhisarai district is an agricultural dominated economy. Agricultural land utilization is the most dominant form of resource utilization in the area under study. Being a part and parcel of the Gangetic plain, the district is predominantly an agricultural tract and will remain in similar condition in the years to come as around 80% of its working population is engaged in agricultural pursuits. To some extent agricultural methods and implements, scientific instruments like tractors, land tillers, threshers, pumping sets, electric motors etc. used in different parts of the region coupled with the developed methods of cultivation that require only skilled or technical laborers. Between two extremes the general elevation is lower, and considerable areas are liable to inundation (Yadav, R.P.1988,pp.53-59). The soil of the district is their entirely alluvial.

HYPOTHESIS:

- Per hectare agro-production is low.
- Garma crops are grown but in lower proportion in every block of the district.
- Diversification and commercialization of crops are seen in limited area.
- Limited development of infra-structural facilities discourage the diversification and commercialization of agriculture.

METHODOLOGY:

The District Census Handbook of the district concerned is the source of secondary population data while the agricultural statistics available in the district. The research in population Geography is the product of data analysis procured from numerous sources that include both

published and unpublished materials, maps, charts, tables, data and statistics. For such a large area, it was felt necessary to rely on the secondary sources rather than on a primary one.

NATURE OF DIVERSIFICATION:

The statistical data mentioned above of the district represents that rabi crops dominates. A number of crops grown in the region have been grouped under the following from headings of (i) Cereals (ii) Pulses and other food crops (iii) Oil seeds (iv) Others. These crops have been classed into three agricultural seasons. (i) Bhadaï or autumn crops. (ii) Agahani or winter crops. (iii) Rabi or spring crops. The following table shows block-wise distribution of harvest-wise crops:

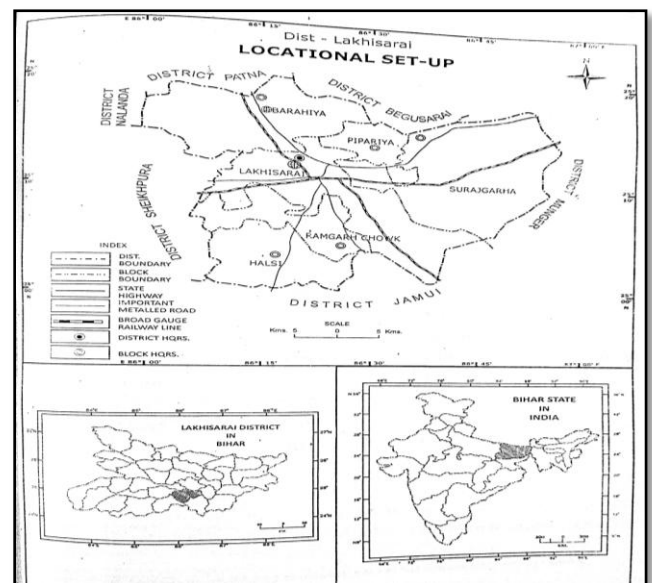


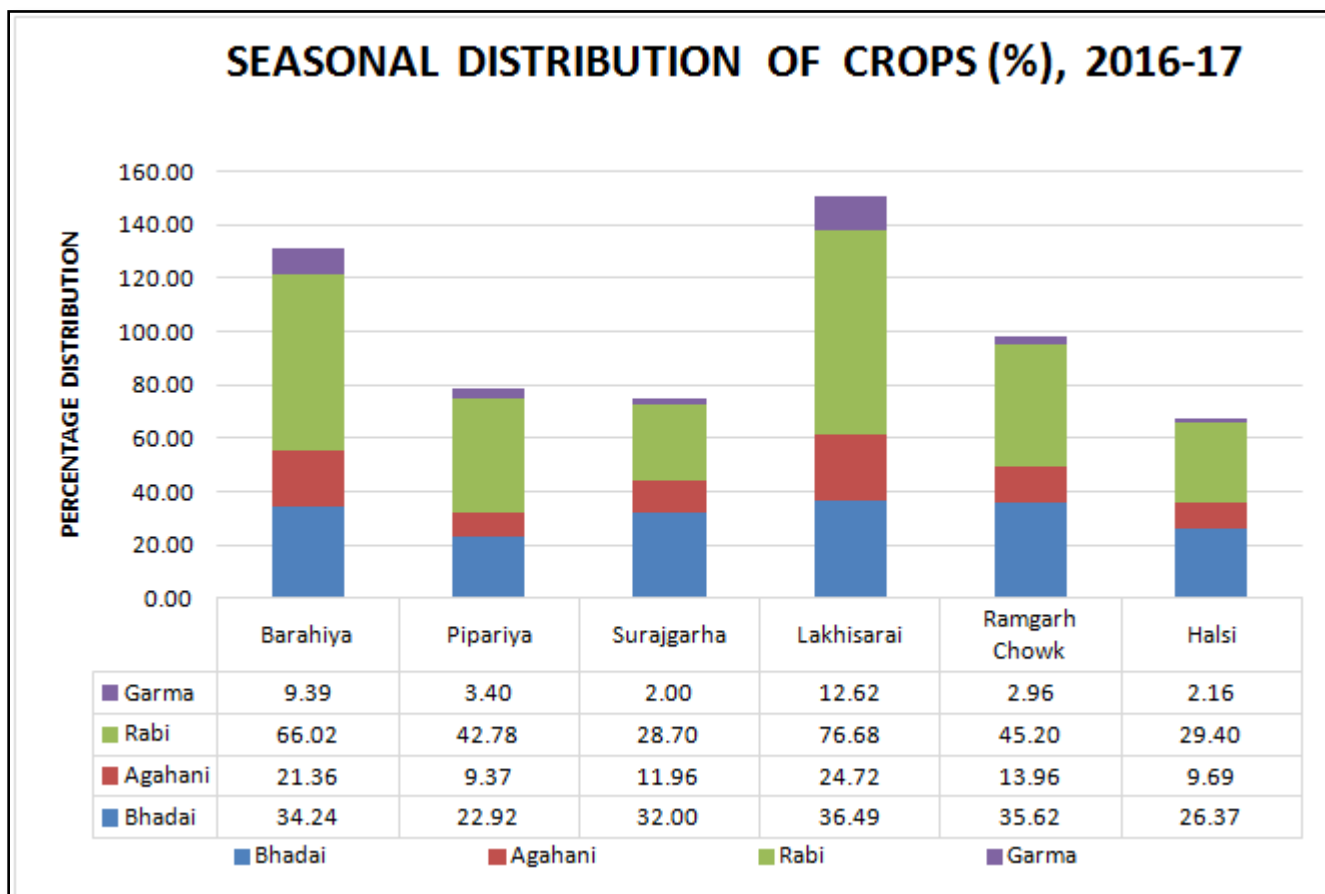
TABLE - 01 DIST.—LAKHISARAI: SEASONAL DISTRIBUTION OF CROPS (%), 2019-21

S.N.	BLOCKS	BHADAI	AGAHANI	RABI	GARMA
1.	Barahiya	34.24	21.36	66.02	9.39
2.	Pipariya	22.92	9.37	42.78	3.40
3.	Surajgarha	32.00	11.96	28.70	2.00
4.	Lakhisarai	36.49	24.72	76.68	12.62
5.	Ramgarh Chowk	35.62	13.96	45.20	2.96
6.	Halsi	26.37	9.69	29.40	2.16
	Dist. Total	31.27	15.18	48.13	5.42

Source: District Agricultural Office, Lakhisarai.

The statistical data mentioned above of the district represents that rabi crops dominates the agricultural region. Rabi crops are grown on 48.13 percent of the total cropped area while bhadai crops are grown on 31.27 area

and agahani crops are grown on 15.18 percent of the total cropped area. Garma crops are grown on limited area where irrigational facility is available.



Out of the total cropped area, only 5.42 percent area is covered by garma crops. The average pressure of population on land is 8 persons per hectare and the

average pressure of population on cultivable land to 10 persons per hectare. The following table shows crop-wise area and production:

TABLE - 02 DIST.-LAKHISARAI: AREA (HECT.) UNDER CROPS AND PRODUCTION (TONS), 2019-20

S.N.	Crops	Area	Prod.	Phpt*
1	Rice	30280	190660	6.30

2	Wheat	22390	81000	3.62
3	Maize	7130	53690	7.53
4	Barley	4560	3000	0.66
5	Masur	1250	4692	3.75
6	Gram	7490	32560	4.35
7	Arhar	2600	8421	3.24
8	Pea	1600	1330	0.83
9	Potato	2420	50890	21.03
10	Sugarcane	2140	78230	36.56
11	Others	N.A.	N.A.	N.A.
12	Total	81860	504473	6.16

Source : District statistical office, Lakhisarai., 2019-20

*Area—Area in hect., Prod—Production in m.tons. Phpt— Per hect. Production in m.tons.

The above mentioned table shows crop-wise area and production. As according to the statistical report of district office, Lakhisarai. The area engaged under rice is 30280 hectares from which the average productivity is 6.3 tons per hectares and the total production in the district in 2019-20 was 190660 tons.

- **IMPORTANT CROPS:**
- **RICE:**

Rice cultivation is being intensified along with the growing population of the district. Rice is the most important food grain of the district hence attains an eminent place among

the crops of the region both in acreage and production. It occupies an area of 30280 hectares under all varieties i.e. Aghani, Garma, Vasmatee, Bhadai and high yield varieties. The Bhadai rice which covers 878.6 hectares is sown in June or July and is locally known as Bogga. The important varieties of rice that are being generally grown in the region are Pankaj, Shweta, Malena etc. he Bhadai rice which covers 878.6 hectares is also sown in June or July and not transplanted which is locally known as Jalai. The following table shows the block-wise details of paddy crops:

TABLE: 03 DIST.- LAKHISARAI AREA UNDER RICE AND PRODUCTION (2019-20)

S.N.	Block.	Area	Prod. in tons	Prod. per hect.
1.	Barahiya	4236	25685	6.06
2.	Pipriya	857	4856	5.67
3.	Surajgarga	4185	21227	5.07
4.	Lakhisarai	9431	71948	7.63
5.	Ramgarh Chowk	3138	21466	6.84
6.	Halsi	8433	45478	5.39
	Dist.- total	30280	190660	6.30

Source : Agricultural statistics, Govt. of Bihar, 2019-20

The above mentioned table shows the area under rice along with rice production and per hectare rice production. Its total production was 190660 tons while its average per hectare rice production was 6300 kg. per hectare. The highest area under rice cultivation was found in Lakhisarai and Halsi blocks that was 9431 and 8433 hect. respectively. The highest rice production that was 71948 tons in Lakhisarai block next followed by Halsi block. But the highest per hectare production is found in

Lakhisarai block (7630 kg.) next followed by Ramgarh chowk block.

- **WHEAT:-**

The geographical distribution of wheat is controlled primarily by winter rain. In the district, wheat covers only 40% of the net cropped area and is next to rice in importance. The following table shows the latest data regarding wheat cultivation:

TABLE - 04 DIST.- LAKHISARAI : AREA UNDER WHEAT AND PRODUCTION, 2019-20

S.N.	Block	Area in hect.	Prod. in tons	Kg. per hect
1.	Barahiya	4357	14846	3.41
2.	Pipriya	935	1957	2.09
3.	Surajgarga	1254	3724	3.13
4.	Lakhisarai	4273	15374	3.60
5.	Ramgarh Chowk	3138	10478	3.34
6.	Halsi	8433	34421	4.08
	Dist.- total	22390	81000	3.62

Source : Agricultural statistics, Govt. of Bihar, 2019-20

The above mentioned table shows the area under wheat cultivation along with wheat production and per hectare wheat production rate. But in the areas of intensive cultivation mostly in Barahiya, Pipriya and Surajgarha and Lakhisarai blocks. The total area under wheat cultivation in the district of Lakhisarai is 22390 hectares in 2019-20 and its total production was 81000 tons while its average per hectare wheat production was 3620 kg. per hectare. The highest area under wheat cultivation was found in Halsi block that was 8433 hectares along with the

wheat production that was 34421 tons and the per hectare production that was 4080 kg. per hectare.

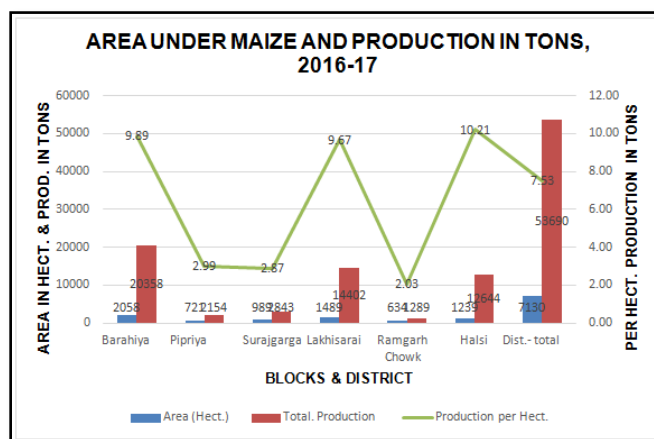
▪ MAIZE:-

Maize is the most important agahani crop that is sown in October or November and harvested in April. It is grown on some modest scale in the homesteads of lowland villages and in the doab areas of the villages. These lands are much fertile and well cared. Maize is the next important crop after paddy and wheat accounting 7130 hectares of land from which 53690 tons of maize was produced at the rate of 7.53 tons per hectare.

TABLE- 05 DIST.: LAKHISARAI: AREA (HECT.) UNDER MAIZE & PRODUCTION (TONS), 2019—20

S.N.	Name of blocks	Area (Hect.)	Production	Prod./ Hect.
1	Barahiya	2058	20358	9.89
2	Pipriya	721	2154	2.99
3	Surajgarga	989	2843	2.87
4	Lakhisarai	1489	14402	9.67
5	Ramgarh Chowk	634	1289	2.03
6	Halsi	1239	12644	10.21
	Dist.- total	7130	53690	7.53

Source: Agricultural statistics, Govt. of Bihar, 2019-20



The total hectareage under maize in the district is 7030. The

largest hectareage (2058) under maize crop is found in

Barahiya block next followed by the blocks of Lakhisarai, Halsi, Surajgarha and Pipariya while the lowest hectareage (634) is found in the block of Ramgarh chowk. The total maize production in the district is 53690 tons at the rate of 10.21 tons per hectare. The highest production is found in Barahiya block while the lowest is found in Ramgarh chowk block. The highest per hectare production is found in Halsi block.

BARLEY:-

A crop harder than wheat growing on light sandy is known as barley. It is usually grown in unmanured loams which are generally ploughed one or two times before sowing on loamy soils. It relishes balsundari soil and seldom prefers light soils. The total production of barley in Lakhisarai district is 3000 tons from 4560 hectares of land. Its productivity in the district is only 0.66 tons per hectare.

MISCELLANEOUS FOOD GRAIN :-

After rice and wheat, the net largest area is sown under miscellaneous food grains. The miscellaneous food grains are khesari, arhar, peas, masur, kodo, china, urid, mung, janera and oats.

PULSES:-

Within the region, masur, peas, arhar, urad, mung etc. are important in pulses. The total hectrage under masur, arhar and peas, etc. are 1250, 2600 and 1600 hectares respectively. Masur and Arhar amount to 4692 and 8421 tons as annual production respectively. The maximum production comes from Surajgarha, Lakhisarai and Barahiya blocks.

GRAM:-

A principal rabi pulse, is sown well on the light soil and kewan soil. It requires winter rain or sometime irrigation also. It is sown in October and harvested in March and April. It is a leguminous crop which needs no manuring rather than it helps in building up the fertility of the soil. It is grown mostly mixed with other rabi crops like wheat, barley etc. and remains unirrigated and unweeded. The main hindrance in its cultivation is the winter frost at the time of its flowering.

OIL SEEDS:-

Mustard, rape seed and linseeds grown in Lakhisarai district are most important oil seeds and others are sesame, castor surguja, etc. rapeseed. Mustard flourish in the humid area of the region while linseed likes drier climate and is grown in the drier areas. This condition confines the rape seed and mustard in the southern and south-western portion of Lakhisarai district. These are used in food for men as edible oils and for animals as cakes. These oil seeds are grown in every block of the district.

SUGARCANE:-

Sugarcane is the important cash crop of the district. Sugarcane is planted during February and March in cutting of about a foot in the length placed in rows about two feet

apart. . It is considered to be one of the most profitable commercial crops which not only exhausts the soil but also occupies the ground for a long period extending over a year. The crop requires great care and must have seven or eight watering even if other crops have to do without water. The average area under cane cultivation in the district is 2140 hectare. The average production amounts to 78230 tons having its per hectare 36.56 tons production. Halsi and eastern zone of Lakhisarai are important cane producing blocks.

POTATO, CHILIES, VEGETABLES, ETC.:-

Potato is an important vegetable and occupies an important place in the food of the peoples. The total hectrage under potato in Lakhisarai district is 2420 hectares and the production is 50890 tons and it's per hectare average production is 21.03 tons. Vegetable also play an important role in our food. It is grown in several irrigated area. The list of vegetables is long but some of the popular vegetables and root crops are cabbage, cauliflower, brinjal, beans, gourd, spinach, pumpkin, onion, potatoes, tomatoes, radishes, carrots, sweet-potatoes, lady-fingers, etc.

AQUACULTURE AND FISHERIES:-

Some water plants like Singhara is a fruit of a water creeper grows widely in the tanks and ditches in the district. Singhara fruits have a growing market. Fish is a favorite item of food for the people of Lakhisarai. Fish and rice is the chief diet of non-vegetarian people in the district. Most of the rivers, tanks, jhils and low water logged areas abound in fish and this district is one of the principal fish producing centers in the district. The common species are rohu, jahir, bachua, katla, boari, naini, tangra, mangur, garai and singhi etc.

MULTIPLE USES OF AGRICULTURAL LAND:

Multiple uses of the agricultural land became the need of the people of the district so as to feed the multiplying mouths at the rate of geometric progression. Lakhisarai district has a dense population which has to thrive subsistence farming and therefore agricultural land is put to multiple cropping.

CONCLUSION:

For the sum up, crop diversification has a great potential in improving yield, reducing the cost of cultivation and finally increase the net income realized by the farmers. It has lowered the risk by spreading the money across and within different asset classes.

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