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LEVELS OF AGRICULTURAL PRODUCTIVITY IN HARYANA STATE 2012-2015

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Abstract:

Today, India faces two most vital problems which are directly related to agriculture. The first one is to meet the rising demand for food and other agricultural products, and the second is the widespread poverty in rural areas. The good performance in agricultural sector can diminish levels of rural poverty and meet increasing demand of agricultural products (Ahluwalia, 1978). Agricultural productivity is a measure of the efficiency with which inputs are used in agriculture to produce an output. When a given combination of inputs produces a maximum output, the productivity is said to be at its maximum. The measurement of agricultural productivity enables a comparison of relative performance of farmers' farms, the types of farming and geographical regions. The areas which experiences high land productivity may always have been leading agricultural regions.

In the present study the measure adopted by the economists has been employed to compute the level of agricultural productivity (Bhalla 1989). The total output of selected crops is multiply by respective farm harvest prices. The figure of the output, us computed represented only the part of the total cropped area covered by the selected crops. This figure is multiplied by relevant multiplier (in ratio with area not covered by selected crops) and added to the original figure to get the total output in money terms for total cropped area. The total output is then divided by Net Sown Area (NSA) to obtain the level of land productivity in money terms (Rs/ha). To compute the land productivity for present study, the farm harvest price for 20015-16 is taken.

Key Words: Agriculture, Development, Productivity & Prize and Output

The comparison of productivity goes on to the heart of economic performance and can provide the guidance for planning and development decisions (Kravis, 1976). There are various scholars who have contributed different ideas, methods and techniques to measure the agricultural productivity, like Buck (1937) evaluated a method where by the output is expressed in term of 'grain equivalent'. He has taken all food grains to the equivalent in food value and basing his unit on one kg of whatever grain, was predominant in the locality. A slight modification over the Buck method was introduced by E.D. Varies. He expressed the output in term of 'milled rice equivalent' per head of population. Further modification of the pro-procedure was introduced by Clark and Hasvell (1976), who expressed the agricultural output in term of kg wheat equivalent per person. Kendall (1939) devised a system of ranking co-efficient to compute agricultural efficiency. The method gives ranks to the unit of area on the basis of the per unit yield of crops. This method seems to have a vital and inherent weakness, which makes someone what intensive as a measure of agricultural efficiency. This weakness arises from the neglect of the regional strength of crops for which area yield are taken to calculate the ranking co-efficient. Sapre and Despanday (1964) modified Kendall's ranking coefficient method by taking a weighted average of ranks instead of the simple average. The weightage for ranking of various crops is proportional to the percentage of cropland under respective crops. Bhalla (1967) introduced a method of a weighted average of yield efficiency of all crops in a component regional unit, where the all weights are proportionate to the share of cropland devoted to every crop. Thus for this, two indices (yield index of crop and efficiency index) are calculated. Stamp (1958) suggested a technique of caring capacity of land in term of population. Enyedi (1964) devised a technique based on location quotient for computing on index of productivity. Hussion (1976) used a technique for establishing agricultural units in proportion to whole the region. Jasbir Singh (1985) in the study of Haryana followed the farm business income (FBI) technique. Another technique was used by Jasbir Singh (1990) to option the weighted composite level of agricultural performance. In the present study the measure adopted by the economists has been employed to compute the level of agricultural productivity (Bhalla 1989). The total output of selected crops is multiply by respective farm harvest prices. The figure of the output, us computed represented only the part of the total cropped area covered by the selected crops. This figure is multiplied by relevant multiplier (in ratio with area not covered by selected crops) and added to the original figure to get the total output in money terms for total cropped area. The total output is then divided by Net Sown Area (NSA) to obtain the level of land productivity in money terms (Rs/ha). To compute the land productivity for present study, the farm harvest price for 2009-10 is taken.

Study Area:

Haryana came into existence on 1st November 1966 due to partition of Punjab under the Punjab Reorganization Act. In the beginning, there were seven districts and one division in Haryana. But at present it is divided into twenty one districts and four divisions. The present four divisions of the state are Ambala, Rohtak, Gurgaon and Hisar. Extending over an area of about 44,212 sq. km. from $27^0$39' N to $30^0$55'5" N latitudes and $74^0$27'8" E to $77^0$36'5"E longitudes. Figure 1.1 shows the map of the study area.

The Relief:

The agriculture in any area is primarily determined by the relief characteristics (altitude, roughness, slope, drainage texture) of that area. The greater part of Haryana lies in Indo-Gangetic alluvial plain and is flat lands below 300 m. Great Indian alluvial plain provide more opportunity for agricultural development. Generally slope is from the North West to the southwest and the south. The only exception in the southern districts of Bhiwani, Mahendergarh, Rewari, Gurgaon and Jhajjar, where the slope is towards the north. In the eastern part of Gurgaon district, the land generally slopes towards the south and to the southeast.

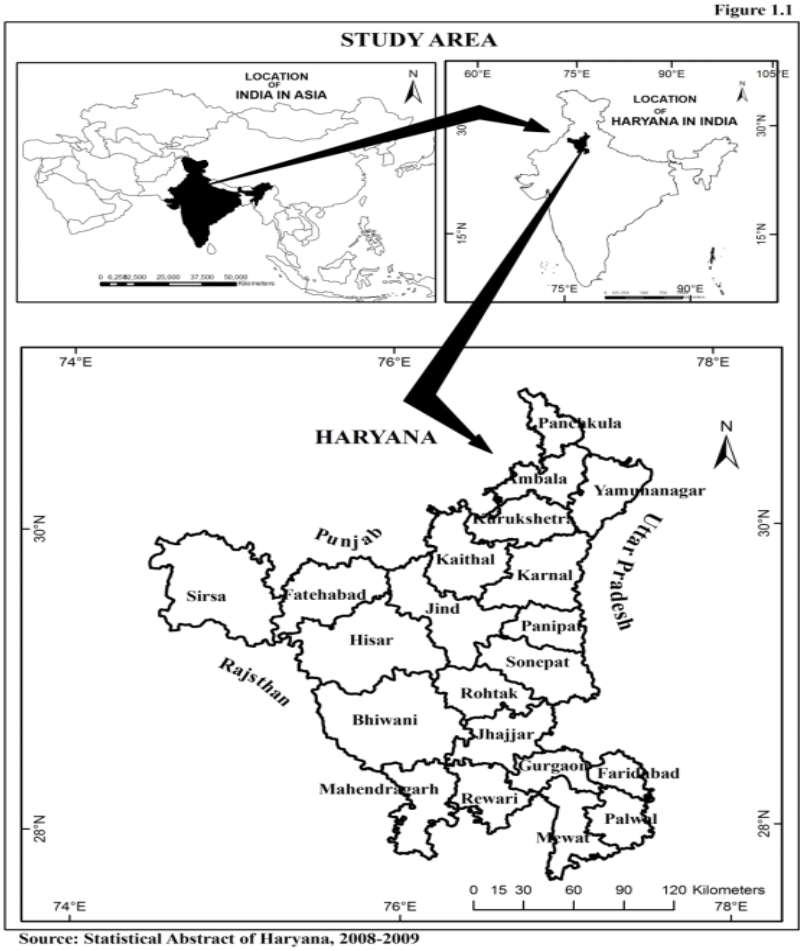
Drainage:

The Yamuna is the only perennial river of Haryana, which forms the eastern boundary of the state. On the north, the state is bounded by the Ghaggar which is a seasonal river. A few minor streams drain this water shed on either side among which the westward flowing Markanda, Saraswati, and Chautang are most important. A number of small rainy season streams bring over flows from Rajasthan into the Gurgaon, Rewari, Mahendergarh, Jhajjar and Rohtak districts, among which the Sahibi, the Kasawat, The Indoris, and the Landoha are the important rivers.

Climate:

The elements of climate, such as, precipitation, temperature, sunshine, etc., are variable both spatially as well as seasonally, of the physical environment. Haryana is locked in the interior of continent and is mostly warm and semi-arid. It is located between the Himalayas in the north and Thar Desert in the west. Most of rainfall (over 75 percent) occurred during rainy monsoon season from July to September. In winter season, some amount of rainfall is received from the western disturbance. Thus, Haryana has a subtropical continental monsoon type climate. Temperature conditions express the amount of energy in the environment available for the conservation of mineral and moisture into plant tissue. There are not much spatial variations in the normal annual temperature of the state. The northern parts of the state, i.e. Ambala, Panchkula and Yamuna Nagar districts and eastern parts of Kurukshetra and Karnal districts have normal annual temperature below 23.5^0C. It increases slowly as moving towards west. In the western parts of Haryana (Sirsa, Hisar, Fatehabad, Bhiwani), it is above 25^0C while in the southern eastern parts of Haryana it is between 24^0C to 24.5^0C. However, the temperature shows a significant seasonal rhythm. January is the coldest month and even in this month the mean daily temperature rarely falls below 6^0C.

Figure 1.1



Source: Statistical Abstract of Haryana, 2008-2009

Objectives of the Study:

The present study proposes to realize the following objectives:

- ✓ To study the spatial variation in the level of agricultural development in term of (a) Agricultural land productivity

Data Base:

The present study based on secondary data. The district wise secondary data have been collected from Statistical abstract of Haryana, Economics and statistical Organization, Chandigarh. The collected data is tabulated and processed with the help of simple statistical techniques. The processed data is cartographically represented by maps.

Period of Study:

The study is carried out with references to one trienniums. The one triennium chosen for the present study is 2007-10, the latest period for which the secondary data is available.

Methodology and Organization of Study:

In this study examined the spatial variation in the level of agricultural productivity; major crops have been selected for eight crops. These crops are rice, bajra, maize, wheat, gram, rapeseed and mustered, cotton and sugarcane. All these crops occupied 88.06 percent of total cropped area in the state in 2012-15. The measures adopted by economists have been employed to compute the level of agricultural productivity (Bhalla 1989). The total output of selected crops has been multiply by respective farm harvest prices. The figure of the output, thus computed represented only the part of the total cropped area covered by the selected crops. This figure is then multiplied by relevant multiplier (in ratio with area not covered by selected crops) and added to the original figure to get the total output in money terms for total cropped area. The total output was then divided by Net Sown Area (NSA) to obtain the level of land productivity in money terms (Rs/ha). To compute the land productivity for present study, the farm harvest price of current 2014-15 years.

Result and Conclusion:

Spatial Pattern of Agricultural Productivity:

Table and Fig. show that the agricultural scenario in Haryana changed drastically till 2012-2015. Gurugram district has lowest agricultural productivity during this period, Rohtak, Palwal, Mahendergarh, Rewari, Jhajjar, Mewat are other districts having land productivity below Rs 95000 ha. Panchkula, Sonipat, Faridabad and Bhiwani districts have moderate agricultural productivity (Rs 95000 to Rs 115000 per ha). The east central region lying between Ambala, Kaithal, and Karnal has recorded high land productivity (Rs 115,000 to Rs 125,000 per ha) in 2012-2015. On the other hand northwestern part of state has improved its per ha land productivity significantly during last two decades. Cotton crops and its high farm harvest price plying most dominating role for this area productivity. Sirsa, Fatehabad, Hisar, Jind, Kurukshetra, Panipat and Yamunanagar has recorded very high land productivity (above 125,000 Rs/ha) in 2012-2015.

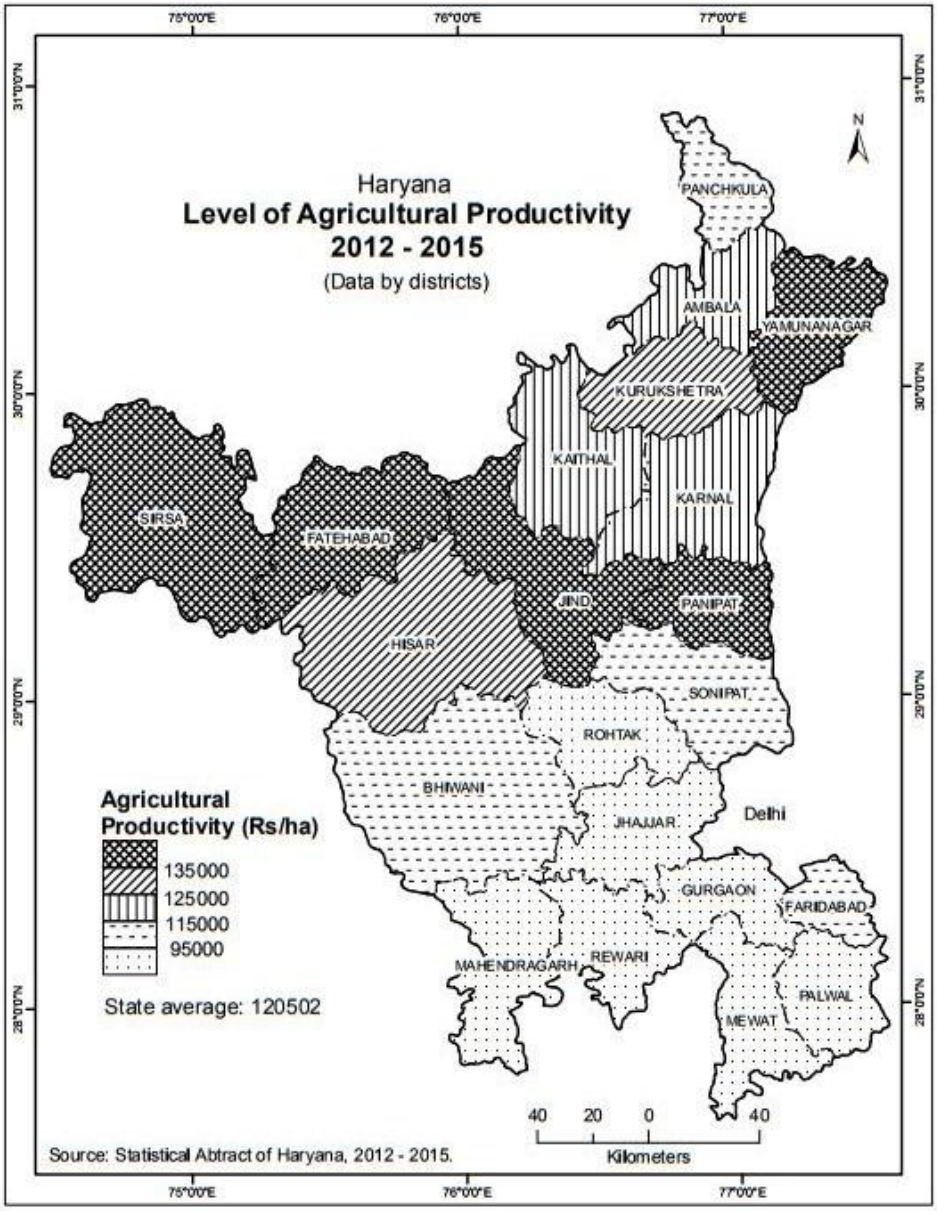
It is evident that level of per ha land productivity in north-western parts of the state (Hisar Rs 133394, Fatehabad Rs 174456 and Sirsa Rs 179704) is the ahead of that agricultural productivity in eastern part (Karnal Rs 123096, Panipat Rs 146251 and Kaithal Rs 123521). It is due to higher farm Harvest Price of cotton which occupies 15-20 percent to total cropped area in north-western districts.In comparison to rice growing area, cotton belt stands with high land productivity.

Haryana Level of Agricultural Productivity 2012-2015:

S.No	Districts	Agricultural Productivity (Rs/ha)	Category	Agricultural Productivity (Rs/ha)
1.	Ambala	123458	Rohtak	Below 95000
2.	Panchkula	97407	Jhajjar	
3.	Yamunanagar	140115	Palwal	
4.	Kurukshetra	125914	Gurgram	
5.	Kaithal	123521	Mewat	
6.	Karnal	123096	Rewari	
7.	Panipat	146251	Mahendergarh	
8.	Sonipat	101455	Panchkula	95000-115000
9.	Rohtak	85738	Sonipat	
10.	Jhajjar	83319	Faridabad	
11.	Faridabad	103746	Bhiwani	
12.	Palwal	92519	Ambala	115000-125000
13.	Gurgram	62399	Kaithal	
14.	Mewat	66479	Karnal	
15.	Rewari	72381	Kurukshetra	125000-135000
16.	Mahendergarh	88389	Hisar	
17.	Bhiwani	105824	Yamunanager	Above-135000

18.	Jind	142514	Panipat	
19.	Hisar	133394	Jind	
20	Fatehabad	174456	Fatehsbad	
21.	Sirsa	179704	Sirsa	
	Haryana	120502	Haryana	120502

Source: Statistical Abstracts Haryana, Department of Economics and Statistical analysis Haryana, 20012-2015.



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