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The Role of Modern Agriculture in Socio- Economic Development: A Case Study in Geographical Perspective Sheopur Village Koderma District, Jharkhand

Shailja Shalini, Research Scholar, Department of Geography
Magadh University, Bodhgaya, Bihar, INDIA

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Author

Shailja Shalini, Research Scholar

E-mail : pritiverma338@gmail.com

shodhsamagam1@gmail.com

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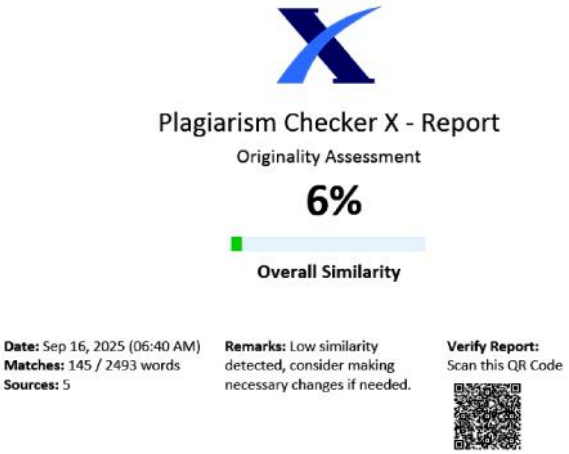


ABSTRACT

Modern agriculture involves the use of advanced technologies, improved seeds, irrigation facilities, fertilizers, pesticides, machinery and scientific farming methods. Modern agriculture plays a vital role in socio-economic development. It is the process by which the economic well being and quality of life of a nation, region, local community, or an individual are improved. Socio-economic development in an economy and sociological conditions combine total measure of a person's work experience and of an individual's or family's access to economic resource and social position in relation to past. Modern agriculture not only contribute's to GDP but also plays a pivotal role in shaping rural area.

KEY WORDS

Technology, Improved Seed, Fertilizers, Pesticides, Social Economy, GDP.

INTRODUCTION

Modern agriculture is an ever-changing approach to agricultural innovation and farming practices that helps farmers increase efficiency and reduce the amount of natural resources needed to meet the world's food, fuel and fibre demands. Modern agriculture increases crop yield and productivity. Farmers earn more by selling surplus produce in the market. It reduces poverty and improves the economic condition of rural areas. Higher income leads to better housing, nutrition, education and health facilities. People can afford improved amenities and consumer goods.

According to UNDP, socio- economic development refers to the process of improving the

well- being of every individual in society so they can reach their full potential. It is about increasing the economic wealth and improving the quality of life through proper education, health and equal opportunities.

Objective

The main objective of present work is to study the role of modern agriculture in socio-economic development of Sheopur village Koderma with approach of physiography, land slope, source of irrigation, demographic pattern, agricultural appliances, animal husbandry, per capita income, literacy rate, household utilities and food consumption pattern.

Methodology

The source of information used for the present study comprises of two types:

- Primary data.
- Secondary data.

Primary data is collected through interaction with 75 people of Sheopur village on the basis of purposive sampling through observation and scheduled method. The source of secondary data is district cencus handbook and block level offices.

Study Area

The Sheopur village in Satgawan block in Koderma district is part of Jharkand state. The village Sheopur is situated on 24R" 67'10" to 42R" 68'40" north latitude and 85R" 45'25" to 85R" 46'40" east longitude. Climatic condition, land use pattern and source of irrigation, demographic pattern, agricultural appliances, animal husbandry per capita income, literacy level and households utilities.

Physiography and Land Slope

The sheopur village consists of a series of different elevations in Koderma district. This village is the highest elevation, i.e. 397 mts. above the sea level. This is also known on plateum land and the slope gradually descends in all the direction. Generally the slope is in the west-north, north to south to south, north to east and south to north divection. In the western part the slope is determined by the streaus descending down the wills. The middle parts with the highest elevation are known as the scarp aneas. The land sescends in all the direction in a sevies of teps until it reaches the lowest points along the northern, western, eastern and southern borders very often the breaks in the slope morks the steep scarps of village plateau with varying altitudes. The redielual with and vallies predomineut the physiography of the village plateau.

Land use Pattern and Source of Irrigation

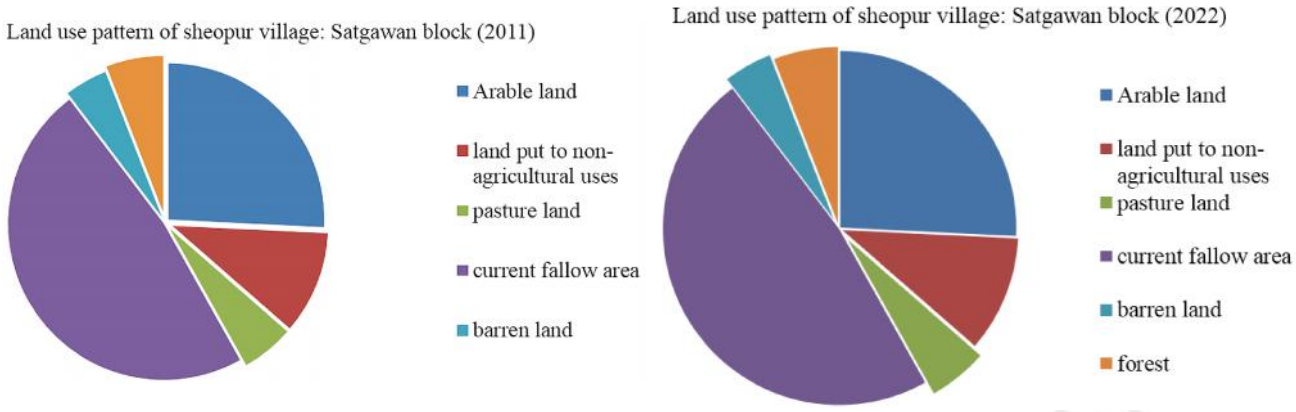
Land-uses are governed by terrain, soil, climatic conditions. So, the landuse of Plateau-dominated Jharkhand State.

Table No. 1: Land use pattern of sheopur village: Satgawan block (2011 and 2022).

S. no.	Land Utilization	2011		2022	
		Area (In hect.)	Percentage	Area (In hect.)	Percentage
1	Arable land	27.95	17.77	29.55	18.79
2	land put to non-agricultural uses	14.38	9.14	12.22	7.77
3	Pasture land	6.31	3.81	6.25	3.97
4	Current fallow area	53.74	34.17	54.81	34.85
5	Barren land	4.90	3.11	5.10	3.24
6	Forest	6.20	3.90	6.80	4.32

*(**Source:** Circle office Satgawan block)*

Fig no 1



In sheopur village about 10.44 hac.area is irrigated while 19.1 hact is un-irrigated area of total arable land. About 6.44 hact is irrigated by tank/ lakes. About for hact is irrigated by other sources of water (Source- geolysis local).

Demographic Pattern

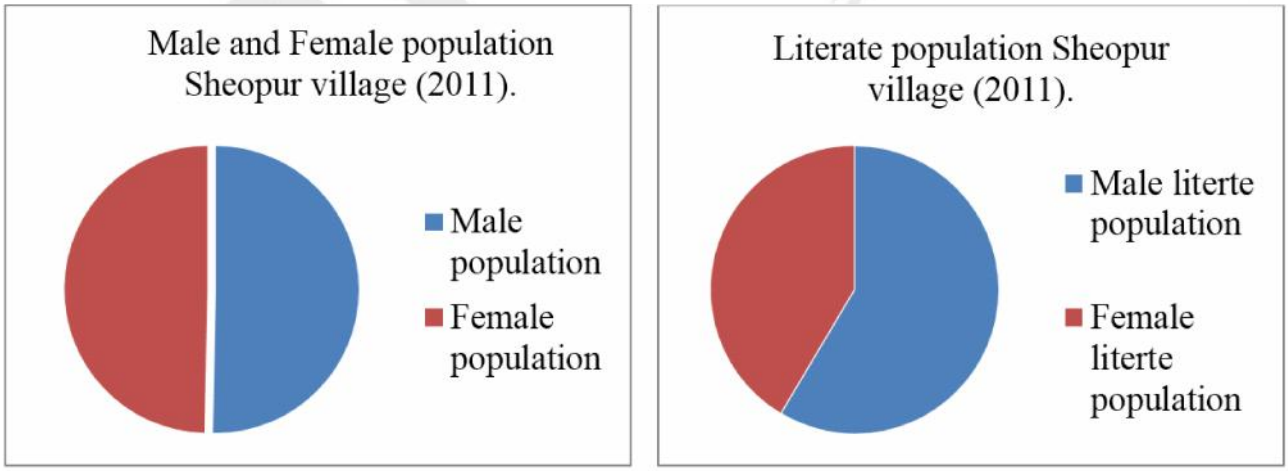
Demography population geography is basically quantitative;. It is largely dependent upon statistical data. Population geography deals with the demographic facts in the present environmental context as well as the causes their origin and characteristics and possible consequenes (Srivastava, 1983, 112).

Table No 2: Demagraphy Feature of Sheopur Village Satgawan Block. (2011)

Variables	Male	Percentage	Female	Percentage	Total
Total Number	1405	50.32	1387	49.68	2792
Literate	853	58.59	603	41.40	1456
SC	461	16.51	423	15.15	884
ST	3	0.10	4	0.14	7
Workers (1064)					
Main Workers	540	84.57	99	15.45	639
Agricultural Workers	252	76.83	76	23.17	328
Marginal Workers	73	52.90	24	47.10	97
Non Workers	792	38.52	1264	61.48	2056

***(Source:** District Census 2011 hand book Koderma-2011_*

Fig No 2



Sex ratio of sheapur Village is 987 (2011) was against 949 of the district whole. Scheduled castes Population in 2011 was 884 or 32.01% of the total population of the Village. Schedule tribes population was only 7 or 0.25% of the total population of the village.

Agricultural Appliances

The modern agricultural system is a characteristic well understood between modern and traditional systems have powerful implications for the future development of the global food system-even though it is important to recognize that few, if may, systems fall entirely into either the modern or traditional categories. Traditional systems the most important difference system between the categories is the way farmers see themselves and their role.

Table No 3: Agricultural Appliances in sheopur village: satgawan block (2011).

S. No	Aspect	Implement appliances	No. of Respondent			Percentage		
			Yes	No	Total	Yes	No	Total
1	Farming Techniques	Hand ploughing bullock	37	38	75	49.33	51.66	100
2		Tractors, Mechanical planters	38	37	75	51.66	49.33	100
3	Seeds	Local, indigenous varieties saved	63	12	75	83	17	100
4		HYV	12	63	75	17	83	100
5	Fertilizers	Cow dungs compost, green manure	27	48	75	36	64	100
6		Chemical fertilizers(NPK)	48	27	75	63	37	100
7	Pest control	Natural method	30	45	75	40	60	100
8		Chemical pesticide	45	30	75	60	40	100
9	Crop spraying	By hand	25	50	75	33	67	100
10		Spray machine	50	25	75	67	33	100

*(**Source:** Primary data, 2023)*

Table No 4: Agricultural Appliances in sheopur village: satgawan block (2023)

S. No	Aspect	Implement Appliances	No. of Respondent			Percentage		
			Yes	No	Total	Yes	No	Total
01	Farming techniques	Hand ploughing bullock	2	73	75	1.96	97.34	100
02		Tractors, Mechanical planters	73	2	75	97.34	1.96	100
03	Seeds	Local, indigenous varieties saved	12	63	75	16.00	84.00	100
04		HYV	63	12	75	84.00	16.00	100
05	Fertilizers	Cow dungs compost, green manure	5	70	75	6.66	93.34	100
06		Chemical fertilizers(NPK)	70	5	75	93.34	6.66	100
07	Pest control	Natural method	0	75	75	0.00	100.00	100
08		Chemical pesticide	75	0	75	100.00	0.00	100
09	Crop spraying	By hand	0	75	75	0.00	100.00	100
10		Spray machine	75	0	75	100.00	0.00	100

*(**Source:** Primary data, 2023)*

It is clear from above table no (3 & 4) agricultural appliances in sheopur village, Satgawan block (2011) is not in advanced stage. In 2011 farming techniaue 50% is traditional whereas 50% is mechanises 83% seed used is local and indigenous and 17% is HYV 36% is traditional fertilizer and 33% people used crop spray by hand. But in 2023 tractors and mechanical planters are used by 97.34% HYV seed used by 84% chemical fertilizers used by 93.34% and 100% people used crop spraying.

Animal Husbandry

Animal husbandry has highest potential for rural self-employment generation at the lowest investment per unit possible.

Table No. 5: Number of Animals in Sheopur Village: Koderma Block (2023)

S. No.	Name of Animals	Number of Respondent			Percentage		
		Yes	No	Total	Yes	No	Total
1.	Cows	61	14	75	81.33	18.66	100
2.	Buffalows	32	43	75	42.66	57.33	100
3.	Oxen	5	70	75	6.66	93.33	100
4.	Goats	66	9	75	88	12	100
5.	Pigs	7	68	75	9.33	90.66	100
6.	Poultry	23	52	75	30.66	69.34	100

*(**Source:** Primary data, 2023)*

Above table no (5) shows that in sheopur village (2023) 81.33% was cow hurdled, 42.66 Bulffalows, 6.66% oxen, 88% goats, 9.33% pigs and 30.66% was in poultry.

Per Capita Income

Per Capita income is a key indicator of socio-economic development as higher per capita income generally signifies higher standared of living

Table No 6: Per capita income of sheopur village satgawan Block (2011)

S. N.	Monthly Income in Rs.	No. of Respondent	Percentage
1	Below 1000	37	49.33
2	1000-5000	24	32.00
3	5000-10,000	12	15.00
4	Above 10,000	03	3.66
Total		**75**	**100.00**

*(**Source:** Primary data, 2022)*

Table No. 7: Per capita income of sheopur village satgawan Block (2022)

S.N.	Monthly income in Rs.	No. of Respondent	Percentage
1	Below 1000	27	36.00%
2	1000-5000	28	37.33%
3	5000-10,000	14	18.66%
4	Above 10,000	06	8.00%
Total		**75**	**100.00%**

*(**Source:** Primary data, 2022)*

Changing of monthly income in sheopur village is maximum in bellow 1000 (12.22%) and minimum in 5000-1000 (3.67%).

Literacy Rate

A high literacy rate is strongly correlated with a higher level of socio-economic development.

Table No. 8: Literacy rete of Sheopur village : Satgawan Block (2011)

S.N.	Literacy Level	No. of Respondent	Percentage
1	Illiterate	39	50.66%
2	Below Matric	20	27.33%
3	Matric	11	15.33%
4	Intermediate	01	2.00%
5	Graduate	04	4.00%
6	Technical Degree	Nil	0.66%
Total		**75**	**100.00%**

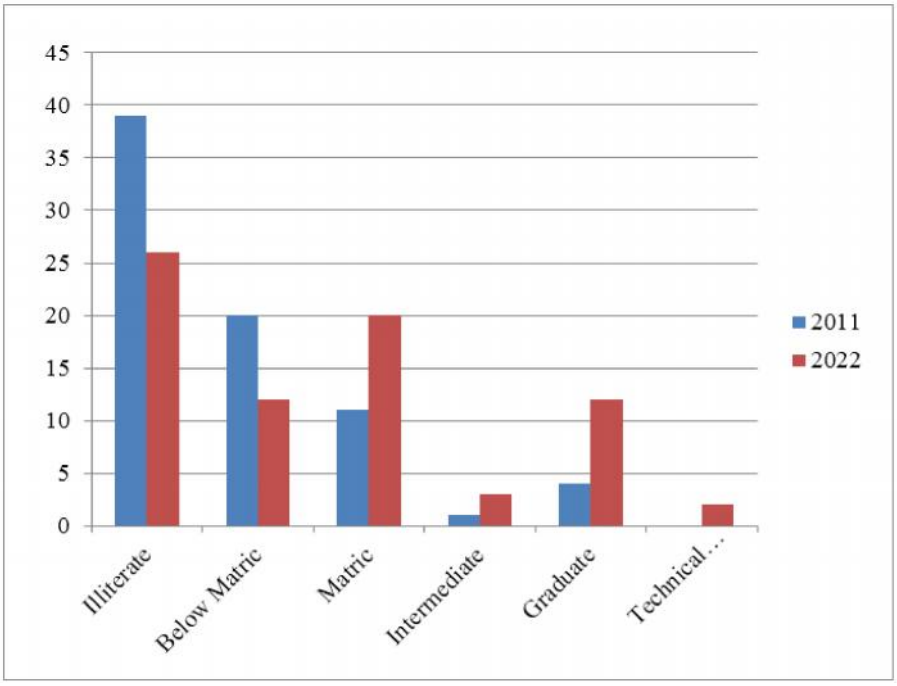
*(**Source:** Primary data, 2022)*

Table No. 9: Literacy level of Sheopur village : Satgawan Block (2022)

S.N.	Literacy Level	No. of Respondent	Percentage
1	Illiterate	26	34.66%
2	Below Matric	12	15.33%
3	Matric	20	27.00%
4	Intermediate	3	04.00%
5	Graduate	12	16.00%
6	Technical Degree	2	02.66%
Total		**75**	**100.00%**

*(**Source:** Primary data, 2022)*

Fig No 3



It is clear from above table that literacy level increases from 2011 to 2022 illiterate person in 2011 in Sheopur village is 50.66 and in 2022 it is 34.66

Food Consumption Pattern

The term food pattern is a subject matter of food and eating it includes a specific mode of food supply food selection, preparation of food, how eating practices are organized.

Table No. 10: Food consumption pattern of Sheopur village : Satgawan Block (2011)

S.N.	Food Pattern	Consumption	No. of Respondent	Percentage
1	Cereals and its substitute	Less than 6 Kg.	31	41.33
		More than 6 Kg.	44	58.66
2	Pulses	Less than 2 Kg.	35	46.00
		More than 2 Kg.	40	54.00
3	Edible oil	Less than 250 gm.	43	56.66
		More than 250 gm.	32	43.33
4	Vegetable and fruits	Less than 5 Kg.	34	45.33
		More than 5 Kg.	41	54.66
5	Milk & Milk product	Less than 4 Kg.	48	64.00
		More than 4 Kg.	27	36.00
6	Meat & Fish	Less than 500 gm.	23	30.66
		More than 500 gm.	46	61.33
7	Eggs	Less than 6	21	48.00
		More than 6	48	38.66
		Donot eat	06	13.33

*(**Source:** Primary data, 2023)*

Table No. 11: Food consumption pattern of Sheopur village per person/week Satgawan Block (2023)

S.N.	Food Pattern	Consumption	No. of Respondent	Percentage
1	Cereals and its substitute	Less than 6 Kg.	48	64.00
		More than 6 Kg.	27	36.00
2	Pulses	Less than 2 Kg.	42	56.66
		More than 2 Kg.	33	43.33
3	Edible oil	Less than 250 gm.	21	61.33
		More than 250 gm.	47	38.66
4	Vegetable and fruits	Less than 5 Kg.	27	62.66
		More than 5 Kg.	49	65.33
5	Milk & Milk product	Less than 4 Kg.	32	42.66
		More than 4 Kg.	43	57.33
6	Meat & Fish	Less than 500 gm.	36	48
		More than 500 gm.	31	41.33
		Vegetarian	8	10.66
7	Eggs	Less than 6	25	34.00
		More than 6	43	56.66
		Do not eat	7	9.33
8	Process food and snacks	Less than 5 packet	34	45.33
		More than 5 packet	41	54.66
9	Fast and junk food	Less than 7 plates	48	64.00
		More than 7 plates	27	36.00

*(**Source:** Primary data, 2023)*

Household Utilities

Adeauate utilities farcilitate access to education and healthcare facilities, particularly in rural areas, by powering essential eauipment and infrastructure.

Table No 12: Common households utilites in Sheopur village: Satgawan block (2011) and (2023)

S. No.	Utilities	2011						2023					
		Yes		No		Total		Yes		No		Total	
		F	P	F	P	P	F	F	P	F	P	F	P
1	Bike	8	10.66	67	89.34	75	100	47	62.66	28	37.34	75	100
2	LPG	12	16	63	84	75	100	73	97.33	2	2.67	75	100
3	Fridge	4	5.33	71	94.67	75	100	21	28	54	72	75	100
4	TV	16	21.33	59	59	75	100	68	90.66	7	9.34	75	100
5	AC			75	100	75	100	1	1.33	74	98.67	75	100
6	Car/Fourwheelars	3	4	73	96	75	100	6	8	69	92	75	100
7	Electric Fan	58	77.33	17	22.67	75	100	71	94.66	4	5.33	75	100
8	Mixer Grinder	7	9.33	68	90.67	75	100	44	58.66	31	41.34	75	100
9	Mobile Phone	17	22.66	58	77.34	75	100	75	100			75	100

*(**Source:** Primary data, 2023)*

Above table no (12) shows that in Sheopur village (2011), 10.66 people used Bike 16% used LPG 5.33% used Fridge 21.33% used TV 77.33% used electric fan 9.33% mixer grinder and 62.66% used mobile phone while in 2023, 37.34% bike 47.33% LPG 28% fridge 8% car 94.66% used electric fan 58.66% used mixed grinde and 100% used mobile phone.

CONCLUSION AND FINDING

The present study tries to understand the development of modern agriculture and changes that have happened in society and economy of the Sheopur village Koderma district. Modern agriculture plays the role of providing employment, income, food, raw materials. After adoption of modern agriculture in the study area, life quality has improved and living standard has upgraded, food costs have declined. This effectively has raised consumer income since it leaves greater purchasing power for other consumer goods for education health care, energy consumption, use of transport etc.

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