

Technological Changes for Agriculture in Haryana

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ABSTRACT

Haryana is the state which has vast amount of fertile land, in India. Industrial and agriculture sectors are the backbone of its economy. Around 70% of the population is occupied with agriculture, directly or indirectly. Haryana has accomplished an amazing development in agriculture sector, which not just has made it independent in food grains production but also has raised it to the second biggest supporter of India's central pool of food grains. Present study covers the agriculture performance of Haryana as far as the vital variables influencing its performance and as increment in the horticultural profitability requires huge investment in infrastructure i.e. irrigation, transportation, education, power supply, use of tractors etc. This paper highlights the use of different agricultural technologies in agriculture sector this study also discusses the six technological indicators which has played important role of technological changes of agriculture in Haryana.

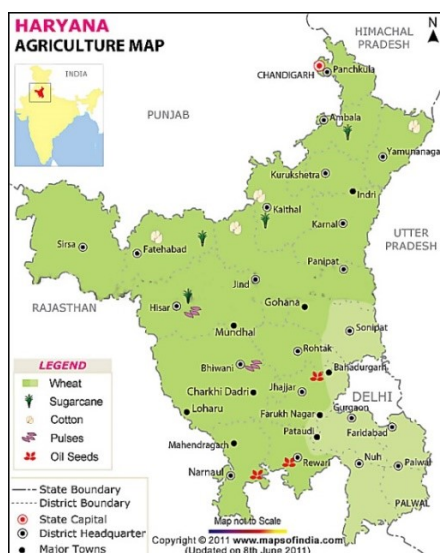
Keywords : Technology, Agriculture, Haryana, Irrigation, Yielding Variation

I. INTRODUCTION

Haryana is the second richest food grain production state of India. So it is called "food bowl" of the nation. During the last thirty-five years, food grain production of Haryana has expanded thrice in India. Average productivity of main crops is significantly more in Haryana when compared with average productivity of India. Farmers of Haryana have surrendered subsistence cultivating. They have adopted commercial farming with the goal of achieving more earning.

Subsequently, business crops are developed over vast part of horticultural land in Haryana. This has been conceivable simply because the state, since its commencement in 1966, along with speedy infrastructure development, could receive the greatest rewards of 'green revolution'. A straight forward view of introduction of high yielding varieties of seeds (H.Y.Vs.) and associate technologies, the yield of rice increased by eleven times and wheat by six times.¹

As the twentieth century draws to a close, the challenge, lining agricultural research worker, planners and policy makers is greater the ever. The demand for good continues to grow steadily due to fast population growth. Department of Agriculture in Bharat has long and rich chronicle marked by series of technological discovery, which today allow an exceeding large turn of citizenry to be fed from a relatively small area. Presently, India in general and the higher stimulus uses states such as Haryana, Punjab and western Uttar Pradesh in particular, are going through the third phase of agricultural development. This phase is input efficiency phase where in the Farmer move toward increased technical foul efficiency by using available purchased inputs more



Source: mapsofindia.com

¹ Sharma, V.K. and Haque, T (1996), "Perspective of Technological Change in Indian Agriculture – A case of HYV Technology", Agriculture situation in India, Vol.LIII, No.9.

efficiency and adopt praxis that contribute to the sustainability of the resource base.²

The impact of the vast multiplicity of interrelated physical and socioeconomic and technological factors on Agriculture is not withstanding; remember that, all of them are not equally significant in influencing the area variations and temporal developments of agricultural phenomenon in Haryana. Numerical adequacy and operational efficiency of basic input in Agriculture are the pre necessary for accelerating the stride of agricultural development and ensuring its equitable spread head effects of institutional, technological and biochemical variables have significantly influence the structural and production attributes of agriculture in Haryana strengthening the irrigation base in the dry climate has played a primary quill character. In the absence of these inputs, agricultural land imagination potential drop remain underutilized or unutilized, without making an adequate availability of these readiness, we cannot imagine the development of agriculture in the development of agriculture in the developing area.³

Haryana agriculture has made rapid footstep since the mid-sixties in the wake of new technology. However, the agricultural public presentation differs widely across area in Haryana due to considerable heterogeneity in agro-climate, imagination natural endowment, and dissemination of technology and the like. In fact, Haryana just like other Indian states having advanced agriculture with marked diversities in agro-climate weather, resource endowment and population tightness is likely to be characterized by uneven economic and agricultural development among various districts. The inter district or regional difference in agricultural development arising out of these varied conditions tend to get further accentuated because of varying levels of investiture in rural infrastructure and adoption of improved technology. Thus, the present study covers the agricultural performance of different regions of Haryana

during 1966 to 2005 in terminus of growth, variance and the important broker affecting their performance.⁴

Technological Changes in Haryana

Technological variety in the USDA sector has occurred mainly through the carry-over of instrument, proficiency s and yield. This has resulted in the creation of new environment of production and wasting disease in the agriculture sector. In the outgrowth the technological practice session has slowly changed; either new practice has been introduced or the traditional ones have been replaced by improved ones. Similarly, the economic consumption floor of the people also have changed with the coming of new Cartesian product. These changes have their shock on socio-economic conditions and its arrangement in the rural areas. The nature of technological change, in this context, is understood from the qualitative expression of the tools, proficiency and Cartesian product diffused: whether it is an improved or new tool, technique or product diffused. The qualitative changes brought in by the diffusion of new tools, proficiency and products provide a measure of their technological and economic efficiency. Similarly the magnitude of their diffusion determines the intensity of their impact in various sphere of production and consumption.⁵

Also, their impact on socio-economic conditions is determined by their relationship with the socio-economic and organizational factors, mainly the resource endowments. After the twentieth century the challenge facing agricultural researcher, planners and policy-makers are greater than ever. The demand for food continues to grow steadily due to fast universe increment. Agriculture in India has a long and rich people account marked by a serial of technological breakthroughs which today allow an exceeding large number of people to be fed from a relatively small domain. Presently, India in general and the high

² Ibid.

³ Jha, Brijesh Kumar (Oct.1994): "Growth and Instability in agriculture associated with New Agricultural Technology". Agricultural Situation in India, Vol. XLIX. No. 7.

⁴ Pandey, U.K., Suhag, K.S. Manocha, V.P. and Chiikara, O.P. "Evaluation of Agricultural Performance across Regions in Haryana", Indian Journal of Agricultural Economics, Vol.52, No.3 July-Sept. 1977.

⁵ Singh, I.J., Rai, K.N. and Karwasra, J.C. "Regional Variations in Agricultural Performance in India", Indian journal of Agricultural Economics, Vol. 52, No. 3 July- Sept. 1997.

comment user public such as Haryana, Punjab and Western Uttar-Pradesh in particular, are going through the third form of agricultural exploitation. This phase is input efficiency phase wherein the Fannie Merritt Farmer move toward increased technical efficiency by using available purchased inputs more efficiently and adopt practices that contribute to the sustainability of the resource base.⁶

However, the agricultural public presentation differs widely across regions in Haryana due to considerable heterogeneousness in agro-climate, imagination endowments, diffusion of applied science and the like. In fact, Haryana just like other Indian states having advanced agriculture with marked diverseness in agro-climatic conditions, resource endowment, and population density is likely to be characterized by uneven economic and agricultural maturation among various dominions. The inter-district or regional differences in agricultural development arising out of these varied conditions tend to get further accentuated because of varying levels of investment in rural infrastructure and borrowing of improved technology. Thus, the present written report concealment the agricultural execution of District Mahendergarh in Haryana in terms of growth, variance and the important factors affecting their performance

This study has considered the three important indicators of technological changes in Haryana. These indicators have been explained as below: -

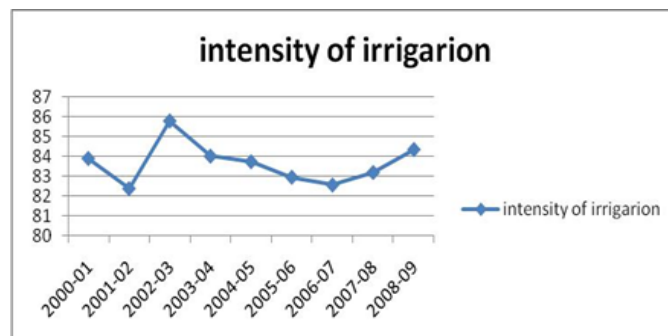
Indicators of Technological Change in Agriculture

- Intensity of irrigation
- Density of tractors per thousand hectares of cropped area
- Intensity of cropping

Intensity of irrigation

Irrigation is artificial application of water to overcome the want in rainfall for growing of crops especially in the areas where the rainfall is meager, concentrated and erratic. Irrigation is the most important factor responsible for the adoption of high yielding diversity and other engineering science by the farmers.

Graph-1. Intensity of Irrigation



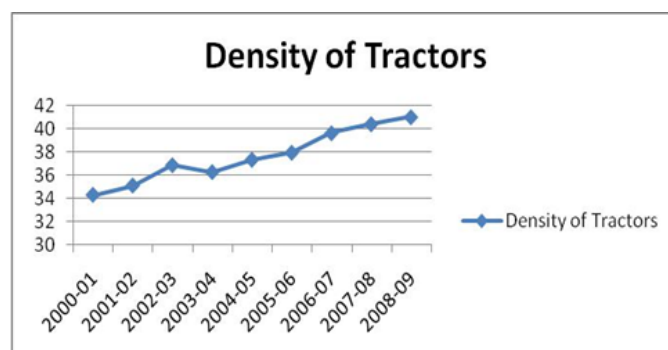
Source: Statistical Abstract of Haryana 2010-2011

Agriculture is the main source of income in state like Haryana. People of the state have more interest in agriculture sector. People have more land in Haryana which provides platform and opportunity where people can use technology for cultivating. The above data reveals that Haryana has been almost same (constant) during the study period. Intensity of irrigation as measurement means net irrigated area as a percentage of net area sown

Density of Tractors per Thousand Hectares of Cropped Area

Tractors are an important input in Agriculture Department in Haryana. Prior to the institution of new technology, most of the Fannie Merritt Farmer were using indigenous farm implement; whereas a small number of them were using tractor, for the cultivation of land.

Graph-2. Density of Tractors



Source: Statistical Abstract of Haryana 2010-2011

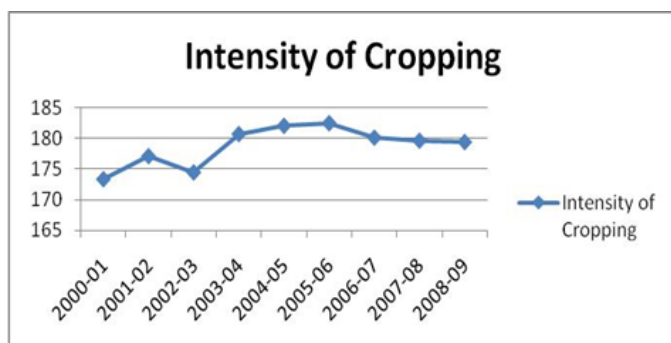
⁶ Ibid.

This graph reveals that number of tractor has increased from 34.27 in 2000-01 to 41.02 in 2008-09 per thousand hectare of total cropped area respectively. This change shows that a large number of farmers are aware about technological changes and they are implementing at ground level. Tractors being the main source of power on the farms, affects the use of other mechanical devices. The density of tractors in Haryana are continuously increasing

Intensity of Cropping: -

Cropping Chroma display the intensity of crop grown on a particular domain during one year presented in terms of percentage. More or less, it depends on the managing efficiency of the farmers, availability of irrigation readiness, eccentric of seeds used and the use of machine etc. The increased use of irrigation facilities and the phylogenesis of high yielding shortstop duration varieties of wheat have made it easier to take two or more harvest per year from the same field⁷.

Graph-3. Intensity of Cropping



Source: Statistical Abstract of Haryana 2010-2011

Graph presents the actual fact for intensity of cropping during first seven years of the study period and it has been noted that it has increased but from last two years it is declining.

II. CONCLUSION

Haryana is the backbone of the country in terms of agriculture and it also plays a major role to fulfill the crop requirement to the entire country. Haryana is technologically advanced for cropping and all the credit goes to its Government and people for their effort. Technological changes have brought a new dimension of development with the help of its indicators including intensity of irrigation, density of tractors per thousand hectares of cropped area, use of chemical fertilizers per hundred hectares of cropped area in kgs, use of pesticides per hundred hectares of cropped area in kgs., intensity of cropping, area under HYVs, as present to total cropped area.

III. REFERENCES

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⁷ Madhu, Dr karan," A Study on Indicator's Associated with Agriculture Growth in Haryana" International Conference on Recent Innovations in Sciences, Management, Education and Technology, 27th August, 2016