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IDENTIFICATION OF AGRICULTURAL PRODUCTIVITY REGIONS AND ITS MAJOR DETERMINANTS: A CASE STUDY FROM BANKURA DISTRICT, WEST BENGAL

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Abstract

Agriculture is an essential wing for the economic development in India and the Agricultural Productivity is the major and vital aspect of development of this sector. Agricultural productivity is generally expressed as the ratio of agricultural outputs to agricultural inputs. It plays a key role in the process of industrialization and leads to modernization and social development. The present study attempts to identify the spatial dimension of the Agricultural productivity in Bankura district, West Bengal. The statistical technique formulated by Yang (1965) has been used to determine the variation in the Agricultural productivity of Bankura district. The study concludes that the eastern and some south-eastern regions of the district have maximum Agricultural productivity compared to the northern and western region of the district. This variation is mainly due to the terrain characteristics, soil fertility, irrigation facilities and other physical, socio-economic factors in this district.

Key words: Agricultural productivity, Economic development, Soil fertility, Irrigation.

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1. Introduction:

Agriculture is an important and essential input for economic development. It is also treated as backbone of Indian rural economy, as well as the process of rural social development. Agricultural productivity is also an important toolto assess the agricultural development of region. Theagricultural productivity concept has been used widely to explain the spatial organization of agriculture(Kumar and Singh, 2011). Agricultural productivity is the interplay of a multitude of many factors, such as environmental, socio-economic and technological factors (Sule and Barakade, 2014). The facilities of irrigation is one of the most essential determinants for the agricultural productivity together with the use of fertilizers, HYV, advanced technology ,agricultural mechanization for increasing agriculturalproductivity of a particular region.

2. Objectives:

The major objectives of the present study are:

- To identify the variations in agricultural productivity region of Bankura district.
- To determine the impact of someselected physical and technological factors on agricultural productivity region of Bankura district.

3. Data base and methodology:

The present study is mainly based on secondary sources of data, which have been collected from the District Statistical Hand Book, Bankura (2015), published by The Bureau of Applied Economics and Statistics of Government of West Bengal and the Annual Target Plan of Bankura (2016-17) from Office of the Deputy Director of Agriculture, Bankura district, West Bengal.

To determine the agricultural productivity of Bankura district, ten major crops have been selected. The selected crops have been grouped into four categories, viz; Cereals: Rice (Oryza Sativa), Wheat (Triticum) and Maize (Zea Mays), Pulses: Musur (Lens Esculanta), Gram (Cierarietinum) and Maskalai (Vignamungo), Cash Crops: Sugarcane (SaceharumOficinarum), Potato (SolanumTubersoum), Oil Seeds: Mustard (Brassica) and Til (SesamumIndicum).

The agricultural productivity indices of selected crops of the district were calculated by using the statistical technique formulated by W.Y Yang (1965). (Sample calculation of crop index for Ranibandh C.D Block is shown in Table. 1). The C.D Blocks have been taken as the smallest

unit of the study. The index represents the yield of selected crops in a C.D Block compared with the average crop yield of the region.

C.I= ∑E/∑C (Yang, 1965)

A = Avg. Yield in the district (quintal)

B = Yield in the C.D Blocks (qu/hec)

C = Area of the crop in C.D Block (hectares)

D = Crop yield in the blocks as percentage of the district (B÷A) ×100

E = Percentage multiplied by area in hectares (D×C)

C.I= Crop Productivity Index

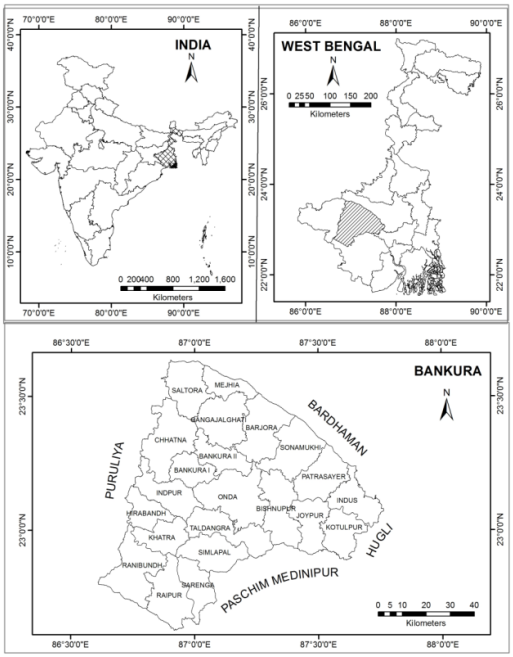
Table: 1. Method for calculating Crop Productivity Index of Cereals for Ranibandh C.D Block.

Crops	**Avg. Yield in the District (quintal)** **A**	**Yield in the Blocks (qu/hec)** **B**	**Area of the Crop in C.D Block (hectares)** **C**	**Crop yield in the Blocks as percentage of the District (B÷A)×100** **D**	**Percentage multiplied by area in hec. (D×C)** **E**
1	2	3	4	5	6
Rice	61.91	84.86	15719	78.92	1240559.42
Wheat	25.18	28.49	57	113.15	6449.29
Maize	1.84	20.21	58	1098.37	63705.46
Total	88.93	133.56	15834	1290.44	1310714.17
C.I = (1310714.17÷15834) = 82.78					

Source: Computed by the Author (s) from District Statistical Hand Book, Bankura District-2017

4. Study Area:

Bankura district is one of the 23rd district of West Bengal has beentaken as the present study area. This district lies to the south-western part of West Bengal covering 22°38'00"N to 23° 38'00"N latitude and 86°36'00"E to 87°46'00" E longitude (Map 1). Thisdistrict is a physiographical combination between easterly extension of Chhotanagpur plateau in western part and fertile Gangeticplain on east. This district is mainly dominated by agricultural practices. Here 65.27 % population is engaged in agricultural activity and from this 21.12% iscultivators and 44.15% are agricultural laborers. Total cropped area of the district is 492227 hectares and the net shown area is 337310 hectares. Net irrigated area of the district is 276900 hectares, which is 56.25% of the total cropped area of the district. Climatologically this district comes under the sub-tropicalmonsoonal climate with 26.6°C averagetemperature and 1385 mm average annual rainfall. The character of rainfall is periodic and uncertain. The district generally covered by sandy loam soil with patches of laterite and clay loam soil.**Map 1: Study Area**



5. Results and Discussion:

- **Productivity Regions:**

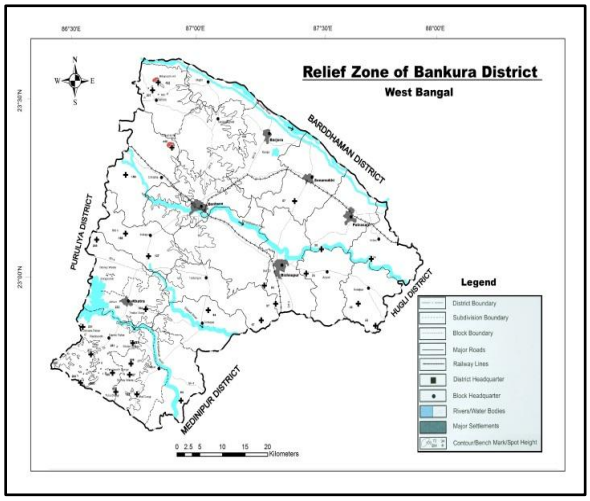
In the present study based on productivity Indices of Cereals, Pulses, Oil seeds and Cash Crops, the Bankura district have been classified into five classes (Table.2).

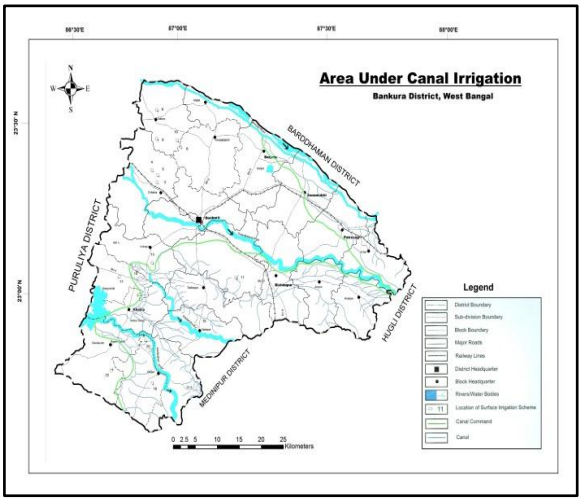
Table: 2. Agricultural Productivity of Bankura District in 2016-17.

Category	Cereals		Pulses		Cash Crops		Oil Seeds		Agricultural Productivity	
	Indices	No. of Blocks	Indices	No. of Blocks	Indices	No. of Blocks	Indices	No. of Blocks	Indices	No. of Bloc

										ks
Very High	140-167	5	214-377	1	169-211	4	158-178	1	130-155	7
High	114-140	3	177-214	3	127-169	7	137-158	0	106-130	5
Moderate	88-114	6	138-177	8	84-127	1	116-137	4	81-106	7
Low	61-88	4	0-138	5	42-84	5	96-116	6	56-81	2
Very Low	35-61	4	0-0	5	0-42	5	75-96	11	31-56	1

Source: Computed by the Author (s) fromDistrict Statistical Hand Book, Bankura District-2017





Map2:Relief Zone of Bankura District **Map3: Canal Irrigated area of Bankura District**

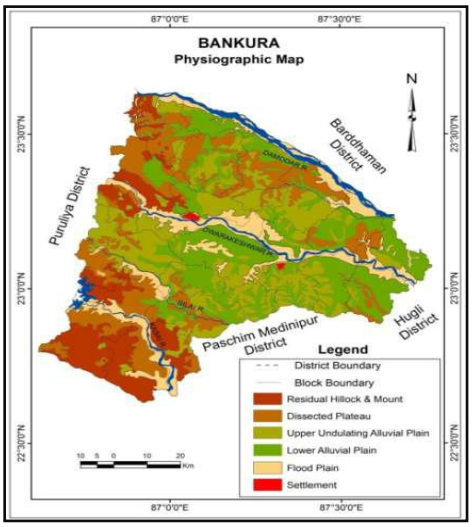
A. Cereals Productivity Regions:

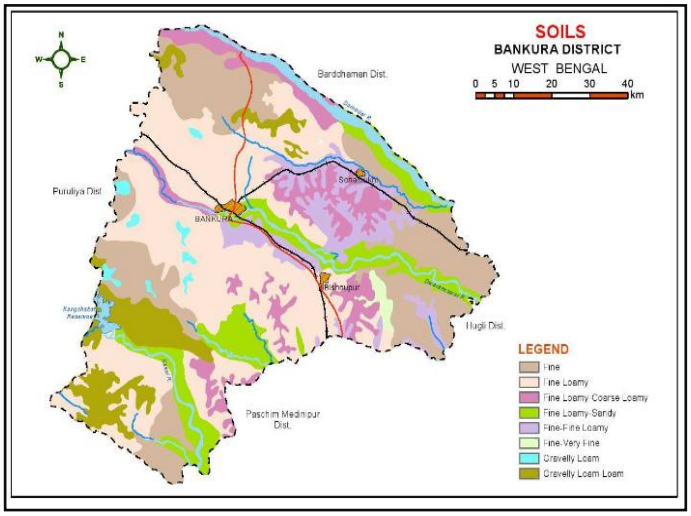
Cereals are the most significant crops in the agriculture of Bankura district. These crops occupy 359732hectares area, which is 73.08 % of the total crop area of the region. The very high and high productivity regions cover about 32 % and 17.36% of total area of the cereals cropped regions, while the low and very low productivity regions cover 12.85 % and 3.27 % respectively and moderate productivity regions occupied 21.40 % of the total cereals cropped area of the district.

The very high productivity regions are found mainly in eastern part and some south-western part of the district. Kotulpur, Bishnupur, Patrasayar, Indus, Raipur, Bankura-II and Onda

C.D Blocks are fall under this category. Indus, Sonamukhi and Taldangra C.D Blocks are also in the high category of cereals productivity (Map 6).

The moderate productivity area are noticed in some northern region of the district, these are Bankura-II, Gangajalghati, Barjora and three southern C.D Blocks, namely Simlapal, Raipur and Sarenga.



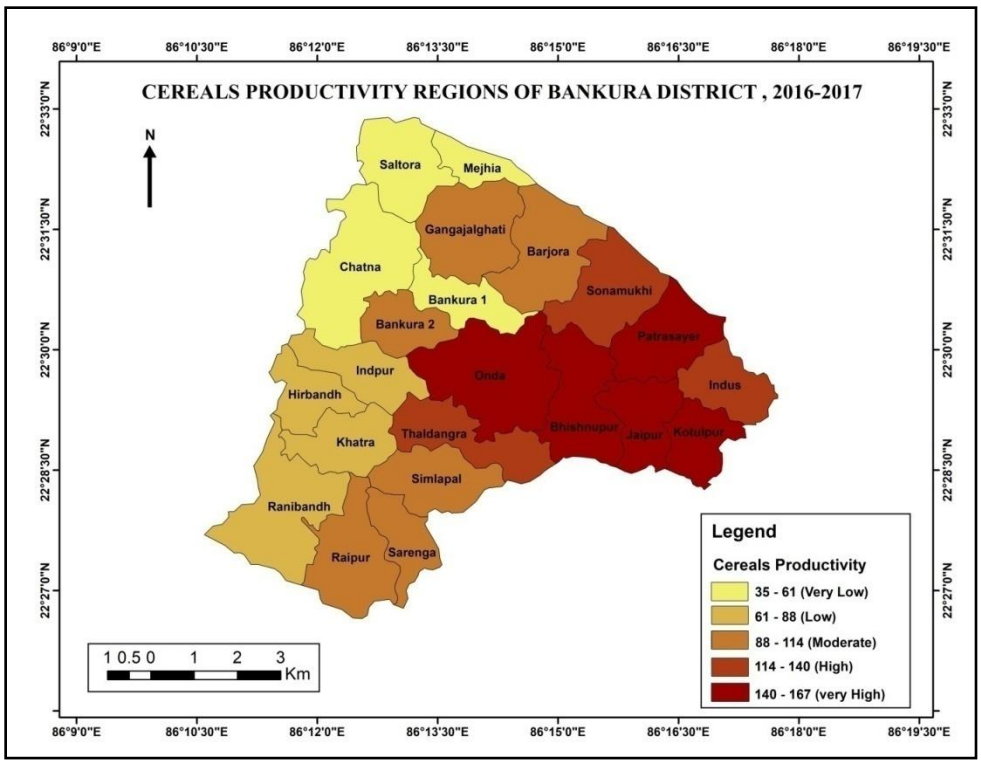


Map 4: Physiography of Bankura District (Source:NBSS & LUP Regional Centre, Kolkata**)**

Map 5: Soil Map of Bankura District (Source:NBSS & LUP Regional Centre, Kolkata**)**

Low to very low cereals productivity regions mainly concentrate in south-western part of the district. Indpur, Khatra, Hirbandh and Ranibandh are in low cereals productivity region. Four C.D Blocks of north to north-western part as Bankura-I, Chhatna, Saltora and Mejia are comes under the very low cereals productivity regions in the Bankura district (Appendix 1).

The high to very high cerealsproductivity noticed in these regions due to the assured availability of irrigation facilities and moderate use of chemical fertilizer(Map10&11). .



Map6: Cereals Productivity Regions of Bankura District

B. Pulses Productivity Regions:

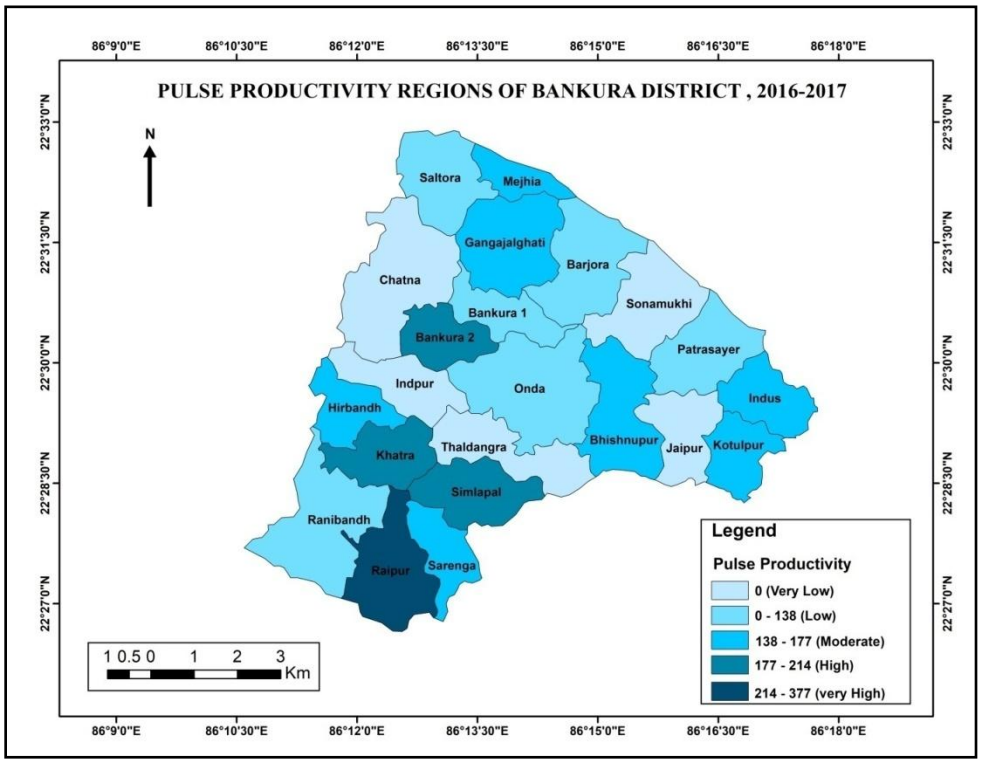
The vegetarian diet of the people is predominantly starch rich and Pulses form a very important part of it as they constitute the main vegetable protein (Taufique, *et al.*, 2001).Here Musur, Gram and Maskalai are selected as Pulses. These crops occupy only 202 hectare, which is 0.04 % of total cropped area of the district.

In this study very high and high pulses productivity regions cover 18.81% and 13.86% of the total pulses cropped area. Only Raipur C.D Block has very high productivity. Bankura-II, Khatra and Simlapal C.D Blocks have high pulses productivity.

Moderate productivity noticed in south and south-eastern regions of the district, as Hirbandh, Ranibandh, Sarenga, Bishnpur, Kotulpur, Indus, Mejia and Gangajalghati are also in this category with 60.40% area of the pulses productivity(Map 7).

Very low and low productivity regions are noticed in Chhatna, Indpur, Taldangra, Joypur, Sonamukhi C.D Blocks. In these C.D Blocks have no pulses production(Appendix 2). Bankura-I, Saltora, Barjora, Onda and Patrasayar C.D Blocks are in low category of pulses productivity, which cover 6.93% area of the pulses productivity regions of the district.

Here very low to low pulses productivity is the result of lack of irrigation facilities and low use of chemical fertilizer in those C.D Blocks of the district(Map 10&11).



Map7: Pulses Productivity Regions of Bankura District

C. Cash Crops Productivity Regions:

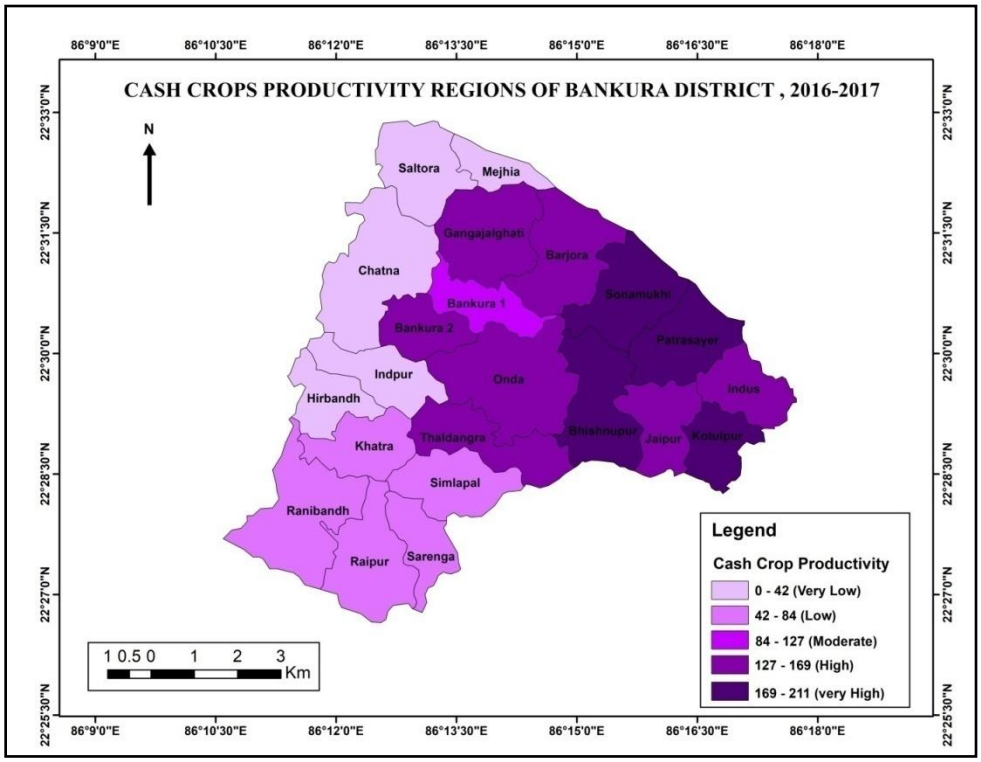
Cash crops are one of the most important crops cultivated in Bankura district. Sugarcane and Potatoes have been taken here as the cash crops. These crops cover 30597 hectares area, which is 6.22 % of the total cropped area of the district.

The very high productivity of cash crops lies in the eastern region of the district, covering the C.D Blocks of Kotulpur, Bishnupur, Sonamukhi and Patrasayar. The C.D Blocks of north-central and north-eastern part, which covered Bankura-II, Gangajalghati,Barjora, Onda,Taldangra, Joypur, Indus C.D Blocks have high productivity of cash crops (Appendix 3). The very high and

high Productivity regions cover 60.16% and 29.95% area of the total cash crop area of the district.

The very low and low cash crop productivity regions noticed in northern and south-western region of the district. This low to very low regions covered 9.80% area. Chhatna, Saltora, Mejia, Indpur and Hirbandh have very low productivity and Khatra, Ranibandh, Simlapal, Raipur and Sarenga are in low category of cash crop productivity(Map 8).

Only Bankura-I C.D Block has moderate productivity, which cover 0.09% area of the productivity regions. The major factors of low to very low cash crops productivity of these C.D Blocks are lack of irrigation facilities, less fertile soil and undulating hilly topography, which are not favorable for any kind of cultivation(Map 4,5&10).



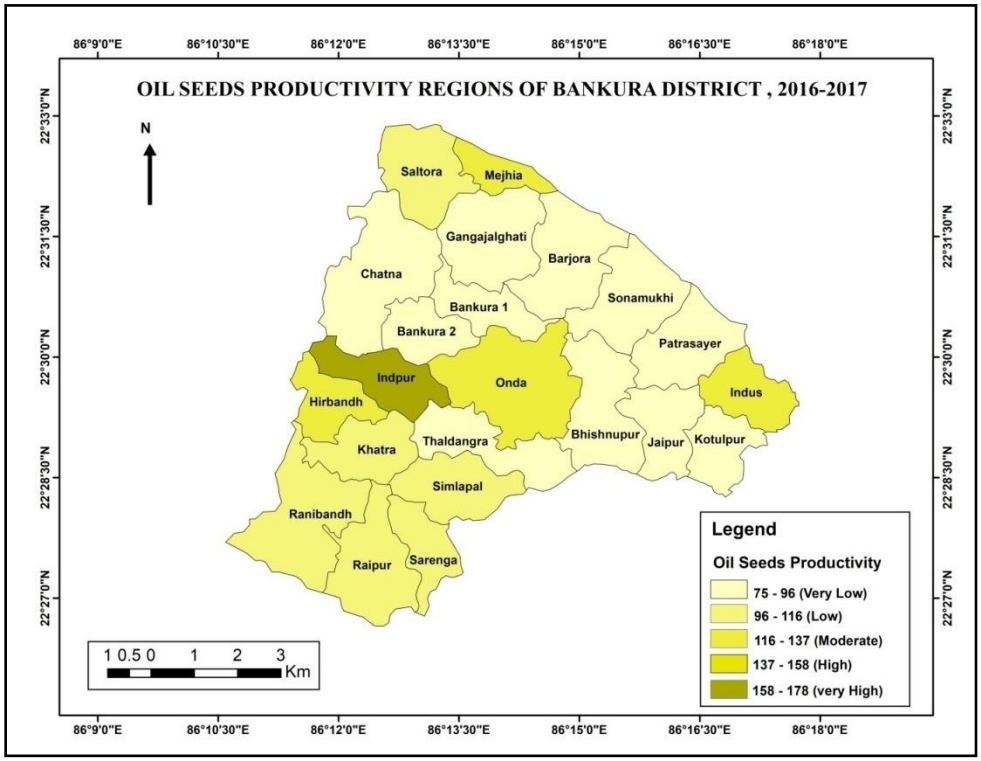
Map8:Cash Crop Productivity Regions of Bankura District

D. Oil Seeds Productivity Regions:

In the present study Mustard and Til are taken as Oil Seeds crops. They occupy 32034 hectares area, which is 6.51% of the total cropped area of the district.

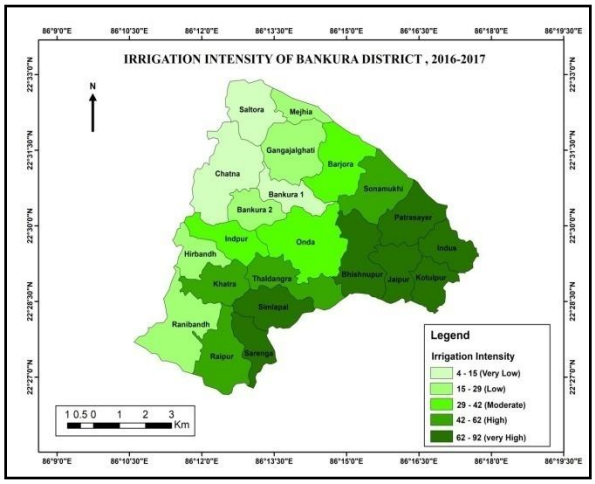
Only Indpur C.D Block with 0.76% area has very high productivity and there is no C.D Block which falls under high productivity category(Appendix 4).

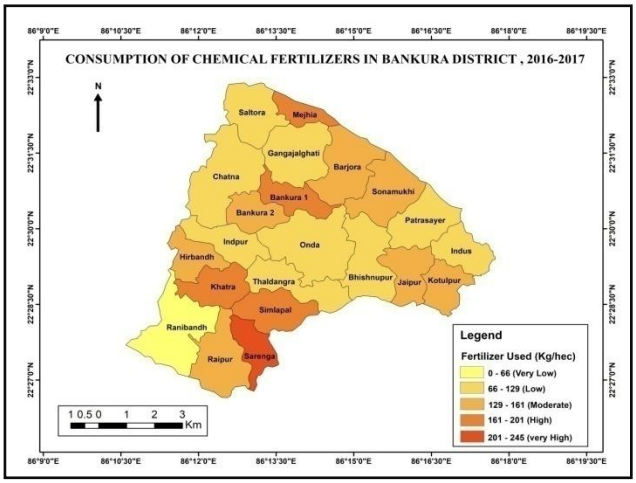
Maximum portion of southern, eastern and some northern region have very low to low productivity of Oil Seeds. They occupy 59.04% and 23.67% area of total Oil Seeds crops area respectively. The very low productivity C.D Blocks are Chhatna, Bankura-I, Bankura-II, Gangajalghati, Barjora, Taldangra, Kotulpur, Bishnupur, Sonamukhi, Patrasayar and Joypur. Saltora, Khatra, Ranibandh, Simlapal, Raipur and Sarenga C.D Blocks have low productivity(Map 9).



Map9:Oil seeds Productivity Regions of Bankura District

Only four C.D Blocks, namely Mejia, Onda, Hirbandh and Indus with16.53% area are in moderate productivity region of the district.The major areas of the eastern and south-western regions have high to very high agricultural productivity because of high to very high availability of Irrigation facilities by canals (Map3),river, wells and tube-wells, moderate to high use of chemical fertilizers (Map11), use of mechanizations and fertile soil of eastern alluvial track of the district (Map5).



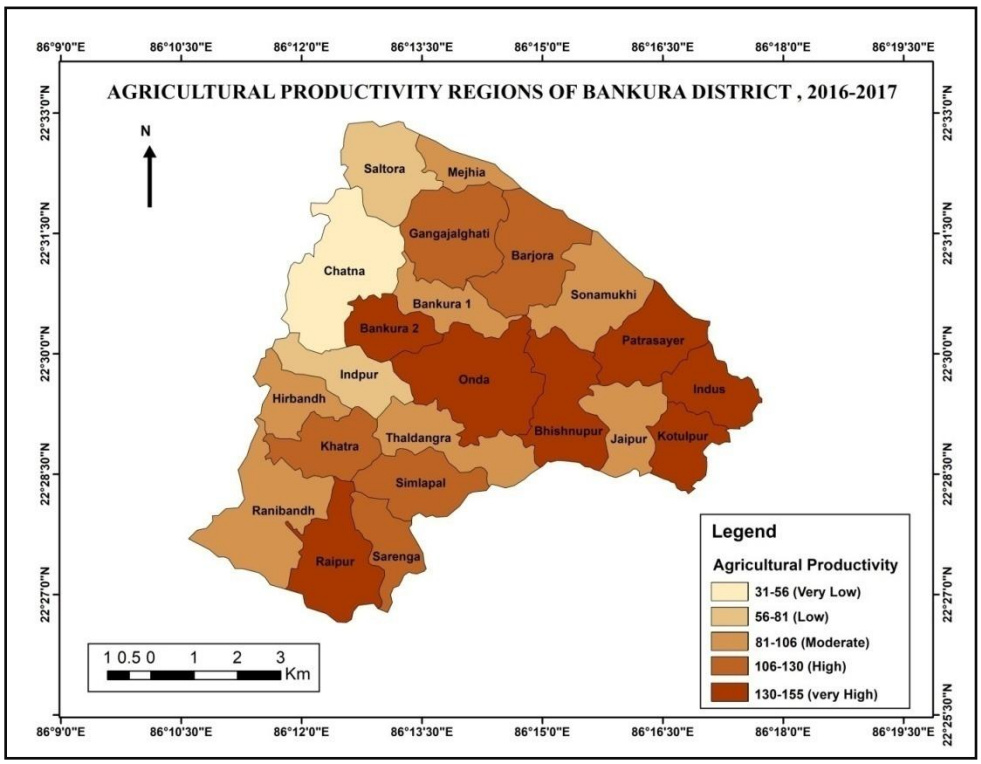


Map10: Irrigation IntensityMap11: Consumption of Chemical Fertilizers

E. Total Agricultural Productivity Regions:

On the basis of composite index of the four major crops categories (Cereals, Pulses, Cash Crops and Oil Seeds) (Appendix 5) agricultural productivity of Bankura district has been prepared. The levels of agricultural productivity are classified into five classes (Map 12). From this analysis very high productivity covers some eastern regions, as Kotulpur, Bishnupur, Patrasayar, Indus C.D Blocks. Bankura-II, Onda and Raipur are also in very high category with 33.55% area of the district. High productivity regions are distributed over Gangajalghati, Barjora, Simlapal, Khatra and Sarenga C.D Blocks with 22.17% area of the district. Moderate agricultural productivity regions lies on scattered portion of eastern, southern and north-central regions. Bankura-I, Mejia, Hirbandh, Ranibandh, Taldangra, Joypur and Sonamukhi C.D Blocks are in this position with 28.72% area of the district. Low productivity noticed in Saltora and Indpur and only Chhatna C.D Block has very low agricultural productivity with 8.94% and 6.50% area of the district respectively.

The major areas of the eastern and south-western regions have high to very high agricultural productivity because of high to very high availability of Irrigation facilities by canals, river, wells and tube-wells, moderate to high use of chemical fertilizers, use of mechanizations and fertile soil of eastern alluvial track of the district.



Map12: Agricultural Productivity of Bankura District

6. Conclusion:

The above study reveals that the high to very high productivity regions much concentrate in eastern and some south-eastern regions, than that of the northern and proper southern regions of the Bankura district (Map12). The facilities of irrigation and use ofchemical fertilizers directly influenced the agricultural productivity of this district. The physiography of the regions, quality of soil, use of agricultural mechanization as well as advanced technology are also important determinantsfor the agricultural productivity of the district, which is directly related with the rural socio-economic development of those regions of the district. More inclination towards the rice cultivation is the main reason for low agricultural productivity in north- western and western part of the district because this part due to undulating rugged topography(Map 2) and rocky unfertile soil, periodicity of rainfall and low irrigational development are the main reasons for low agricultural productivity. Therefore, proper crop management, development of traditional and minor irrigation system, use of indigenous varieties of seedsis the major solution to improve the agricultural productivity of the district.

7. References:

1. Annual Target Plan. Bankura, (2016-17), *Office of the Deputy Director of Agriculture, (Administration)* Bankura.

2. District statistical Handbook, Bankura (2015), *Bureau of Applied Economics and Statistics*, Govt. of West Bengal.

3. Kumar, S. and Singh, M.B.(2011). Disparities in Agricultural Productivity in Ballia District: A Perception Survey: *National Geographical Journal of India*, 57(3), pp.9-14

4. Taufique, M. Ahmad, M. and Munir,A. (2001). Spatial Analysis of Agricultural Productivity in Western Uttar Pradesh, *Geographical Review of India*,.63(2), pp.129-140

5. Yang, W.Y. (1965). Methods of Farm Management Investigation,80, *F.A.O, United Nations*

Appendices

Appendix 1:Calculation of CerealsProductivity Index of Bankura District in 2016-17

Blocks	Crop yield (%) multiplied by area in hectare			Total	Area			Total Area	Crop Index
	Rice	Wheat	Maize		Rice	Wheat	Maize		
Bankura –I	453616.14	92.85	-	453708.99	11775	1	-	11776	38.53
Bankura –II	1237250.40	2611.16	-	1239861.56	10899	37	-	10936	113.37
Chhatna	1052569.70	92.81	-	1052662.51	26045	1	-	26046	40.42
Saltora	486599.00	2210.09	-	488809.09	14051	25	-	14076	34.73
Mejia	180601.92	99.48	-	180701.4	4855	1	-	4856	37.21
Gangajalghati	1216233.10	131.89	-	1216364.99	13773	1	-	13774	88.31
Barjora	1750546.31	9664.81	-	1760211.12	16307	117	-	16424	107.17
Onda	3570984.78	39057.11	-	3610041.89	24916	398	-	25314	142.61
Indpur	1116073.17	12459.09	-	1128532.26	13074	110	-	13184	85.60
Khatra	759303.72	2321.84	-	761625.56	10633	28	-	10661	71.44
Hirbandh	414879.31	856.24	-	415735.55	6549	8	-	6557	63.40
Ranibandh	1240559.42	6449.29	63705.46	1310714.17	15719	57	58	15834	82.78
Taldangra	1865966.66	27848.77	-	1893815.43	13733	336	-	14069	134.61

Simlapal	1280773.64	109251.79	-	1390025.43	13048	685	-	13733	101.22
Raipur	1467400.36	56026.61	2196.74	1525623.71	15126	513	2	15641	97.54
Sarenga	598114.23	7404.69	-	605518.92	6422	50	-	6472	93.56
Bishnupur	2301099.50	5032.72	-	2306132.22	16061	52	-	16113	143.12
Joypur	3285535.33	43736.54	-	3329271.87	22471	538	-	23009	144.69
Kotulpur	4897401.73	11345.83	-	4908747.56	29303	134	-	29437	166.75
Sonamukhi	2917291.13	32957.94	-	2950249.07	21082	369	-	21451	137.53
Patrasayar	3527959.94	4372.52	-	3532332.46	23375	50	-	23425	150.79
Indus	3431850.17	6138.20	-	3437988.37	26874	70	-	26944	127.60

Source: Computed by the Author (s) from District Statistical Hand Book, Bankura District-2017

Appendix2: Calculation of Pulses Productivity Index of Bankura District in 2016-17

Blocks	**Crop yield (%) multiplied by area in hectare**			**Total**	**Area**			**Total Area**	**Crop Index**
	Musur	**Maskalai**	**Gram**		**Musur**	**Maskalai**	**Gram**		
Bankura –I	105.65	-	-	105.65	1		-	1	105.65
Bankura –II	127.59	-	913.95	1041.54	2		3	5	208.31
Chhatna	0.00	-	-	0	-		-	0	0.00
Saltora	396.50	-	-	396.5	3		-	3	132.17
Mejia	660.83	-	364.57	1025.4	5		1	6	170.90
Gangajalghati	202.69	-	289.62	492.31	2		1	3	164.10
Barjora	317.36	-	-	317.36	3		-	3	105.79
Onda	248.72	-	-	248.72	2		-	2	124.36
Indpur	0.00	-	-	0	-		-	0	0.00
Khatra	138.63	-	503.04	641.67	1		2	3	213.89
Hirbandh	423.55	-	251.88	675.43	3		1	4	168.86
Ranibandh	553.43	-	-	553.43	4		-	4	138.36
Taldangra	0.00	-	-	0	-		-	0	0.00
Simlapal	3459.4	-	658.32	4117.8	18		2	20	205.89

	9			1					
Raipur	2807.54	10692.31	830.05	14329.9	28	5	5	38	377.10
Sarenga	4590.85	-	2656.5	7247.35	30		11	41	176.76
Bishnupur	423.55	-	-	423.55	3		-	3	141.18
Joypur	0.00	-	-	0	-		-	0	0.00
Kotulpur	773.89	-	-	773.89	5		-	5	154.78
Sonamukhi	0.00	-	-	0	-		-	0	0.00
Patrasayar	635.26	-	-	635.26	5		-	5	127.05
Indus	8268.10	-	-	8268.1	56		-	56	147.64

Source: Computed by the Author (s) from District Statistical Hand Book, Bankura District-2017

Appendix 3: Calculation of Cash Crop Productivity Index of Bankura District in 2016-17

Blocks	**Crop yield (%) multipliedby area in hectare**		**Total**	**Area**		**Total Area**	**Crop Index**
	Sugarcane	**Potato**		**Sugarcane**	**Potato**		
Bankura –I	418.58	2968.47	3387.05	1	26	27	125.45
Bankura –II	403.85	21643.35	22047.2	1	148	149	147.97
Chhatna	-	0.00	0	-	-	0	0.00
Saltora	-	0.00	0	-	-	0	0.00
Mejia	-	0.00	0	-	-	0	0.00
Gangajalghati	423.10	51404.69	51827.79	1	348	349	148.50
Barjora	-	136116.46	136116.46	-	855	855	159.20
Onda	-	147584.10	147584.1	-	909	909	162.36
Indpur	-	0.00	0	-	-	0	0.00
Khatra	-	3782.23	3782.23	-	54	54	70.04
Hirbandh	-	0.00	0	-	-	0	0.00
Ranibandh	-	2997.87	2997.87	-	56	56	53.53
Taldangra	-	116074.84	116074.84	-	873	873	132.96

Simlapal	-	129964.55	129964.55	-	1623	1623	80.08
Raipur	341.49	14268.81	14610.3	1	311	312	46.83
Sarenga	-	53548.86	53548.86	-	954	954	56.13
Bishnupur	-	317022.64	317022.64	-	1501	1501	211.21
Joypur	-	706061.01	706061.01	-	4990	4990	141.50
Kotulpur	612.98	2181766.7	2182379.7	1	12595	12596	173.26
Sonamukhi	-	271847.12	271847.12	-	1606	1606	169.27
Patrasayar	-	491304.92	491304.92	-	2705	2705	181.63
Indus	0.00	160790.21	160790.21	-	1038	1038	154.90

Source: Computed by the Author (s) from District Statistical Hand Book, Bankura District-2017

Appendix 4:Calculation of Oil Seeds Productivity Index of Bankura District in 2016-17

Blocks	**Crop yield (%) multiplied by area in hectare**		**Total**	**Area**		**Total Area**	**Crop Index**
	Mustard	**Til**		**Mustard**	**Til**		
Bankura –I	2696.30	103.91	2800.21	29	1	30	93.34
Bankura –II	17532.95	10252.11	27785.06	201	119	320	86.83
Chhatna	397.19	116.07	513.26	5	1	6	85.54
Saltora	337.93	100.00	437.93	3	1	4	109.48
Mejia	2533.84	110.04	2643.88	20	1	21	125.90
Gangajalghati	3023.37	145.88	3169.25	39	1	40	79.23
Barjora	31698.08	37796.72	69494.8	481	337	818	84.96
Onda	194813.79	54629.39	249443.18	1584	466	2050	121.68
Indpur	43238.57	131.18	43369.75	242	1	243	178.48
Khatra	23310.34	2010.89	25321.23	234	17	251	100.88
Hirbandh	5165.52	7922.30	13087.82	42	65	107	122.32
Ranibandh	24444.96	96.93	24541.89	218	1	219	112.06

Taldangra	49572.80	55341.44	104914.24	565	831	1396	75.15
Simlapal	122577.01	130812.68	253389.69	1278	1218	2496	101.52
Raipur	53619.41	326836.36	380455.77	1280	2568	3848	98.87
Sarenga	44897.70	31248.41	76146.11	477	287	764	99.67
Bishnupur	70813.03	805.39	71618.42	813	19	832	86.08
Joypur	32369.60	243616.28	275985.88	359	2870	3229	85.47
Kotulpur	49215.71	725076.11	774291.82	533	8885	9418	82.21
Sonamukhi	65196.68	53209.30	118405.98	719	715	1434	82.57
Patrasayar	82978.29	31815.96	114794.25	878	511	1389	82.65
Indus	264321.20	113798.94	378120.14	1785	1334	3119	121.23

Source: Computed by the Author (s) from District Statistical Hand Book, Bankura District-2017

Appendix 5:Calculation of Mean Composite Productivity Index of Bankura District in 2016-17

Blocks	**Productivity Index of Crops**				**Composite Productivity Index**	**Mean Composite Productivity Index**
	Cereals	**Pulse**	**Cash crop**	**Oil seeds**		
Bankura –I	38.53	105.65	125.45	93.34	362.97	90.74
Bankura –II	113.37	208.31	147.97	86.83	556.48	139.12
Chhatna	40.42	0.00	0.00	85.54	125.96	31.49
Saltora	34.73	132.17	0.00	109.48	276.38	69.10
Mejia	37.21	170.90	0.00	125.90	334.01	83.50
Gangajalghati	88.31	164.10	148.50	79.23	480.14	120.04
Barjora	107.17	105.79	159.20	84.96	457.12	114.28
Onda	142.61	124.36	162.36	121.68	551.01	137.75
Indpur	85.60	0.00	0.00	178.48	264.08	66.02
Khatra	71.44	213.89	70.04	100.88	456.25	114.06

Hirbandh	63.40	168.86	0.00	122.32	354.58	88.65
Ranibandh	82.78	138.36	53.53	112.06	386.73	96.68
Taldangra	134.61	0.00	132.96	75.15	342.72	85.68
Simlapal	101.22	205.89	80.08	101.52	488.71	122.18
Raipur	97.54	377.10	46.83	98.87	620.34	155.09
Sarenga	93.56	176.76	56.13	99.67	426.12	106.53
Bishnupur	143.12	141.18	211.21	86.08	581.59	145.40
Joypur	144.69	0.00	141.50	85.47	371.66	92.92
Kotulpur	166.75	154.78	173.26	82.21	577	144.25
Sonamukhi	137.53	0.00	169.27	82.57	389.37	97.34
Patrasayar	150.79	127.05	181.63	82.65	542.12	135.53
Indus	127.60	147.64	154.90	121.23	551.37	137.84

Source: Computed by the Author (s) from District Statistical Hand Book, Bankura District-2017