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The Study of Sugarcane Productivity In Solapur District. (2001-2010)

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Abstract:

Agriculture is backbone of Indian economy. sugarcane is one of the most important commercial crop produced in India. But the productivity of sugarcane is low as compared to USA and Chaina. Productivity is a function of number of factors including physical and non-physical. For increasing sugarcane productivity, it need to demarcate the verius region of sugarcane productivity. Therefore attempt is made here to study the sugarcane production of Solapur Districts. For the purpose of the study, Only secondary information was collected from different sources and the measurment of Sugarcane Productivity Enyedi's Method is used.

The study reveals that there are two tahsils Malshiras and Pandharpur have very high sugarcane productivity (> 2.0) than any other tahsils. It is also found that the four tehsils have recorded positive change in investigation period in productivity level. Tahsil Akkalkot shifted from low to high category and tahsils Sangola, N.Solapur and Barshi are shifted from low to moderate category. The empirical results suggest that, there is an urgent need to use of modern irrigation thechnology like drip irrigation in low and moderate sugarcane productivity region to increasing area under sugarcane and productivity of sugarcane.

Key Words: Productivity, Region, Sugarcane

Introduction:

Agriculture occupies an important position in Indian economy.Cotton and sugarcane are one of the most important commercial crop produced in India. Sugarcane is most benifited commercial crop. Sugarcane cultivation and development of sugar industry runs parallel to the growth of human civilization and is as old as agriculture. The importance and use of sugarcane and sugar in the country's socio-economic milieu is deep rooted and immense. In the current day rural economy set up sugarcane cultivation and sugar industry has been focal point for socio-economic development in rural areas by mobilizing rural

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resources, generating employment and higher income, transport and communication facilities.(M.F. Pathan, 2017). Dewett (1966) explains it as, "Productivity expresses the varying relationship between agricultural output and one of the major inputs, like land or labour or capital, Other complimentary factors remaining the same……." It may be born in mind that productivity is physical rather than a value concept.

There are verious uses of sugarcane include the production of sugar, Gud,molasses, rum, soda, ethanol and also bagasse. The remains part after sugarcane crushing may be burned to provide both heat-used in the mill and electricity generation, Some time bagasse is used as raw material for paper, cardboard, etc making.

Sugarcane is most important commercial crop of Solapur district as like India and tropical countries. Sugarcane occupies important place in the economy of the district. The district accounts more than 15 % of the cane crushed in the state during 2009-10. Sugarcane is grown all over the district due to favorable climatic and soil condition except rainfall. Sugarcane plays a very important role in the rural economy of Solapur district. It provides income for farmer and employment to the workers sections of the society. (Nangare M.R., 2014). Therefore attempt is made here to study the sugarcane production of Solapur Districts.

Study Region:

For the present investigation Solapur district is selected as a study region. Geographically Solapur district is located between $17^0$10' North to $18^0$32' North latitude and $74^0$42' East to $76^0$15' East longitude. It covers an area of 14,895 sq. km. The district is situated on the south eastern fringes of the Maharashtra state. The district is bounded on the north by the Ahmednagar district and Osmanabad district, on the east by Osmanabad and Gulbarga district of the state of Karnataka, on the southern side by Sangli and Bijapur district and on the western side by Pune and Satara district.

The proportion of area of Solapur district as compare to Maharashtra is about five (5%) per cent. It is administratively sub-divided into 11 tahsils. The soils of the district can be classified into three main types. These are black soil, coarse grey soil and reddish soil. Agro-climatically, the entire district comes under the rain shadow area. Rainfall is uncertain and scanty. The average rainfall for the district is 545.4 mm.

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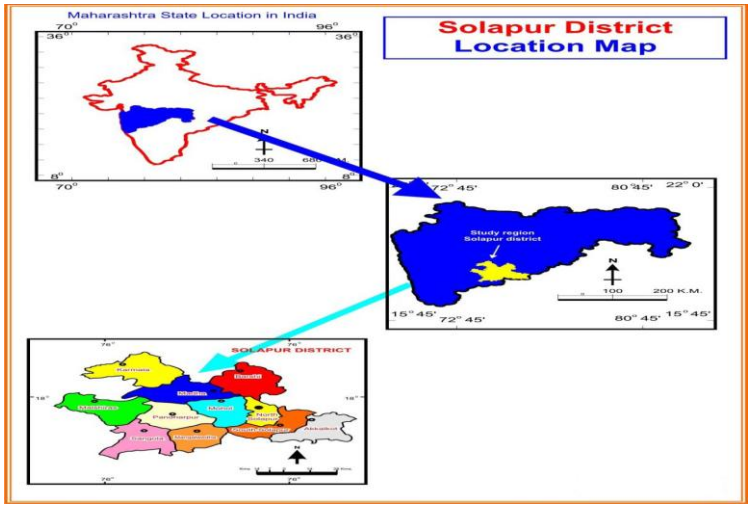

Objective:

The main objectives of this paper are as following.

1) To study the sugarcane productivity of Solapur district
2) To suggest impirical suggestion for low sugarcane productivity region

Database and Methodology:

The study was conducted in the Solapur district of Maharashtra state. For the purpose of the study, Only secondary information was collected from different sources. Data regarded to sugarcane production is collected from Agricultural department of Maharashtra state, Pune. The secondary data like cropped area, irrigated area and geographical information collected through District statistical Department of Solapur and socio-economic abstract of Solapur district in 2001-10. For the measurment of Sugarcane Productivity Enyedi's Method is used. Enyedi's has expressed this method with the following formulae.

$$\text{Productivity index} = \frac{Y}{Yn} \div \frac{T}{Tn}$$

Where,

Y = Total production of the selected crop in unit area i.e. tehsil

Yn = Total production of the same crop at regional level (entire study region)

T = Total cropped area of the unit area (tehsil level)

Tn = Total cropped area on national scale (entire study region)

Result and Discussion:

There are many attempts have been made to measure the agricultural productivity by verious scholars working in different disciplines. But the measure of productivity of any

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singal crop, Enyedi's method is more reliable and easy. Application of this method for the demarking the level of sugarcane productivity in the verios tahsils of Solapur district and its analysis reveals interesting facts

Table No. 01

Sugarcane Productivity Region of Solapur District (2000-01)

Sr.No.	Index Value	Productivity Grade	**Sugarcane Productivity Region** 2000-01
01	Above 1	High Productivity	Malshiras, Pandharpur, Mangalwedha
02	1- 0.5	Moderate Productivity	S.Solapur, Mohol, Karmala
03	Below .05	Low Productivity	Sangola, N.Solapur, Akkalkot, Madha, Barshi

Source: complied by Researcher

Table No. 02

Sugarcane Productivity Region of Solapur District (2009-10)

Sr.No.	Index Value	Productivity Grade	**Sugarcane Productivity Region** 2009-10
01	Above 1	High Productivity	Malshiras, Pandharpur, Mangalwedha, Akkalkot
02	1- 0.5	Moderate Productivity	Karamala, Mohol, S.Solapur, N.Solapur, Barshi, Sangola
03	Below .05	Low Productivity	Madha

Source: complied by Researcher

Above table no 01 and 02 shows the Sugarcane productivity of Solapur district of 2000-01 and 2009-10. According to this table, the following three sugarcane productivity regions are brought out.

I)High Productivity Region

High productivity region is value above 1. During the 2000-01, three tehsils have found with the high productivity in the study region. The high sugarcane productivity region lies southern parts of the district, tehsils like Malshiras, Pandharpur and Mangalwedha except Sangola tahsil. This is the high irrigation belt of district due to this sugarcane is dominant crop. High sugarcane area lead to development of cooperative sugar factories in this region. These sugar factories provide basic infrastructure for agricultural and provided job opportunity for thousend of people. Due to this productivity of these tehsils is high.

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In the year 2009-10 four tahsils have characterized with the high sugarcane productivity such as Malshiras, Pandharpur, Akkalkot and Mangalwedha. only Akkalkot tahsil is add in high productivity region in this year.

II) Moderate Productivity

This is a transitional zone between the high and low sugarcane productivity regions. Index value of moderate productivity is the ranging between 1 to 0.5. During 2000-01 this region occupied three tehsils of study region.. It included the tehsils S.Solapur, Mohol and Karmala.

In the year 2009-10, there are five tahsils found in this category such as Karamala, Mohol, S.Solapur, N.Solapur, Barshi and Sangola.This category covers five tehsils lies in northern, eastern and central parts of district.

III) Region Low Productivity Region

The low productivity region range is from 0.5 and below. In the year 2000-01, there are five tehsils in the study region have low productivity. These are Sangola, N.Solapur, Akkalkot, Madha and Barshi. In this region less rainfall, low irrigation facility, low irrigation intensity are some reasones to minimum area under sugarcane which lead to low sugarcane productivity. jowar is the predominant crop in this region .

During the year 2009-10 only one Madha tahsil found in this cotegory. The tahsils Sangola, N.Solapur, Akkalkot and Barshi are shifted from low to moderate and high category sugarcane productivity region.

Conclusion and suggestion:

From the above observation we can concluded that, The two tahsils Malshiras and Pandharpur have very high sugarcane productivity (> 2.0) than any other tahsils. Where irrigation facility provided through Ujjani right bank canal, Bhatagar right bank canal and also by River Bhima. On the basis of this productivity index four tehsils have recorded change in productivity level during the investigation period. All tehsils recorded positive change. Tahsil Akkalkot shifted from low to high category and tahsils Sangola, N.Solapur and Barshi are shifted from low to moderate category. This is because of increasing irrigational facility and method and increases number of sugar factories.

The empirical results suggest that, there is an urgent need to use of modern irrigation thechnology like drip irrigation in low and moderate sugarcane productivity region to increasing area under sugarcane and productivity of sugarcane.

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