



## To Estimate the Trend Scenario of Selected Inputs and Outputs of Agricultural Sector in Haryana, India

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### Abstract

Agriculture plays an important role where man learnt to practice as a means of living and way of life. Indian agriculture is undergoing rapid transformation since the introduction of green revolution technology. Farmers were cultivating varieties of crop on a piece of land and undertaking several enterprises on their farm portfolio. The significant role of agriculture in nation building all over the world cannot be overemphasized. Thus the present study tries to estimate the trend scenario of selected inputs and outputs agricultural sector in Haryana and the study is based on secondary data collected from different published issues of 'Statistical Abstracts of Haryana' for the selected period. The results of the study have been complied by compound growth rates. The present study revealed that two common crops that is Gram and Groundnut showing the negative trends both in production and productivity and all the remaining crops except (production of Maize and Massar and productivity of Moong) have shown positive growth rates. These shows that production and productivity of some crops increased due to adoption of new technology, farmer's more attention towards competition crops and positive contribution of these inputs like electricity, fertilizers, HYV area of Bajra, Rice, Wheat, Irrigation area and Tractors.

**Keywords:** Agriculture, agricultural crops, high yield varieties (HYV).

### Introduction

India is basically rural India which includes the cultivators, the village craft men and agricultural laborers<sup>1</sup>. Agriculture plays an important role where man learnt to practice as a means of living and way of life<sup>2</sup>. So that the significant role of agriculture in nation building all over the world cannot be overemphasized<sup>3</sup>. About 65 per cent of the population still relies on agriculture for employment and livelihood because this sector determines the growth and stability to Indian economy<sup>4</sup>. After the introduction of green revolution, liberalization, globalization there is a rapid transformation and has opened up new avenues for agriculture modernization<sup>5</sup>. For household food and income security farmers were cultivating varieties of crop on a piece of land and undertaking several enterprises on their farm portfolio<sup>6</sup>. As the population increases, demand for food and fiber also increases<sup>7</sup>. All these shows that Agriculture provides basic sustain to all living beings<sup>8</sup>. Only we can maintain the ecological balance when there is sustainable and balanced development in the agricultural and allied sector and need to increase per acre average production and productivity. But at the same time it is true that per capita productivity in agriculture is less. The common belief held at that time is deterioration in fertility of land<sup>9</sup>. We know that, Productivity is directly related with use of manures and fertilizers but India its consumption is very low. Small and marginal farmers are unable to purchase and use chemical fertilizers<sup>10</sup>. On the other hand, inadequate financial and other resources of the farmers may be a reason for low

productivity. To increase the production and productivity Govt. started different policies which affects the cropping patterns. After independence the policies of expansion of irrigation facilities, determination of agricultural prices and expansion of institutional credit have all contributed to changing cropping pattern<sup>11</sup>. These entire factors are responsible for overall development of agriculture.

**Objective of the study:** Our aim is to examine the trend scenario of selected inputs and outputs of Agricultural sector in Haryana.

### Methodology

**Area of the Study:** The present study is pertained to whole of the Haryana state. Agriculture is the main part of Haryana state. This State is known as a state of green revolution. During the adoption of advance technology, Haryana has registered high growth rates in agricultural sector. Haryana has adopted advance technology and due to this agricultural production has increased at a significant level. However from last two decades productivity growth has become stagnant. Impact of these modern seeds has not been seen in each crop. Modern seeds have increased output of Wheat, Rice and to an extent to some related crops but could not increase the output of all farm produce (crops). Pulses, oilseeds and coarse grains productivity have been still low.

**Period of the study:** The present study has been taken the time period from 1988-89 to 2007-08 due to restricted availability of the data for the given objective trend scenario of selected inputs and outputs of agricultural sector in Haryana.

**Source of the data:** The present study is based on secondary data which have been collected from different published issues of 'Statistical Abstracts of Haryana' for the selected period.

**Selection of the crops:** In the present study twelve major rabi and kharif crops viz. Wheat, Rice, Bajra, Gram, Moong, Massar, Groundnut, Rapeseed and Mustard, Sugarcane, Cotton American, Cotton Desi and Maize have been selected, because of these crops constituting approximately 96.17 per cent of the total cropped area of the state.

**Selection of the New Inputs:** In the present study six new inputs Electricity, Fertilizer, High Yielding Varieties, Area Irrigated, Pesticide and Tractor are selected, because these inputs effectively influence the production and productivity.

**Statistical Techniques:** compound growth rate have been used to estimate trend scenario of selected inputs and outputs of agricultural sector in Haryana.

## Results and Discussion

Section deals with growth performance of production and productivity of major agricultural crops in Haryana. The results related to compound growth rates of production and productivity of major crops and inputs uses, have been discussed with the help of suitable tables during the period from 1988-89 to 2007-08.

**Compound growth rates of Production of Major Agricultural Crops in Haryana:** The compound growth rates for production of major agricultural crops during the period (1988-89 to 2007-08) in Haryana have been presented in table-1.

**Table-1**  
**Compound Growth Rates of Production of Major Agricultural Crops in Haryana (1988-89 to 2007-08)**

Crops	C.G.R.	't' Value
Cotton American	1.42*	7.530
Bajra	3.28*	6.726
Cotton Desi	5.30*	6.235
Gram	-11.39*	4.636
Ground nut	-3.56*	3.251
Maize	-2.05*	14.409
Massar	-4.97*	12.939
Moong	2.71*	4.106
Rice	4.05*	30.037
Rape seed and Mustard	1.86*	9.164
Sugarcane	1.47*	19.270
Wheat	2.77*	34.808

\*Significant at 1 per cent level of significance

The furnished results related to the compound growth rates of production of major agricultural crops in Haryana are presented in table-1. It reveals that four crops i.e. Gram, Groundnut, Maize and Massar have shown negative trend with the rates of -11.39, -3.56, -2.05 and -4.97 per cent, respectively. All the remaining crops have shown positive growth rates. Maximum growth trend has found in case of Gram production which has negative value. Compound Growth Rates for the crops like Cotton Desi, Rice, Bajra, Wheat, Moong, Rape seed and Mustard and Cotton American have positive trend with the rates of 5.30, 4.05, 3.28, 2.77, 2.71, 1.86 and 1.42 per cent, respectively. It may be concluded on the basis of the findings of this table that the production of some crops has decreased due to more attention towards their competing crops, as farmers found more profit in the cultivation of their competing crops. The area of Gram has been replaced with the crop rapeseed and mustard due to little increase in irrigation facilities, as rapeseed and mustard has observed to be more economical and profitable in comparison to the Gram. Same situation has found with the Maize and Massar as they have also been replaced with the more profitable crops. Except for above, all crops have shown significant trend although they may have positive or negative growth trend.

**Compound Growth Rates of Productivity of Major Agricultural Crops in Haryana:** The compound growth rates for productivity of major agricultural crops during the period (1988-89 to 2007-08) in Haryana has been presented in table-2.

**Table-2**  
**Compound Growth Rates of Productivity of Major Agricultural Crops in Haryana (1988-89 to 2007-08)**

Crops	C.G.R.	't' Value
Cotton American	1.40*	7.957
Bajra	3.53*	8.546
Desi Cotton	3.20*	7.503
Gram	-1.11*	10.657
Groundnut	-0.04*	38.498
Maize	4.03*	14.360
Massar	2.07*	23.350
Moong	-3.00*	5.602
Rice	0.83*	21.735
Rape seed and Mustard	1.18*	9.033
Sugarcane	1.09*	42.604
Wheat	1.11*	54.005

\*Significant at 1 per cent level of significance

The furnished results related to the compound growth rates of productivity of major agricultural crops in Haryana are presented in table-2. It has been observed that three crops i.e. Gram, Groundnut and Moong have shown negative trend with the rates of -1.11, -0.04 and -3.00 per cent, respectively. Compound Growth Rates for all other crops i.e. Maize, Bajra, Cotton Desi, Massar, Cotton American, Rapeseed and Mustard, Wheat, Sugarcane and Rice have positive trend with the rates of

4.03, 3.53, 3.20, 2.07, 1.40, 1.18, 1.11, 1.09 and 0.83 per cent. Maximum growth trend has found in case of Maize productivity which has positive value. It may be concluded on the basis of the findings of this table that the productivity of some crops has increased due to the adoption of new inputs technology. Some crops have shown a decreasing growth rates because of partial adoption of new inputs technology and without proper resource management. It has found that HYVs and pesticides have not been invented for the crops like Gram, Groundnut and Moong which kept the low level of productivity at very low level.

**Compound Growth Rates of Inputs of New Agricultural Technology in Haryana:** The compound growth of inputs during the period (1988-89 to 2007-08) in Haryana have been presented in table-3.

**Table-3**

**Compound Growth Rates of Inputs of New Agricultural Technology in Haryana. (1988-89 to 2007-08)**

Inputs	C.G.R.	't' Value
Electricity	5.13*	21.544
Fertilisers	4.57*	65.718
HYV Area Bajra	2.13*	14.045
HYV Area Maize	-4.48*	24.452
HYV Area Rice	3.91*	26.018
HYV Area Wheat	1.65*	61.682
Irrigation Area	0.89*	147.329
Pesticides	-0.40*	42.173
Tractors	4.77*	50.084

\*Significant at 1 per cent level of significance

An examination of table-3 shows the progress with respect to use of new Agro-tech inputs. The inputs like electricity, tractors, fertilizers, HYV area under Rice, HYV area under Bajra, HYV area under Wheat and area irrigated have positive trends with the growth of annual 5.13, 4.77, 4.57, 3.91, 2.13, 1.65 and 0.89 per cent, respectively. While the other inputs like HYV area under Maize and pesticide have shown negative trend with the rates of -4.48 and -0.40 per cent. Maximum growth trend has found in case of Electricity which has positive value of 5.13 per cent. The inputs growth rates have increased because it has found capable itself to motivate farmers to raise the level of their use as contribution of these inputs has observed positive by the farmers in Haryana. Under the area of Maize crop has been decreasing due to this, growth rate of HYV area under Maize has declined.

## Conclusion

Finding of the study revealed that two common crops that is Gram and Groundnut showing the negative trends both in production and productivity and all the remaining crops except (production of Maize and Massar and productivity of Moong) have shown positive growth rates. These shows that production and productivity of some crops increased due to adoption of new technology, farmer's more attention towards competition

crops and positive contribution of these inputs like electricity, fertilizers, HYV area of Bajra, Rice, Wheat, Irrigation area and Tractor.

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