

“Changing Scenario of Agricultural Development in Bihar: A Micro Level Study of Bahrampur Village of Patna District”

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ABSTRACT

Agriculture includes raising of crops from the land, animal husbandry, agroforestry, beekeeping and pisciculture. It plays a vital role in the economy of Bihar. The economy of Bihar state is primarily based on agriculture, and about 73.5% of its total workers engaged in agricultural activities, whereas the selected village is a micro level region of Bihar and its development mainly depend upon agriculture, because 84% of its total workers engaged in agriculture and during last decade a notable changing scenario of agricultural development have been seen. The main objective is to study changing scenario of agricultural development at micro level under the influence of modern technologies and others. The present study is based on primary and secondary data. Primary data have been collected by self observation and by interviewing the villagers' and the secondary data from census office' Government office, internet, books, and journals. The selected micro level study area of Bihar is Bahrampur village of Patna district, situated in the east side of Kararua river (branch of Falgu river) in Dhanarua block, having areal extent of 177 hectares (1.77 square km.).

According to census 2011, total population of Bahrampur village is 2115 in which 807 are workers in which 675 (84%) are engaged in agricultural activities. According to primary observations in year 2015, it is clear that there is promising increase in the use of modern technologies in agriculture. And the use of essential chemical, HYV seeds and government sponsored agricultural programmes play significant role in the development of agriculture. Due to technological development and demand of market, the land use pattern for different crops also changes and productivity of crops increased, and villagers becoming prosperous. In conclusive way, we can say that due to use of modern technologies and government sponsored agricultural programmes during last decade, there significant changes occur in village's economic, social,

cultural and other aspects and villagers becoming progressive.

Keywords: - Socio-economic development, Techno-based agriculture, Crop-diversification, Rural service centre.

Introduction:

Agriculture includes raising of crops from the land, animal husbandry, agroforestry, pisciculture and others. Changing in the scenario of agricultural development, is the process of changing in the economy of the region. Agriculture is an important economic activity of the people of rural areas of Bihar. It plays an important role for socio-economic and cultural upliftment of the people. Previously agriculture was the means of livelihood of major portion of the people and high GDP of the nation but it has been decreasing day by day, so changes is required in the field of agricultural development to produce different kinds of crops in the same field to uplift socio-economic condition of cultivators as well as agricultural labour, to provide nutritious food, good garments and hygienic accommodation to the people of rural areas who were socially degraded and economically deprived. At present changes in agriculture in Bihar is highly required for bringing good harvesting which provide sufficient nutritious and healthy diet for the people. It creates job opportunities for agrarian people and reduces socio-economic disparities in the society of the rural areas of Bihar. Changes in agricultural pattern is required and it is demand of the time. In critical situations like drought and flood, modern agricultural pattern would be beneficial for the farmers, and if one crop will fail other will give safety to them.

The study area, Bahrapur village is situated in Patna district of Bihar state in the east side of Kararua river (branch of Falgu river). Like other region of Bihar, it is also very fertile flat land. It is drained by distributaries of Falgu rivers like Kararua river and Bhutahi river. The economy of the village is agriculture oriented and about 73.5% of its total workers engaged in agricultural activities. The principal agricultural crops grown in Bahrapur village are Paddy, Wheat, Maize, Pulses, Oil seeds, Onion, Potato and some other vegetables.

Objectives:

The main objectives of the present paper are –

1. To assess the impact of modern technologies on agricultural development.
2. To have ideas of the relation between economic activities and living standard.
3. To identify the crops grown in special soil type.
4. To evaluate the socio-economic condition of farmers.

Hypothesis:

The following hypotheses have been formulated.

1. Use of modern technologies in agriculture will improve the socio-economic condition of the people of the study area.
2. Agricultural development depends upon assistance of infrastructural facilities like means of irrigation, transportation and marketing facilities etc.
3. Use of modern technologies in agriculture affects the cropping pattern of the study area.

Methodology:

The present paper is mostly based on primary data as well as some secondary data. The primary data is collected by interviewing the villagers and by self-observation method. And the secondary data have been obtained from the census office, government offices and internet. The data have been analysed by different statistical measures and represented by suitable maps and diagrams.

Study area:

The selected micro level study area of Bihar is Bahrapur village of Patna district, situated in the east side of Kararua river (branch of Falgu river) in Dhanarua block, having extent from 25° 18' 46" N to 25° 19' 20" north latitudes and from 85° 8' 0" E to 85° 9' 13" east longitudes. Its area is 177 hectares (1.77 square KM) and altitude 58 meters. According to census 2011, total population of Bahrapur village is 2115 and population density is 1195 persons per square KM. It is situated approximately 35 KM. South from Patna zero mile. It is demarcated by Olipur village in North, Chhotky math village in south, Piprawa village in east and Kararua river in the west.

Agriculture:

Agriculture play a vital role in the economy of Bihar as well as India's economy. The economy of Bihar state is primarily based on agriculture, and about 73.5% of its total workers engaged in agricultural activities whereas 84% of total workers of selected study area (Bahrapur village), engaged mainly in agriculture and its allied activities. Agriculture is deep rooted not only in Bihar rather all Indian society. It is not merely an occupation but a way of life that determines

traditions and culture of Bihar and deeply influences progress of Bihari civilisation. The challenge of feeding our vast population and the experience of food shortage in the pre-independence era, was a vast problem. But since last 50 years, Bihar made immense progress towards food security, because Bihar has made tremendous progress in the agricultural sector over the last 50 years and now a days we have not only becomes self-reliant in food grains but have acquired sufficient resilience to tide over the adverse conditions. These achievements are the result of use of modern technologies, chemical fertilizers, pesticides and due to a policy framework of improving rural infrastructure including irrigation, research, provision of agricultural inputs at reasonable prices and marketing support through minimum price mechanism.

SAILENT FEATURES SHOWING THE CHANGING SCENARIO OF AGRICULTURAL DEVELOPMENT: -

(i) Crops diversification:

Historically the level of technology was low and farmers of the selected study area had to produce all crops which they required for their own consumption. So they were grown various types of crops during different cropping seasons (Kharif, Rabi and Zaid) like food grains (wheat, paddy, maize), pulses (khesari, masoor, moong), oil seeds (mustard, sunflower, red mustard/tori, tisi/flax seed), vegetables (potato, onion, garlic and other green vegetables), spices (coriander/dhaniya, chili, turmeric, methi, mangraila/kalonji, ajwain), fiber crops (sunn/Sanai) and other crops. Generally these crops were grown as mixture of two or more crops (mixed cropping pattern) and according to cropping season rotational cropping pattern were practiced and the proportion of area under various crops were equivalent to their consumption.

Table – I

Area under different crops during year 2000 and 2015.

Cropping season	Before 2000 AD.		After 2015 AD.	
	Crops cultivated	Area covered by crops (in %)	Crops cultivated	Area covered by crops (in %)
Kharif (June -Sept.)	Paddy Maize Fodder	85% 6% 4%	Paddy Fodder Turmeric Vegetables	85% 5% 3% 3%
	Sunai, Turmeric, Green vegetables.	Other – 5%	Maize, Jowar.	Other – 4%
Rabi (Oct. - March)	Khesari Wheat Mustard Potato	55% 20% 10% 8%	Masoor Wheat Mustard Potato Gram	31% 30% 12% 10% 8%
		Other – 7%		Other – 9%

	Garlic, Methi, Chili, Dhaniya, Tisi, Rai/Tori, Fodder.		Dhaniya, Chili, Tisi, Fodder.	
<i>Zaid (April - June)</i>	Onion Fodder Vegetables Maize, Jowar.	10% 3% 1% Other – 6% Fallow land- 80%	Onion Maize Moong Jowar Vegetables	11% 10% 4% 3% 3% Other – 3% Fallow land- 66%

Source: Primary data collected by Self-observation.

But now a days the agricultural scenario became changed and shifted to maximum profit, so crops and cropping pattern became changed under the influence of infrastructural development, use of chemical fertilizers & modern technologies and demand in the market. And at present number of crops grown is decreased to some selected crops only like – Wheat, Paddy, Maize, Masoor, Gram, Mustard, Potato, Onion, Dhaniya, Chili, Turmeric and green vegetables. And no mixed cropping is practiced now. i.e. there is crop diversification take place, means a shift from traditionally grown less remunerative crops to more remunerative crops. The crop diversification also takes place due to governmental policies and trust on some crops over a given time. Market infrastructure development and certain other price related support also induce crop diversification (crop shift).

i.e. the study area has recorded remarkable changes in cropping pattern during these 15 years.

(ii) Agricultural infrastructure:

The selected study area (Bahrapur village) has better agricultural infrastructure facilities with comparison to two decades ago, in terms of irrigation, electricity supply, market facility, road connectivity from urban centre, warehouse facility, veterinary hospital, agriculture centre and others. But the ground water table is decreased and no adequate availability of surface water.

The following table reveals agricultural infrastructure in the study area-

Table- II

Agricultural infrastructure

<i>Before 2000 AD.</i>	<i>After 2015 AD.</i>
No electricity supply. No warehouse facility. No agriculture centre. No market facility. Unmetalled road connectivity with Dhanarua block. Veterinary hospital available. Irrigation by diesel engine & Monsoon.	Electricity supply 20 hours. Warehouse available. Agriculture centre available. Market available within 2 kms. Metalled road connectivity available in all directions. Veterinary hospital available. Irrigation by electric motors & diesel engine and Monsoon.

Source: Primary data collected by Self-observation.

(iii) Urban impact on Agriculture:

There is a remarkable impact of urban centres on the agriculture of selected study area. Even before the development of good connectivity with urban centres, farmers were grown varieties of crops but for their own consumption. But connectivity with urban centres accelerated the agricultural development, because traders easily arrived to the village to buy the agricultural products, so now cultivators try to grow some maximum profitable crops and for this they use modern technologies, HYV seeds, chemical fertilizers, pesticides etc. And now cultivators have

take more interest in growing vegetables in all seasons for earn more money than growing food crops.

(iv) Production and productivity:

Due to use of modern technologies, HYV seeds, chemical fertilizers, pesticides and others, the production as well as productivity of crops increased but due to farmers' interest in maximum profitable crops, some

Table – III

Agriculture: Area covered, Production & Productivity during year 2000 & 2015.

Crops	Year: 2000 – 2001.			Year: 2015 – 2016.		
	Area in Acre	Production in Quintal	Productivity Quintal/Acre	Area in Acre	Production in Quintal	Productivity Quintal/Acre
Paddy	350.6	4800	13.69	350.6	6732	19.20

Wheat	82.5	1000	12.12	123.7	1600	16.00
Khesari	226.9	1040	4.58	<i>Not grown now</i>		
Pulses	Negligible		-----	136.1	784	5.76
Maize	24.7	128	5.17	41.2	792	19.20
Potato	33	2120	64.24	41.2	5280	120.00
Onion	41.2	4200	101.82	45.3	6397	140.99
Oil seeds	41.2	132	3.20	49.5	317	6.40

Source: Primary data collected by Self-observation.

crops (Khesari and Tulbuliya maize) are not grown now, and they started to grow some other crops like Masoor, Gram, Moong, Vegetables etc. The table – III shows the production and productivity of different crops in the study area.

During last two decades, use of chemical fertilizers increases more than two times meanwhile use of pesticides, insecticides & herbicides increases more than five times, which is harmful for living things. And use of modern instruments is also increases which is shown in the following table.

(v) Use of modern technologies, chemical fertilizers & pesticides:

Table – IV

Agricultural instruments in Bahrapur village.

Instruments	Year: 2000 – 01.	Year: 2015 – 16.
Combine	No	1
Tractor	1	10
Power tiller	No	8
Electric motor	No	35
Diesel engine	40	55
Ox or Buffalo	120	36

Source: Primary data collected by Self-observation.

(vi) Land use pattern:

The total area of selected micro level study area is 177 Hectare in which 10.12 Hectare is settlement area and rest 166.88 Hectare is agricultural land including Road, Ahar and vegetation covered area. Here all the agricultural area is available for cultivation.

(vii) Government sponsored agricultural Programmes:

There are following agricultural development Programmes managed and monitored by Government, which play important role in agricultural

Development in the study area.

- (i) Seeds subsidy scheme.
- (ii) Diesel subsidy scheme.
- (iii) Agriculture mechanization scheme.
- (iv) Kisan Salahkar Yojana.
- (v) Pradhan Mantri Krishi Sinchai Yojana.

etc.

(viii) Problems of Agricultur:

Like most part of India, the economy of Bahrapur village of Bihar, heavily depends upon agriculture and farmers depend on the Monsoon rain. There are following main problems of agriculture of study area-

- (a) Here no canal, no river, only electric motors and diesel engines are the main source of irrigation.
- (b) HYV seeds and fertilizer are not available in the market on time on affordable price. And government's schemes regarding providing of HYV seeds and fertilizer are executed very late, therefore delay in showing process, which affects the productivity of crops.
- (c) Various types of diseases increases the production cost.
- (d) Storage of potato and onion is needed for better profitability of farmers.
- (e) Proper checking of soil fertility is required.
- (f) Need of market to sell the agricultural products.

etc.

(IX) Prospects of agricultural development in the study area:

The geographical location of the study area is best for setting up of Rural Service Centre, there after market facility will be easily available which will support the cultivation of crops, mainly perishable crops and farmers will get maximum profit from their agricultural products so they will

feel energetic and invest more and more in agricultural work and agricultural development will be continued.

Suggestions:

- (I) Government should make the paperwork of minimum support price policy simple and easy.
- (II) Government should encourage farmers towards soil testing.
- (III) Government should make people aware of listening to agriculture based programs on radio and television.
- (IV) Government should attract the rural youth towards agriculture through various awareness programs and skills development.
- (V) Farmers should be encouraged for organic farming.
- (VI) Government should make available seeds and fertilizer on time in market.

etc.

Conclusion:

In conclusive way, it can be said that there is positive changing scenario of agricultural development in Bihar is continue. During last two decades production and productivity of crops increases rapidly and due to road connectivity and market availability selling of agricultural products and purchasing of agricultural needs became easy, so that farmers benefited more and more. And during this period the crops and cropping pattern became changed. At present, use of modern technologies, chemical features and pesticides increases. At last, it can be said that the agricultural development of study area is satisfactory.



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