Agricultural Productivity of Tobaco in Kolhapur District: Maharashtra

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Abstract:

Now a day's explosively increasing population is one of the foremost challenge facing the world in general and underdeveloped and developed countries in particular. This resulted in food shortage worldwide. Inadequate production of food grain is one of the most important reasons behind food scarcity. Thus there is need to increase the agricultural production especially food grains. The term productivity can be considered more physical rather than a value concept. Productivity is defined as output per unit area of input or per unit area respectively. It is a measure of efficiency by which the inputs are utilized in terms of production. According to Bhatia (1967) "An agricultural efficiency is aggregate performance of various crops in regards to their output per acre." The agricultural productivity is considered as very complex and multidimensional concept. Kendall (1939) has suggested a method of determining agricultural efficiency which is based on output per unit area and put forth a system of ranking co-efficient. He considered the hectare yield of ten leading crops for 48 administrative countries and energy co-efficient on starch equivalent technique for measuring the productivity.

Key Words: *Land Productivity, Capital productivity, Efficiency.*

Introduction:

There are several ways to enhance the production such as advanced technologies, high yielding varieties of crops, multi crop farming etc. But these techniques further have constraint of physical and climatic conditions, socio-economic constraint, traditional methods of farming etc. due to these constraints regional imbalance in food crop production is seen all over the world. Therefore better planning developmental activities in agricultural practices are required which will help to increase crop productivity in real sense.

So it implies the relationship between input and output. Output can be the actual production whereas input includes land, labour and capital. Jasbir Singh (1979) has considered productivity as "The quantity of returns from arable land." Rao and jasbir Singh (1981) defined agricultural productivity as "The degree at which the economic, cultural, technical and organizational variables are able to exploit the abiotic resources of the area for agricultural production."

However, number of scholars has invented several techniques to compute efficiency in the level of agricultural productivity. In 1964 Sapre and Deshpande modified the ranking co-efficient approach by giving weightage to area under different crops. They had used weighted average ranks instead of simple average ranks. Prof. Stamp (1955) suggested a technique of carrying capacity of land in terms of population. He considered the standard nutrition unit and the caloric value of same leading food crops. Standard nutrition unit means the extent of food and land which is required to support one average human being and to produce that much amount of food respectively. This method helps to convert the food production into calories in order to measure the optimum carrying capacity of land with respect to population.

Methodology

In present study agricultural productivity is computed for tobacco crop in Kolhapur district. Kolhapur district has diversity in local relief, climate, soil and irrigation facilities. The region exhibits both hill ranges towards west and plateau towards eastern side with local

undulating sloping. It has affected the distribution of rainfall and temperature. Among several methods of calculating agricultural productivity Kendal's method with some modifications was chosen to compute crop productivity of Kolhapur district. The most popular indicator of land productivity is crop yield. The spatial distribution of productivity for every crop was measured, mapped and interpreted for Kolhapur district. The modified formula for crop productivity is as below:

$$\text{Productivity Index} = \frac{CR}{N}$$

Where,

CR = sum of rank for a crop.

N = number of years.

Productivity of Tobacco:

There are two commercially cultivated species of genus *Nicotiana viz. N.tabacum* and *N.rustica.* In India Andhra Pradesh, Gujarat, Tamil Nadu, Karnataka, Bihar, West Bengal, and Uttar Pradesh are important in tobacco farming. The species *N. tabacum* is spread in almost all the states, whereas the cultivation of *N.rustica* is mostly found to the northern and north eastern states, as the temperature over there are considerably lower during the season. Including all varieties, India produces a wide range of commercial types of tobacco.

Geographical Condition:

The ideal climatic condition for tobacco is 50cm to 100cm annual rainfall and $15\,^{o}$ C to $20\,^{o}$ C temperature during growth period. Tobacco cannot survive in the regions having more than 100cm rainfall. It requires bright sunshine & dry weather after harvesting to dry the leaves, but not less than 8% moisture content. Also too dry weather may be harmful as leaves break into small pieces. Different types of soil are required as per the variety of tobacco. For example, Bidi tobacco is grown as a rain fed crop, so it needs mostly alluvial soils, black clayey or loamy soils. Cigar and cheroot tobaccos can be cultivated on grey to red soils varying from light gravelly to sandy loams. The chewing tobacco is taken all over the country even under varying conditions of soils. For quality soil should be mixed with sand because soil should be well drained.

Kolhapur District: Productivity of Tobacco

Sr.no.	Tahsil	Productivity
1	Hatkangale	2.83
2	Shirol	2.46
3	Panhala	2.00
4	Shauwadi	0.00
5	Radhanagri	0.00
6	Bavada	0.00
7	Karveer	0.00
8	Kagal	1.92
9	Gadhingalaj	1.63
10	Bhudargad	0.00
11	Ajra	0.00
12	Chandgad	0.00

Source: Compiled by Researcher

Above table has been compiled from the statistical data of tobacco from 1981 to 2011 by the Agriculture Department of Maharashtra. According to the table in very few tahsils of Kolhapur district the tobacco is grown.

Very few tahsils of Kolhapur district grows the tobacco. In which Gadhinglaj showed the highest whereas Hatkanangale tahsil has the lowest tobacco productivity. The high productivity found in Kagal (1.92), and Panhala (2.00) tahsils. As Shirol not having that much suitable conditions for tobacco, it has low (2.43) productivity.
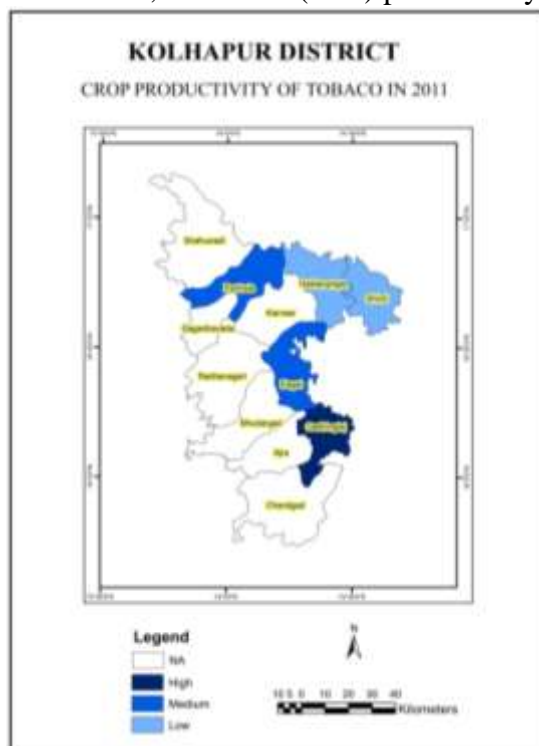
Conclusion:

The western border strip of Chandgad, Ajra, Radhanagari, Gagan Bavada, and Shahuwadi tahsils of Kolhapur district belong to very high rainfall zone with lateritic soil (VRL zone) whereas eastern strip of Kolhapur comprises grayish black soil. Kolhapur experiences three types of Ecosystems i.e. rain fed lowland, rain fed upland and irrigated ecosystem. The soil characteristics in the study area are different considerably from place to place being mostly controlled by local topography, underlying rocks and the type of vegetation. These soils are suitable for mostly rice, ragi and garden crops cultivation. Tobacco crop grows in very few tahsils of Kolhapur district. From those Gadhinglaj showed the very high productivity, also high productivity found in Kagal (1.92), and Panhala (2.00) tahsils. Shirol, has low (2.43) porodutivity. Whereas Hatkanangale tahsil has the lowest tobacco productivity, Because of it has not having much suitable conditions for tobacco.

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