

Spatio Temporal Study of Agricultural Productivity in Pune District

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Abstract

Agricultural productivity is the interplay of a multitude of many factors, such as environmental, socio-economic and technological factors. The agricultural productivity is closely related to the per hectare yields, whereas the agricultural efficiency is much more than agricultural productivity and conveys a more comprehensive meaning. Agricultural productivity is the actual performance of the land in terms of per hectare yield, whereas agricultural efficiency is a ratio between the achievement in terms of agricultural production and the actual potential of the land productivity is a physical rather than a value concept and describes the changing relation between output and one of the major inputs like land, labor, and capital.

KEYWORDS:- Agricultural, technological, productivity and potential.

INTRODUCTION:

The measurements of production and inputs required for the yield and output is known as agricultural productivity. The study of the spatial variations in agricultural productivity is useful for identifying, the different areas of agriculture. In developing countries like India, land is limited for making expansion into cultivated area. Further, increasing pressure of population on land compels the scientists to think for the improvement of agricultural productivity. Thus, to solve the food problem a suitable way is, to increase the production per unit area and per unit of time, Hence, a measurement of the existing agricultural productivity becomes necessary before any remedial steps can be taken. Agricultural productivity is the interplay of a multitude of many factors, such as environmental, socio-economic and technological factors. The agricultural productivity is closely related to the per hectare yields, whereas the agricultural efficiency is much more than agricultural productivity and conveys a more comprehensive meaning. Agricultural productivity is the actual performance of the land in terms of per hectare yield, whereas agricultural efficiency is a ratio between the achievement in terms of agricultural production and the actual potential of the land productivity is a physical rather than a value concept and describes the changing relation between output and one of the major inputs like land, labor, and capital.

PRODUCTIVITY OF PRINCIPAL CROPS:

Wheat, Jawar, Bajra, Maiz, Tur, Gram, Sugarcane, Cotton and Groundnuts are the important crops of the Pune District. Sugarcane and Jawar is accounting for more than 50 percent of the total cultivated area of the region. Jawar can be grown both a Rabi and Kharif crops in Pune district. Wheat is more common in dry areas. Sugarcane is the

principal crop of the region. It is a late arrival in the field of cash crops. Its cultivation is confined to the areas receiving adequate and timely irrigation. The crop productivity changes have occurred in response to many technological developments during the last few decades. The adoption of seeds, fertilizers and irrigation has resulted into increase of farm production and diversifying the production pattern. The soil conservation has been an addition, for increasing the productivity. Thus, all these factors interact the changes in agricultural production.

Table No:-1
Yield per hectare of important crops in Pune District (2011)

Sr.No	Crops	Crops Yield per hectare in Kg				Production in '00' tones			
		1980-1981	1990-1991	2000-2001	2010-2011	1980-1981	1990-1991	2000-2001	2010-2011
1.	Jawar	349	443	449	452	2896	3806	2868	3214
2.	Bajra	282	383	415	423	85	113	221	226
3.	Wheat	942	1035	1100	1178	490	476	560	660
4.	Tur	199	243	387	415	73	96	125	135
5.	Gram	355	497	564	678	113	169	173	183
6.	Groundnut	915	1688	932	1423	162	854	204	215

Source : Socio-economic Abstract of Pune district (1980-2011)

LEVELS OF JAWAR PRODUCTIVITY:

There are wide variations in the yield of Jawar in the region under study. The average productivity of the region as a whole is 449 Kg per hectare in 2000-01. The tahsil wise yield ranges from 225.4 Kg. per hectare to 812.8 Kg per hectare. In the region, the three tahsils have recorded a yield level of greater than 725 Kg. per hectare. The very high productivity is observed in Mangalvedha tahsil with an average productivity of 812.8 Kg per hectare. The improved dry farming techniques assured supply of water, use of new strains of seeds, proper also of fertilizers, and modern methods in Jawar husbandry, all of them are responsible for higher production. The moderate level of productivity is noted in South Pune. At the other extreme, remaining all tahsils has low productivity with output per hectare of less than 425 Kg per hectare.

LEVELS OF BAJRA PRODUCTIVITY:

There are wide variations in the average level of productivity of bajra. The average productivity of bajra, in the region is 415 Kg per hectare during 2000-01 periods. In the region understudy the four tahsils have productivity above district average and seven tahsils have below average. The highest yields of 415 Kg per hectare are recorded in 2001. And production is recorded of 22100 metric tones region as a whole.

LEVELS OF WHEAT PRODUCTIVITY:

The distribution pattern of wheat productivity is given in Fig 7.2. The average productivity of wheat in the region is 1100 Kg. per hectare. There are only four tahsils

which have a yield above 1500 Kg per hectare.

LEVELS OF TUR PRODUCTIVITY:

Tur is a more important food grain of the region. The average productivity of the region is 387 Kg per hectare. The highest yield and production in 2000-01 recorded 387 Kg per hectare and total production of 12500 metric tones, where as the yield per hectare and production was relatively low in 1980-81.

LEVELS OF GRAM PRODUCTIVITY:

Gram is known as (HARBARA) in rural areas. The average productivity of region is 564 Kg per hectare. The yield of gram in 1980-81 was 355 Kg per hectare and total production was 11300 metric tones. The highest yield and production have been recorded during 2000-01.

LEVEL OF GROUNDNUT PRODUCTIVITY:

The average productivity of region is 932 Kg per hectare during 2000-01. It recorded high productivity with an average productivity of 653 Kg per hectare Elsewhere, the levels of production are moderate due to agronomic limitation and the competition with grain crop.

Methods:-

Identification and delineation of various areas of agricultural productivity have been attempted by many scholars by using many techniques. In the present investigation, three methods such as Kendal's, ranking co-efficient methods, yield index method and Bhatia's method have been used for the measurement of agricultural productivity. The weakness of Kendal's ranking co-efficient method namely; neglect of the aerial strength of crops was removed by Sapre and Deshpande, (1964). After that, further, modification has been attempt by Bhatia (1967)

Measurement of Productivity by Kendal's Ranking Co-efficient method:

Here, the Kendal's ranking co-efficient method (1968) is used while applying this technique; seven major crops grown in all the Tahsils of the district are selected. The crops have ranked in order to their yield per unit area. Then the arithmetic mean of these ranks is obtained which Kendal's called as ranking co-efficient and the same is represented cartographically. Lower the co-efficient value, higher is the productivity level of agriculture.

Conclusion:-

There is a close relationship between agricultural productions on the one hand, and availability of enough food grain on the other. In subsistence type of agriculture, a small portion of agriculture production is also sent to market for earning cash.

References:-

1. Bansil, P.C. (1975): "Agricultural problems of India" vikas publishing House Private Ltd. PP. 61-79.
2. Bhatia, S. S. (1967): Spatial Variation, Changes and trends in agricultural

- efficiency in U.P. 1953-1963. India journal of Agricultural economics. Vol 22. No. 1, PP. 66-80.
3. Dayal. E. (1984): "Agricultural productivity in India – A Spatial Analysis". PP. 27-38.
 4. Gopal Krishna, M. D. and Rao, T. R. (1964): "Regional Variations in Agricultural productivity in Andhara Pradesh," Indian Journal of Agricultural Economics, Vol. 19, NO. 1. PP. 227-236.
 5. Hussian, M. (1976): "A New approach to the Agricultural productivity Regions of the Sutlej-Ganga plains of india" Geographical Review of India, Vol. 36, PP. 230-236.
 6. Kendal, M.G.W. (1967): The geographical distribution of crop productivity in England, Spatial Analysis: A Reader in Statistical Geography. Ed. Barry and Marbel, PP. 387-406.
 7. Momaria, C.B. (1969): Agricultural Problems of India. Kitab Mahal. Allahaband, P. 718.
 8. Noor Mohammad and Singh, R. (1981): "Measurement of crop productivity" Perspectives in Agricultural Geography, Vol. 4, Concept publishing company, P. 159.
 9. Radhakrishna, D. (1964): "A study of Regional productivities of agricultural inputs," Indian Journal of Agricultural Economics, Vol. 19, No. 1. PP. 237-242.
 10. Spare, S.G. and Despande, V.D. (1964): Inter-district Variations in agricultural efficiency in Maharashtra State. Indian Journal of Agricultural Economics, Vol. 19, No. 1., PP. 242-252.
 11. Vaid, V. (1985): Agricultural Productivity of Maharashtra: A Spatio-Temporal Analysis" Dissertation for M. Phil, (Unpublished Department of Geography, University of Poona, Poona. PP. 59-81.