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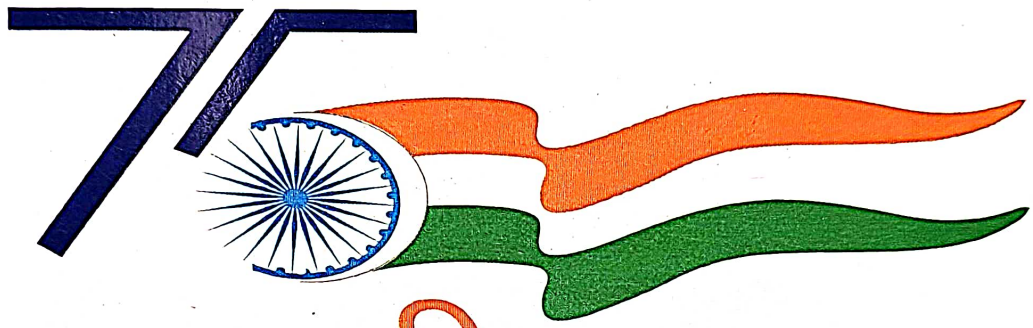
संशोधक

• वर्ष : ९० • डिसेंबर २०२२ • पुरवणी विशेषांक १२



आज़ादी का अमृत महोत्सव

इतिहासाचार्य वि. का.राजवाडे संशोधन मंडळ, धुळे

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इतिहासाचार्य वि. का. राजवाडे मंडळ, धुळे
या संस्थेचे त्रैमासिक

।। संशोधक।।

पुरवणी अंक १२ – डिसेंबर २०२२ (त्रैमासिक)

- शके १९४४
- वर्ष : ९०
- पुरवणी अंक : १२

*** प्रकाशक ***

श्री. संजय मुंदडा

कार्याध्यक्ष, इ. वि. का. राजवाडे संशोधन मंडळ, धुळे ४२४००१
दूरध्वनी (०२५६२) २३३८४८, ९४०४५७७०२०

कार्यालयीन वेळ

सकाळी ९.३० ते १.००, सायंकाळी ४.३० ते ८.०० (रविवारी सुट्टी)

मूल्य रु. १००/-
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विशेष सूचना : संशोधक त्रैमासिकाची वर्गणी चेक/ड्राफ्टने
'संशोधक त्रैमासिक राजवाडे मंडळ, धुळे' या नावाने पाठवावी.

अक्षरजुळणी : सौ. सीमा शिंत्रे, वारजे-माळवाडी, पुणे ५८.

महाराष्ट्र राज्य साहित्य आणि संस्कृती मंडळाने या नियतकालिकेच्या प्रकाशनार्थ अनुदान दिले आहे. या नियतकालिकेतील लेखकांच्या विचारांशी मंडळ व शासन सहमत असेलच असे नाही.

INDEX

A Geographical analysis of agriculture productivity in Kolhapur district

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Abstract :

The low production of food grain is one of the main reasons behind food scarcity. Thus, there is need to increase the agricultural production, especially food grains. There are many ways to increase the production such as advanced technologies, high yielding varieties of crops, multi crop farming, etc. But these techniques further have restriction of physical and climatic conditions, socio-economic constraint, traditional methods of farming etc. due to these restriction regional imbalances in food crop production are seen all over the world. In the present study, crop productivity is calculated for Kolhapur district. Kolhapur district has diversity in local relief, climate, soil and irrigation facilities. The region exhibits both hill ranges towards west and the plateau towards eastern side with local undulating sloping. It has affected the distribution of rainfall and temperature. Among several methods of calculating agricultural productivity Jasbir Sing 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 selected crop was measured, interpreted for Kolhapur district. The high productivity of Sugarcane is recorded in Panhala, Hatkanangale, Shirol and Karveer tahsil because fertile black regur soil and development of surface irrigation facility. The moderate productivity is recorded only in Radhanagari and Kagal tahsil. It is low in Shahuwadi, Gaganbawada, Bhudargad, Ajara, Gadhinglaj and Chandgad tahsil because lower development of surface irrigation facility

Keywords: Agriculture, Crop, Agriculture Productivity etc.

Introduction:

Today's explosively increasing population is one of the biggest challenges facing the world in general and developing and developed countries in particular. Due to this cause, having food shortage is worldwide. Therefore, it is necessary to develop a better development plan in the agricultural practices; this will help to increase crop productivity in real production.

Agricultural productivity is becoming increasingly important issue as the world population continues to grow. India, one of the world's most populous countries, has taken steps in the past decades to increase its land productivity. Agriculture still forms the backbone of Indian economy, in spite concerned efforts towards industrialization in last three decades. Agriculture contributes a high share of net domestic product by sectors in India. (Sule B.M. and Barakade A.J 2014). 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. Agricultural productivity may be defined as the

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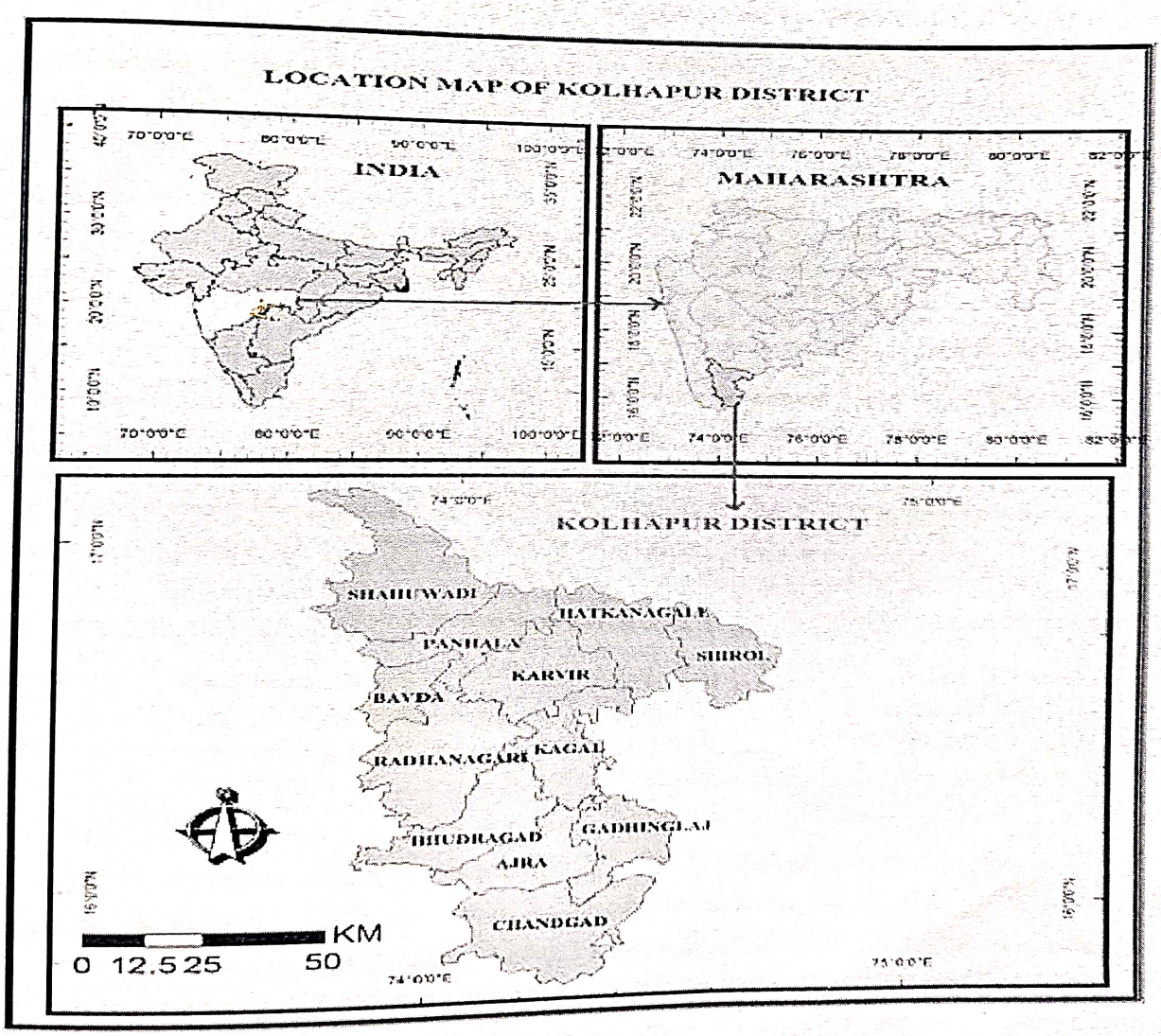
"ratio of index of local agricultural output to the index of total input used in farm production" (Shafi, 1984). Dewett and Singh (1966) defined "agricultural efficiency as productivity expressing the varying relationship between agricultural produce and one of the major inputs, like land, labor or capital, while other complementary factors remaining the same". This expression reveals that the productivity is a physical component rather than a broad concept.

The Study Region:

Kolhapur district is situated in the Southern part of Maharashtra. It is located in between 150 42' 30" to 170 11' 25" North latitude and 730 43' 10" to 740 43' 45" East longitude. Kolhapur district is surrounded by Kolhapur district to the North, Karnataka State to the East and South, Ratnagiri and Sindhudurg districts to the West. The Sahyadri ranges to the West and Varna River to the North form the natural boundaries. For the administrative purpose, the district is divided into 12 tahsils i.e. Shahuwadi, Panhala, Hatkanangale, Shirol, Karvir, Bavda, Radhanagari, Kagal, Bhudargad, Ajra, Gadhinglaj and Chandgad. The total population of the district is 38, 76,001 persons, as per 2011 census, it constitutes 3.45 percent population to the state total. The geographical area of district is 7746.40 square kilometer, which constitutes 2.52 percent of state. The average literacy of Kolhapur district is 81.50 percent. The Kolhapur city is a district headquarters with a population of 549236 persons, as per 2011 Census.



Objective:

The main objective of present study is to study the agriculture productivity in Kolhapur District.

Data Collection and Methodology :

The present study is based on secondary data source. To fulfill the objective data regarding irrigated area collected from Socio Economic review and District Statistical Abstract of Kolhapur districts. Agricultural epitomes published by State Government for the period of 2021-22.

After data collection, the data is processed. To avoid fluctuation and to get reliable result the five years average is taken into consideration. Tahsil is taken as the basic unit of investigation. To determine agricultural productivity is the technique introduced by Jasbir Singh (1976),

On the basic of Jasbir singh's this will give an idea of the level of agricultural productivity the lower the ranking coefficient, the higher the level of agricultural productivity and vice versa. This technique helps to identify the crop of good level of productivity in the study region.

Measurement of Productivity by Jasbir Singh's Method :

An attempt is made here to major agricultural productivity by Jasbir Singh (1976) in order to assess the regional differences in the level of food production and to delimit the weaker areas from the point of view of agricultural productivity the relative crop yield and concentration indices in ranking order and computed into average ranking coefficient. It may be called the crop yield and concentration indices ranking coefficient.

The procedure explained as follows.

$$Yi = \frac{Yae}{Yar} \times 100$$

Where,

Yi = is the crop yield index.

Yae = is the average yield per hectare of crop 'a' in the component enumeration unit.

Yar = is the average yield of the crop 'a' in the entire region.

$$Ci = \frac{Pae}{Par} \times 100$$

Where,

Ci = is the crop concentration index.

Pae = is the percentage strength of crop 'a' in the total copped area in the component enumeration unit.

Par = is the percentage strength of crop 'a' in the total cropped area in the entire region.

The derived crop yields and concentration indices for crops are ranked separately, yield and concentration ranks for individual crops are added and there after divided by two thus giving the crop yield and concentration indices ranking coefficient.

The equation is as follows.

$$\text{Crop Yield and Concentration Indices Ranking Coefficient For Crop-A} = \frac{\text{Crop Yield Index Ranking Crop 'A'} + \text{Crop Concentration Index Ranking Crop 'A'}}{2}$$

This will give an idea of the level of agricultural productivity the lower the ranking coefficient, the higher the level of agricultural productivity and vice versa. This technique helps to identify the crop of good level of productivity in the region. The ranking coefficients for individual crops thus derived are arranged in order and coefficients are grouped in to three efficiency grade viz. high grade, moderate grade and low grade for discussing the spatial

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variations in the region. In similar way, adding the value of all the crops selected for each tahsil and divided by 'n' has divided overall ranking coefficient. Where 'n' refers to selected crops having percentage strength above 5 years average cultivated area, in order to get accurate and average result of productivity level, yield statistics of five years have been arranged to avoid the annual fluctuation in the level of productivity.

1. Rice:

Rice is most important food crop in study region. it grow o the every part of study region. It need high rainfall and secured irrigation system. The table shows that the high productivity of Rice is recorded in Radhanagari, Karvir and Kagal tahsil because high yield variety seeds suitable climatic condition. The moderate productivity of Rice is recorded in Shahuwadi, Panahala, Shirol, Gaganbawada, Gadhingalaj and Chandgad tahsil. It is low in Hatkanagale and Bhudargad,tahsil.

2. Jowar :

Jowar crop cultivated in Kharif and rabbi season Jowar is dominant food crop in study region. The table shows high productivity of Jowar was recorded in Hatkanagale, Kagal and Gadhingalaj tahsil because black regur soil high yielding variety seeds. The moderate productivity is recorded in Shahuwadi and Panahala, tahsil. It was low in Shirol, Karveer, Gaganbawada, Radhanagari, Bhudargad, Ajara and Chandgad tahsil.

3. Wheat :

Wheat is a grown in black soil. It is irrigated crop in study region. Wheat is second dominant food crop in study region. The table shows that the high productivity of Wheat is recorded in Kagal, Shahuwadi and Karveer tahsil because availability of surface irrigation facility. The moderate productivity is recorded only in Panhala, Hatkanangale, Shirol, Gaganbawada, Radhanagari, Bhudargad, Ajara, Chandgad and Gadhinglaj tehsil have recorded in this tahsil. No single tehsil have found comes under low productivity.

4. Nachani :

In study region Ragi locally known as Nachani. It is food crop in study region. The table shows that the high productivity of Nachani is recorded in Shahuwadi, Panhala, Gaganbawada and Chandgad tahsil because high yield variety seeds and availability of irrigation facility. The moderate productivity is recorded in Karveer, Kagal, Radhanagari, Bhudargad, Gadhinglaj and Ajara tehsil tahsil. It is low in Hatkanangale and Shirol tahsil due to low and uncertain rainfall.

5. Sugarcane:

The upper Krishna basin has long been called the Maharashtra 'Sugar Bowl,' in which Kolhapur is one of the largest and most famous jiggery markets in India. Sugarcane is the main cash crop in Kolhapur District. Sugarcane is a most important cash crop in study region. The table shows that the high productivity of Sugarcane is recorded in Panhala, Hatkanangale, Shirol and Karveer tahsil because fertile black regur soil and development of surface irrigation facility. The moderate productivity is recorded only in Radhanagari and Kagal tahsil. It is low in Shahuwadi, Gaganbawada, Bhudargad, Ajara, Gadhinglaj and Chandgad tahsil because lower development of surface irrigation facility.

6. Gram:

Gram is second most important pulses crop in study region. The table shows that the high productivity of Gram is recorded in Panhala, Hatkanangale, Shirol and Karveer tahsil because fertile black regur soil, high yielding variety and availability of surface irrigation. The moderate productivity is recorded in Shahuwadi, Kagal, Bhudargad and Gadhinglaj tahsil. It is low in

Agricultural Productivity by Jasbir Singh's Method
[Crop Yield &Concentration Indices Ranking Coefficient of Selected Crops

Tahsils	Crops						
	Rice	Jowar	Wheat	Nachani	Sugarcane	Gram	Groundnut
Shahuwadi	3.5	4	1.5	1	6.5	4	1.5
Panhala	4	3.5	4	1.5	2	1.5	1
Hatkanangale	6.5	1.5	4.5	6.5	1.5	1	4.5
Shirol	7	6	4	7	1	1.5	7
Karvir	1.5	5	1.5	4	1.5	2	2
Bavda	3.5	5.5	4.5	1.5	5	8	6.5
Radhanagari	1	4.5	5.5	3.5	3.5	7.5	1.5
Kagal	1.5	1	1	4.5	4.5	4.5	2
Bhudargad	7	5.5	4.5	3.5	6.5	3.5	3.5
Ajra	6.5	5	4.5	4.5	7	2	5
Gadhinglal	4	1.5	4	4	6.5	4.5	1
Chandgad	4.5	6	3.5	1	5.5	6.5	7
District	4.2	4.1	3.6	3.5	4.3	3.9	3.5

Source: Compiled by researcher, on the basis of Socio economic Review and district Statistical Abstract of Kolhapur district 2015-16 to 2019-20.

Gaganbawada, Radhanagari, Ajara and Chandgad tahsil.

7. Groumdnut:

Groundnut was important oilseeds grown in the study area. Groundnut requires a temperature of 20°c to 25°c and 5 to 8 months to grow adequately Groundnut is important oil seed crop in study region. The table shows that the high productivity of Groundnut is recorded in Gadhinglaj, Shahuwadi, Panhala and Karveer tahsil because, high yielding variety and availability of surface irrigation. The moderate productivity is recorded only in Hatkanangale, Radhanagari, Kagal, Bhudargad and Ajara tahsil. It is low in Shirol, Chandgad and Gaganbawada tahsil.

Conclusions:

The forgoing section of this article has analyzed the spatial difference of all the administrative tahsils in Kolhapur for the period of 2015-16 to 2019-20. Rice is most important food crop in study region. The high productivity of Rice is recorded in Radhanagari, Karvir and Kagal tahsil because high yield variety seeds suitable climatic condition. The high productivity of Jowar was recorded in Hatkanagale, Kagal and Gadhingalaj tahsil because black regur soil high yielding variety seeds. It was low in Shirol, Karveer, Gaganbawada, Radhanagari, Bhudargad, Ajara and Chandgad tahsil.The high productivity of Nachani is recorded in Shahuwadi, Panhala, Gaganbawada and Chandgad tahsil because high yield variety seeds

ISSN No. 2394-5990

and availability of irrigation facility. It is low in Hatkanangale and Shirol tahsil due to low and uncertain rainfall. Sugarcane is the main cash crop in Kolhapur District. Sugarcane is a most important cash crop in study region. The high productivity of Sugarcane is recorded in Panhala, Hatkanangale, Shirol and Karveer tahsil because fertile black regur soil and development of surface irrigation facility. The moderate productivity is recorded only in Radhanagari and Kagal tahsil. It is low in Shahuwadi, Gaganbawada, Bhudargad, Ajara, Gadhinglaj and Chandgad tahsil because lower development of surface irrigation facility.The high productivity of Groundnut is recorded in Gadhinglaj, Shahuwadi, Panhala and Karveer tahsil because, high yielding variety and availability of surface irrigation

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