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Review Article

Impact of New Economic Policy on Agricultural Development with Special Reference to BIHAR

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Abstract

The agriculture sector has been playing an important role in the economic development of Uttar Pradesh. The agriculture at the time of independence was very insignificant. It was suffering from problems of illiteracy, poverty, starvation, low productivity, poor technology, and lack of capital, lack of agricultural machinery, transportation, power, marketing, inadequate irrigation facilities and skewed distribution of land holdings. The government adopted high yielding varieties technology or green revolution for the development of agricultural sector through increase the production and ensure job security for the poor farmers and increase capital in agriculture. As results, the growth of agriculture sector increased and the country achieved self-reliance in food security. But the growth of population is geometric and agricultural production is arithmetic. There was food security problem.
The agriculture sector has been facing the problems of low-level capital, poor technology, low productivity, disguised unemployment, population pressure on land and unequal distribution of land holdings. During the 1990s, the new economic policy brought tremendous changes in the agriculture sector with increasing investment, arrival of multinational companies, opening the door of public sector for the private sector and financial sector reforms.
The new agricultural policy allowed agriculture sector to global agriculture business and had implications for the rural population, food security, employment and poverty at the state and national level. Hence, an attempt is made to analyse the impact of new economic policy on agricultural development with special reference to the state of BIHAR in terms of agricultural growth, income, production, productivity, and technology. This study based on secondary data collected from various reports, planning commission and census and others. The land use pattern is changing and diversification and commercialisation of crops are increasing in the state of Uttar Pradesh.
Keywords: *Agriculture GDP, Productivity, New Economic Policy, Agriculture Development Commercialization, Irrigation and Technology*

INTRODUCTION

BIHAR is the most populous state in India. The state continues to be predominately a rural economy basically an agrarian economy in terms of population and workforce. The share of the agriculture, industry and service sector in the state income was 31.7 per cent, 22.2 per cent and 46.1 per cent (Census 2011). It is the mainstay of the state economy, contributing about 28.8 per cent of Gross Domestic Product (GDP) and about half of state's population depends on agricultural and allied activities for their livelihood (census 2011). The contribution of agricultural to GDP has been declining over the year while the other sectors as, services and manufacturing have increasing trend. The contribution of agriculture & allied sector to GDP was

38.80 per cent in 1994-95 and become 28.84 per cent in 2010-11.

The share of the Industrial sector to GDP was 19.20 per cent in 1994-95 and increased to 21.39 per cent in 2010-11, whereas the share of the service sector to GDP was 42 per cent in 1994-95 and increased to 49.77 per cent in 2010-11 in the state. However, the agriculture sector is providing about 65 per cent employment and accounted 29.6 per cent share in the state economy. The state is contributing about one- fifth of the total food grains production in the country. The state is contributing 21.55 per cent to the total national production of food grains, vegetables, fruits and milk production and 40 per cent to the total production of potato and sugarcane. The main agricultural crops in the state are wheat, rice, sugarcane, pulses, and vegetables. The main industries in the state are cement, vegetable oils, textiles, pulses, cotton yarn, sugar, jute, and carpet. The industrialization development in the state is highly skewed with the western region of the state accounting for most of the industries of the state.

The situation of the agriculture sector was very poor and insignificant during 1950-60s. The conditions of the farmers were not good. Farmers were suffering from low productivity, illiteracy, poverty, starvation, lack of the capital, inadequate irrigation facilities, lack of agricultural machinery, fertilizers, pesticides, high yielding varieties of seeds, transportation, power, and marketing, agricultural research institution's, institutional credit and land holdings. The small and marginal farmers were illiterate to use proper technology, seeds, and fertilizers. They depended on rainfall of the monsoon for the irrigation. They had to have very few and scattered land holdings, no proper policy and programmes for the development of the land and poor access to modern technology. A major part of the lands were occupied by the Zamindars and big farmers. On the other hand, the state had very wide inter – regional and inter – district disparities. The Eastern, Central, and Bundelkhand regions have been tackling very tough situation during independence.

These regions had been facing several problems like as small size of land holdings, low productivity, floods, drought, farmer's indebtedness and poor technology. The state was not self-sufficient in food grains but had to depend on imports of food grains.

After independence, the government of BIHAR made several agricultural programmes and policies to increase the production and ensure job security for the poor farmers who were engaged in cultivation. During the 1950-51, the aim of the government to solve the problems of the food crisis and given the highest priority to the agriculture sector at the state level and national level. Therefore, the state had focused on developing these factors to increase the agricultural productivity.

The government of BIHAR was implemented several policies and programmes to achieve the objective of self-sufficiency in food grains and increasing investment particularly in constructing irrigation and expansion of institutional credit. After the humiliating experience with the import of food grains in the mid-1960s, the government was adopted new High-Yielding Varieties

Programme (HYVP) and public investment to increase agricultural productivity during 1970's. Luckily, at that time, new high-yielding dwarf varieties of wheat and rice were available in Mexico and the Philippines respectively. The new High-Yielding Varieties Programme had increased domestic food production at a faster rate without upsetting the agrarian structure. The high-yielding varieties programme increased the productivity of wheat initially and later for rice. This breakthrough is popularly known as the 'green revolution'.

The green revolution had increased agricultural productivity and made the state self-reliance in food production. It may be noted that without the green revolution it would not have been possible to raise the potential production of state agriculture. Incentive policies were focused on both inputs and output. Subsidies for inputs like irrigation, credit, fertilizers, and power increased significantly in the 1970s and 1980s. The objective of the subsidies is to provide inputs at low prices to protect farmer interests and encourage diffusion of new technology.

Similarly, on the output side, there has been a comprehensive long-term procurement-cum-distribution policy in the post-green revolution period. The government announces the support prices at sowing time and agrees to buy all the grains offered for sale at this price. To support these operations, institutions like the Food Corporation of India (FCI) and the Agricultural Prices Commission (APC) were established in the mid-1960s.

The Government emphasized on effective and favourable techniques for the promotion of agriculture productivity. Therefore, the condition of the agriculture sector started to improve in positive trends. But, the growth of population was faster than agriculture growth rate. The agriculture sector had been facing the problems of low-level capital, lack of irrigation facilities, poor technology, low productivity, disguised unemployment, population pressure on land and unequal distribution of land holdings till 1990's in the state.

The Government launched new economic policy (1991) to change agriculture sector with increasing investment, arrival of multinational companies, opening the door of public sector for the private sector and financial sector reforms. The new agricultural policy allowed agriculture sector to global agriculture business and had implications for the rural population, food security, employment and poverty at the state and national level. Hence, an attempt is made to analyse the impact of new economic policy on agricultural development with special reference to the state of BIHAR in terms of agricultural growth, income, production, productivity, and technology.

The new economic policy was implemented to boost agriculture sector in the state. The several studies were published on agriculture development at the state level and national level. Most of the studies have focused on developmental issues of agriculture sector and impact of new economic reforms on the agriculture sector. Some of the important studies are mentioned here. Singh, Gyaneshwar (2014) has shown that the problems and

challenges of globalization on the agriculture sector. He observed that globalization has been affecting farmers and agriculture workers. He also observed that the new economic policies were implemented to improve the livelihood of the poor people in poor countries. But, it has been increasing the gap between rich and poor and urban and rural.

Prasad, Rajendra (2009) has studied that after new economic reforms, the consumption of fertilizers in agriculture sector is increasing. However, the fertilizer use efficiency has been very low in the agriculture sector. He focused that the balance doses of NPK, methods and scale are required to significant growth of agriculture. Naveen, G (2012) has revealed that the role of agriculture in the Indian economy has been changing. He also examined that the decline of agriculture in Gross Domestic Product (GDP) is declining due to the growth of service sector and manufacturing sector. Ahluwalia, M.S. (2002) has explained that the new economic reforms have been focused on industrial and trade policy neglecting agriculture which provides the livelihood of 60 per cent of the population. Adhau, B.P. (2013) has shown that agriculture sector is the backbone for any economic development. Industrial development is possible when agricultural activities will grow.

Sharma, V.P. (2011) has studied on agriculture development under the new economic regime. He has experienced that the new economic reforms have failed to increase the agricultural growth and poverty reduction. The last two decades, Indian agriculture sector has been facing major challenges like decline agricultural growth, regional disparities, degradation of natural resource and decline input efficiency. Tyagi, V. (2012) has revealed that the productivity of the agriculture capital formation is decreasing. There is inadequate credit delivery system and decline the growth of the new technology.

Sahu, G.B. and D. Rajasekhar (2005) have revealed that formal credit has improved the conditions of large farmers compared to the small &marginal farmers. Raman, R & Kumari, R. (2012) has focused on district and regional level disparities in agriculture development in Uttar Pradesh. Most of the studies explained the various issues of the agriculture and impact of new economic policy at the state level and national level. The few studies have attempted to analyses the impact of new economic policy on agriculture. But, no studies have been analysed systematically the impact of new economic policy on the agriculture sector in BIHAR in term of agriculture growth, productivity, irrigation, and fertilizer. Hence, an attempt is made to study the new economic policy and agriculture sector with special reference to Uttar Pradesh.

The objective of the study is to analyse the impact of new economic policy on agriculture in Uttar Pradesh. It is a micro level study and based on secondary data which has been taken from 1950-51 to 1980-81 and 1990-91 to 2010-11 from various reports in Uttar Pradesh.

Agricultural Production & New Economic Policy

The agriculture sector is playing an important role in the economic development of Uttar Pradesh. The growth of agriculture production is the positive change in the economic development of

the state. In facts, the demand of the agricultural products has been increasing with the rapid rise of population in the state. Therefore, the agricultural production should be increased proportionately to population growth. If agricultural production will not rise to the growth of population then it will affect the overall economic growth of the state.

Hence, the growth of agricultural production is analysed into two parts (i) Pre-New Economic Policy Period (1950-51 to 1980-81) and (ii) Post-New Economic Policy Period (1990-91 to 2010-11).Table 1 shows that the percentage of the area of crops production to the total area of crops production in BIHAR during 1950-51 to 1980-81 to 1990-91 to 2010-11.

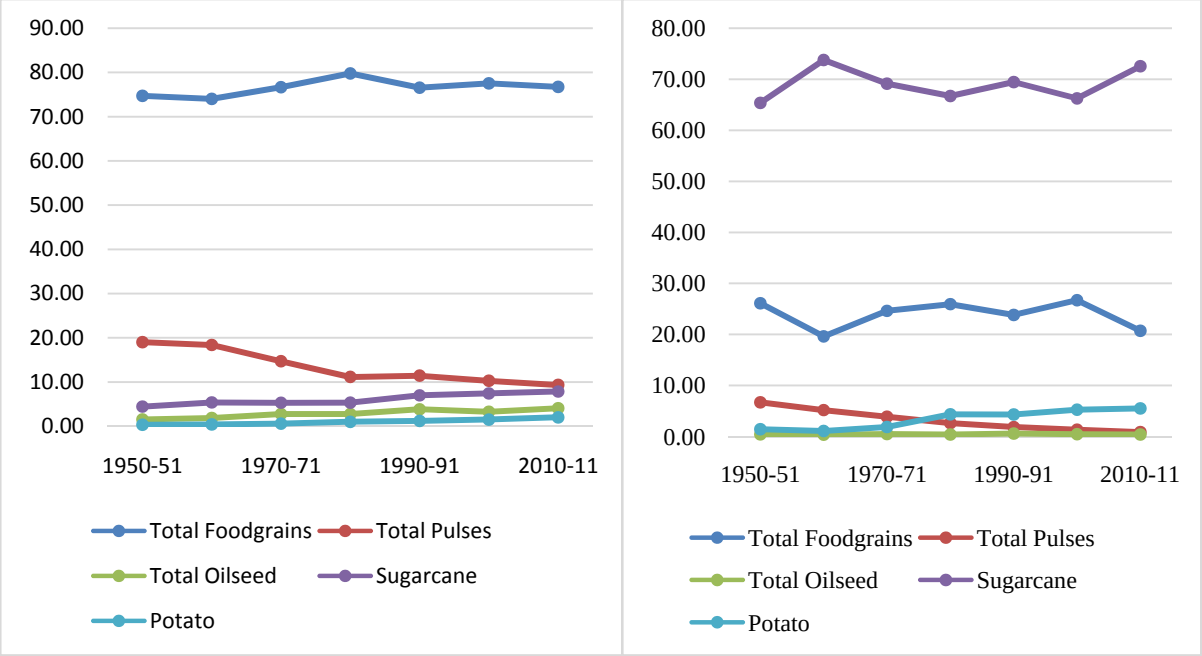
Table 1 show that the area of total food grains was 74.71 per cent in 1950-51 and increased to 79.78 per cent in 1980-81. Similarly, the area of total food grains was 76.78 per cent in 1990-91 and increased to 77.54 per cent and again decreased to 76.54 per cent in 2010-11 in the state. On the other hand, the area of total pulses was 19.0 per cent in 1950-51 and decreased to 11.14 per cent in 1980-81 and the area of total pulses was 11.42 per cent in 1990-91 and decreased to 10.28 per cent in 2010-11 in the state. The area of total oilseed was 1.52 per cent in 1950-51 and become 2.76 per cent in 1980-81.

In 1990-91, the area of total oil seed was 3.83 per cent and decreased to 3.28 per cent in 2000-01 and again increased to 4.07 per cent in 2010-11. On the other hand, the area of sugarcane was 4.43 per cent in 1950-51 and went up to 5.31 per cent in 1980-81. Similarly, the area of total sugarcane was 6.98 per cent in 1990-91 and increased to 7.84 per cent in 2010-11. The percentage area of total potato was 0.34 per cent in 1950-51 and become 1 per cent in 1980-81. In the same way, the area of total potato was 1.21 per cent 1990-91 and increased to 2.01 per cent in 2010-11 in Uttar Pradesh. Table 2 reveals that the percentage of the area of crops production to the total area of crops production in Uttar Pradesh. The percentage of total foodgrains production was 26.10 per cent in 1950-51 and become 25.93 per cent in 1980-81 per cent. Similarly, the percentage of total food grains was 23.82 per cent in 1990-91, and increased to 26.70 per cent in 2000-01 and again decreased to 20.70 per cent in 2010-11 in the state. The percentage of total pulses production was 6.70 per cent in 1950-51 and decreased to 2.63 per cent in 1980-81. In 1990-91, the percentage of total pulses was 1.86 per cent in 1990-91 and decreased to 0.87 per cent in 2010-11 in the state. On the other hand, the percentage total oilseeds were 0.40 per cent in 1950-51 and become 0.39 per cent in 1980-81 and further the production of oilseed production was 0.57 per cent in 1990-91 and decreased to 0.38 per cent in 2010-11. The percentage of sugarcane and potato production was 65.38 per cent and 1.42 per cent in 1950-51 and increased to 66.73 per cent and 4.29 per cent in 1980-81. Similarly, the percentage of sugarcane and potato was 69.46 per cent and 4.29 per cent and increased 72.55 per cent and 5.49 per cent in 2010-11 in Uttar Pradesh. Hence, the table 1 & 2 clearly shows that the new economic policy has changed over all the cropping patterns in Uttar Pradesh.

The new economic policy was implemented to increase agricultural productivity, investment, income, employment and agricultural research and technology in Uttar Pradesh. But, it has failed at every stage. From the above analysis, we observed that the area of production of commercial crops such as total oilseeds, sugarcane and potato has been continuously increasing during 1990-91 to 2010-11 whereas the percentage of the area of foodgrains production has been stagnant during 1990-91 to 2010-11. The percentage area of pulses has been continuously declining during 1990-91 to 2010-11. The new economic policy has shifted cropping pattern from traditional cropping to commercial cropping in the state. Similarly in the context of production, the production of foodgrains, pulses and oilseeds have been decreasing during 1990-91 to 2010-11 and the production of sugarcane and potatoes has been increasing during 1990-91 to 2010-11 in Uttar Pradesh. The area and production of crops to total area and production of crops in BIHAR during 1950-51 to 1980-81 to 1990-91 to 2010-11 also shown by following figures:

Figure 1: The Percentage of Area of Crops to Total Area of Crops in BIHAR

Figure 2: The Percentage of Production of to Crops to the Total Production of Crops in BIHAR



Source: Agricultural Directorate, BIHAR

Table 3 highlights the average yield of major crops production (In qtl/hect) in BIHAR during 1950-51 to 2010-11. In 1950-51, the average yield of wheat was 8.21 qtl/hect and increased to 16.50 qtl/hect in 1980-81. Further, the average yield of wheat was 21.71 qtl/hect and increased to 31.11 qtl/hect in 2010-11. The average yield of rice was 5.19 qtl/hect and 10.53 qtl/hect in 1980-81 and thereafter the average yield of rice was 18.53 qtl/hect in 1990-91 and increased to 21.22 qtl/hect in 2010-11 in Uttar Pradesh.

On the other hand, the average yield of Jawar, Bajra, and Maize was 6.86 qtl/hect, 6.44 qtl/hect and 7.81 qtl/hect and become 5.99 qtl/hect, 7.37 qtl/hect and 16.69 qts/hect in 1980-81 and further the average yield of Jawar, Bazra and Maize was 9.36 qtl/hect 11.15 qtl/hect 13.06 qtl/hect and become 10.30 qtl/hect, 16.61 qtl/hect and 15.04 qtl/hect in 2010-11. The average yield of sugarcane was 291.04 qtl/hect in 1950-51 and increased to 470.90 qtl/hect in 1980-81. The average yield of sugarcane was 558.10 qtl/hect and increased to 567.72 qtl/hect in 2010-11. In 1950-51, the average yield of potato was 78.08 qtl/hect and increased to 156.66 qtl/hect in 1980-81 and thereafter the average yield of potato was 190.29 qtl/hect in 1990-91 and increased to 241.49 qtl/hect in 2010-11. On the other hand, the average yield of total food production was 6.89 qtl/hect in 1950-51 and increased 12.19 qtl/hect in 1980-81 and further it was 23.91 qtl/hect in 1990-91 and increased to 23.91 qtl/hect in 2010-11.

Similarly, the average yield of total pulses was recorded at 27.68 qtl/hect in 1950-51 and decreased to 23.09 qtl/hect in 1980-81 and further it become 18.42 qtl/hect and decreased to 8.24 qtl/hect in 2010-11. The average yield of total oilseeds was 5.24 qtl/hect in 1950-51 and increased to 5.27 qtl/hect in 1980-81 and further it become 8.35 qtl/hect in 1990-91 and then increased to 8.36 qtl/hect in 2010-11 in Uttar Pradesh. According to the above analysis, we have observed that the new economic policy has significantly impacted on the average yield of commercial crops in the state. But, there has been no significant impact on average yield of food grains and pulses production in Uttar Pradesh. In facts, the average yield of the pulses has been continuously declining during pre-new economic period and post- new economic period in Uttar Pradesh.

Growth and Trends of Irrigation in Uttar Pradesh:

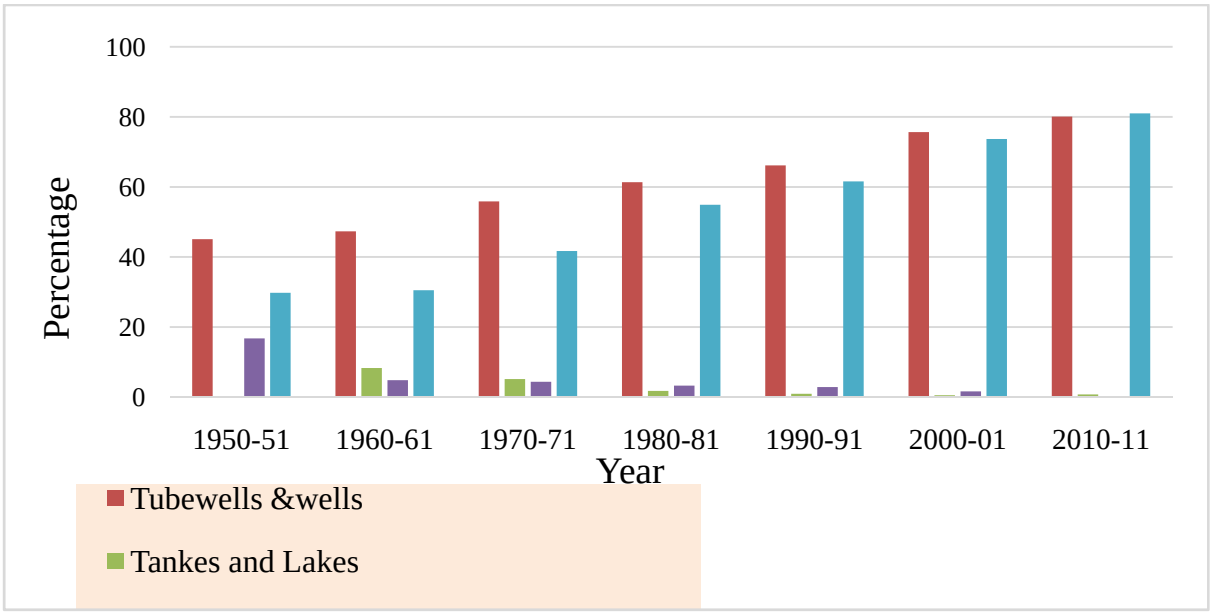
The most important input for agricultural development in BIHAR is irrigation as it facilitates agricultural productivity and increases multiple cropping patterns. This objective can be fulfilled only by providing irrigation facilities to the farmers. According to Trevelyan, "Irrigation is everything in India; water is even more valuable than land because when water is applied to land, it increases its productivity at least six-fold and renders it productive which otherwise would produce nothing or next to nothing." Irrigation is playing the crucial role in raising prosperity, increase incomes and reducing poverty. Development of the irrigation facilities can increase employment opportunities by developing the system of multiple cropping.

It is a vital source of government income, economic growth, and planning. Irrigation is vital for the development of the industry, trade and transportation in the state. Irrigation is also important for increasing plantation, commercial farming, and cultivable land at the state and national level. On the other hand, there are various problems of irrigation in the state is as, the problem of water logging and salinity, drainage, irregular supply, lack of co-ordination, disputes, and regional imbalances.

The important source of the irrigation in BIHAR is like, canals, tube-wells and

wells, tanks and lakes and others sources. The various source of irrigation is discussed below. Figure 1 shows the percentage of net area irrigated by different sources in BIHAR during 1950-51 to 2010-11.The percentage of net irrigated area by the canal was 38.17 per cent in 1950-51 and increased to 39.50 per cent in 1960-61 and again decreased to 18.89 per cent in 2010-11 in Uttar Pradesh. On the other hand, the percentage of net area irrigated by tube-well/wells was 45.07 per cent in 1950-51 and increased to 80.06 per cent in 2010-11 in the state. In fact, the percentage of net irrigated area by tube-wells/wells has been increasing continuously during 1950-51 to 2010-11 in the state. The percentage of net area irrigated by tanks and lakes was 8.31 per cent in 1960-61 and become 0.76 per cent in 2010-11. In the same way, the percentage of net irrigated area by 'other sources' was 16.76 per cent in 1950-51 and decreased to 0.29 per cent in 2010-11 in Uttar Pradesh. The percentage of net area irrigated to net area sown was 29.8 per cent in 1950-51 and increased to 81 per cent in 2010-11 in the state. Currently, It is analysed that the percentage of net irrigated area by net area sown is 81 per cent and about 80 per cent of irrigation work is being done by tube-wells and wells and 19 per cent by canals and remaining 1 per cent is done by tanks, lakes and 'other sources' in the state of Uttar Pradesh. It is experienced that the new economic policy has brought significant growth in irrigation sector which increased the percentage of net area irrigated by tube-well as well as the percentage of net area irrigated to net area sown during the post-reform period in the state. But, the new economic policy has impacted more as land use pattern, cropping pattern, farming system, and irrigation pattern. The problems of surface water and ground water are increasing. The water level is continuously decreasing due to diversification and commercialisation of the crops in the state.

Fig 3: Percentage of Net area irrigated by different sources in BIHAR (1950-51-2010-11)



Source: Directorate of Agriculture, BIHAR

The major areas of the state are suffering from drought and low agricultural productivity. The micro and drip irrigation technology are increasing to raise agricultural productivity and solve the problem of irrigation in the state. But, it is costly and too expensive for the small and marginal farmers. This should be the matter of concern before the policy maker and Government to use new irrigation technology in the drought-prone area in the state of Uttar Pradesh.

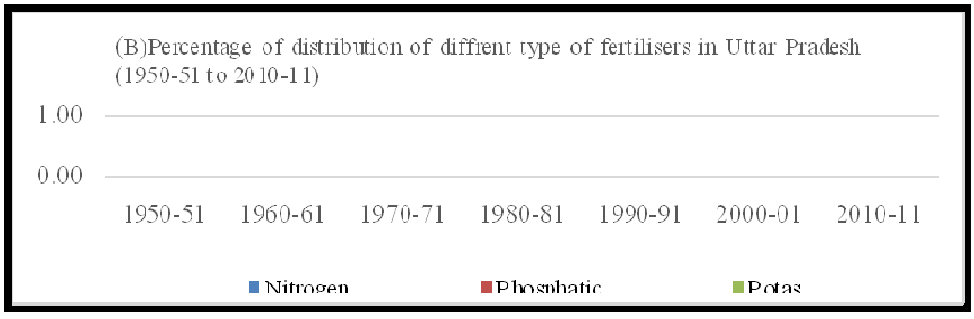
Growth & Trends of Fertilizers in Uttar Pradesh:

The use of fertilizers is important inputs for increasing land fertility and increasing productivity. It is vital inputs for accelerating the growth of agricultural outputs and ensures food security in the state of Uttar Pradesh. According to National Commission, "It has been experienced throughout the world that increased agricultural production is related to increase consumption of fertilizers." In facts, the use of fertilizers is beneficial for increasing agricultural productivity and land fertility but it is also harmful to the land and agricultural productivity when a significant proportion of fertilizers are not used as Punjab and Haryana. The major chemical fertilizers are using in BIHAR as, nitrogenous fertilizers, phosphatic fertilizers, and potassic fertilizers. The figure 4(A) reveals that the distribution of chemical fertilizers in BIHAR during 1950-51 to 2010-11.

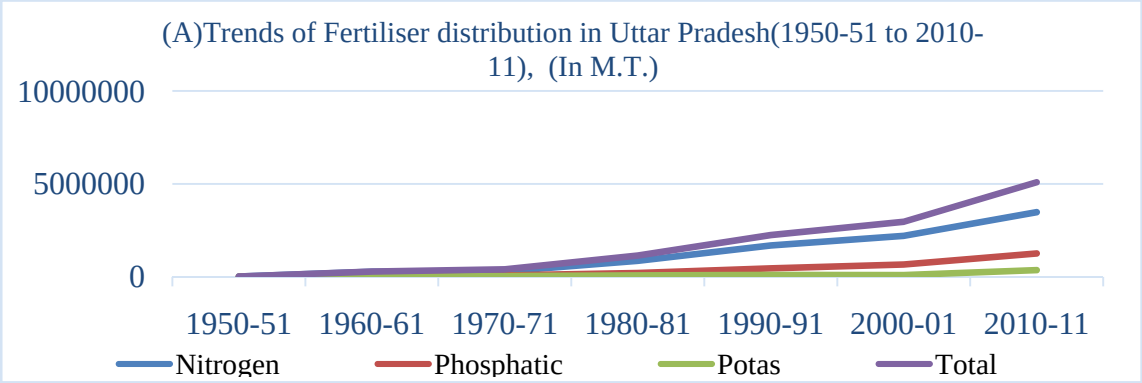
The distribution of nitrogen fertilizer was 20000 M.T. in 1950-51 and increased to 3476864 M.T. in 2010-11in the state. In the same way, the use of phosphate fertilizers was 500 M.T in 1950-51 and went up 1253453 M.T. in 2010-11. The distribution of potash fertilizers stood at 45000 M.T. in 1970-71 which was increased to the amount of 358092 M.T. in 2010-11. The total distribution of chemical fertilizers in the state was 20500 M.T. in 1950-51 which was increased to the amount 5088409 M.T. in 2010-11.

Figure 4(B) highlights that the percentage of distribution of different type of chemical fertilizers to the total chemical fertilizers in Uttar Pradesh. The percentage of distribution of nitrogen fertilizers was 97.5 per cent in 1950-51 which was decreased to 68.3 per cent in 2010-11 and the percentage of phosphate fertilizers was 2.4 per cent in 1950-51 and increased to 24.6 per cent in 2010-11. The percentage of potash fertilizers was 10.9 per cent in 1950-51 and become 7.0 per cent in 2010-11 in the state. According to the above figure, it is experienced that the percentage of nitrogen & potash fertilizers has gone down and Phosphatic fertilizers have increased respectively during the pre-new economic period and post-new economic period in Uttar Pradesh.

Fig. 4: Distribution of Chemical Fertilizers in BIHAR (1950-51 to 2010-11)



Source: Statistical Abstract U.P, 2013.



Source: Statistical Abstract U.P, 2013.

Programme & Policies:

The Government of BIHAR has launched various programmes and policies to increase the agricultural productivity such as, New Economic Policy (1991), Industrial Policy (1994), Agro-Industrial Policy (1995), State Water Policy (1999), State Agricultural Policy (1999), National Agriculture policy in (2000), Agricultural policy (2005), Kisan Credit Cards (1998), Pradhan Mantri Jan Dhan Yojana (2014) and Pradhan Mantri Fasal Bima Yojana (2016). The objectives of water policy were to improve institutional framework, legislations, and management aspects, ensure self-sufficiency in water resource development, irrigation and drainage investments, modernization of irrigation system and research and technology in the state. Further, The Agricultural Policy 1999 announced to increase employment, income, ensure food security, scientific agriculture, achieve an annual growth rate of 5.1 per cent, maintain ecological balance, develop eco-friendly farming systems, diversify existing agricultural towards high-value crops and develop appropriate infrastructure facilities. Thereafter, the government launched Agricultural Policy 2005 to improve agricultural growth and development. The policy focused on raising private investment through agro-processing industry, diary, horticulture, fisheries, vegetables, sugar and animal meets. The government also implemented Kisan Credit Card, Pradhan Mantri Jan Dhan Yojana, and Pradhan Mantri Fasal Bima Yojana to provide timely agricultural credit, subsidy and crop insurance from natural calamities.

Conclusion:

The new economic policy has largely neglected the agricultural sector in Uttar Pradesh. It has made adverse effects of the green revolution technology and agricultural expenses in term of increasing the cost of the agricultural inputs, inadequate agricultural investment, exploitation of multinational companies, lack of agriculture inputs and ineffective crop insurance policy. The policy has changed the price and wage policy in such a way that the agricultural workers have forced to move towards non-agriculture sector in urban areas. On the other hand, it has been experienced that the new economic policy has shifted cropping pattern from traditional cropping pattern to

commercial cropping pattern in the state. The new economic policy has brought significant growth in the irrigation sector. But, it has decreased the level surface and ground water in the state.

The water level is continuously decreasing due to diversification and commercialisation of the crops in Uttar Pradesh. On the other hand, the percentage of nitrogen & potash fertilizers has gone down and phosphatic fertilizers have increased respectively during the pre-new economic period and post-new economic period in Uttar Pradesh. The new economic policy has stood up agriculture sector on backfoot

The Government of BIHAR must think about the various agricultural issues and implement appropriate programme and policy to boost agricultural productivity, income, and employment. They must also be thought to improve the land laws, irrigation technology, credit facilities, seeds, power, transportation, marketing, price, wages and agricultural research and technology. The state must be focused to develop an integrated approach through appropriate policies, improved institutional arrangements and better infrastructure facilities to increase agricultural productivity, ensure equity, social justice and inclusive growth in the state of Uttar Pradesh.

Appendix:

Table1: The percentage of area of crops to total area of crops in Uttar Pradesh

Crop/Year	1950-51 to 1980-81				1990-91-2010-11		
	1950-51	1960-61	1970-71	1980-81	1990-91	2000-01	2010-11
Total Foodgrains	74.71	74.03	76.68	79.78	76.56	77.54	76.75
Total Pulses	19.00	18.35	14.68	11.14	11.42	10.28	9.32
Total Oilseed	1.52	1.85	2.75	2.76	3.83	3.28	4.07
Sugarcane	4.43	5.36	5.30	5.31	6.98	7.40	7.84
Potato	0.34	0.41	0.60	1.00	1.21	1.50	2.01

Source: Agricultural Directorate, BIHAR

Table 2: Average Yield of the major Crops in BIHAR (1950-51 - 2010-11)

(In. Qtl / Hect)

Crops/Year	**1950-51 to 1980-81**				**1990-91to 2010-11**		
	1950-51	1960-61	1970-71	1980-81	1990-91	2000-01	2010-11
Wheat	8.21	10.21	13.01	16.50	21.71	27.71	31.11
Rice	5.19	7.53	8.16	10.53	18.53	19.77	21.22
Jawar	6.86	5.53	6.62	5.99	9.36	9.48	10.30
Bazra	6.44	3.97	7.87	7.37	11.15	14.50	16.61
Maize	7.81	24.56	17.10	16.69	13.06	7.21	15.04
Sugarcane	291.04	410.21	406.42	470.90	558.10	549.19	567.72
Potatos	78.08	70.37	92.00	156.66	190.29	213.14	241.49
Total Pulses	27.68	22.82	24.42	23.09	18.42	13.53	8.24
Total oil seeds	5.24	5.65	5.45	5.27	8.35	8.25	8.36
Total food grains	6.89	7.90	10.00	12.19	17.39	23.04	23.91

Source: Agricultural Directorate, BIHAR

Table 3: Percentage of Net Area Irrigated by Different Sources in BIHAR (1950-51 to 2010-11)

Year		Canal	Tubewells & wells	Tanks and Lakes	Other Sources	Percentage of net area irrigated to net area sown
1950-51 to 1980-81	1950-51	38.17	45.07	-	16.76	29.8
	1960-61	39.50	47.33	8.31	4.86	30.5
	1970-71	34.60	55.88	5.14	4.37	41.7
	1980-81	33.62	61.35	1.76	3.27	54.9
1990-91 to 2010-11	1990-91	29.95	66.17	0.98	2.90	61.6
	2000-01	22.17	75.63	0.54	1.66	73.7
	2010-11	18.89	80.06	0.76	0.29	81.0

Source: Directorate of Agriculture, U.P

Table 4: Distribution of Chemical Fertilizers in BIHAR (1950-51-2010-11)

(In Million Tons)

Year		Nitrogen	Phosphate	Potash	Total
1950-51 to 1980-81	1950-51	20000(97.5)	500(2.4)	-	20500(100)
	1960-61	281000(99.2)	2000(0.7)	-	283000(100)
	1970-71	291000(70.8)	75000(18.2)	45000(10.9)	411000(100)
	1980-81	860642(74.8)	209338(18.1)	80613(7.0)	1150593(100)
1990-91 to 2010-11	1990-91	1691883(75.3)	455488(20.2)	98348(4.3)	2245719(100)
	2000-01	2206497(74.5)	662083(22.3)	93249(3.1)	2961829(100)
	2010-11	3476864(68.3)	1253453(24.6)	358092(7.0)	5088409(100)

Source: Directorate of Agriculture, U.P

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