

Original Article**“Spatio-Temporal Changes in Crop Cultivation Intensity in Dharashiv District.”****Dr. Jaipal S. Suryawanshi**Dept. of Geography, BSS Arts, Science and Commerce College, Makani Tq. Lohara
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Submitted: 25 Jan. 2026**Revised:** 25 Mar. 2026**Accepted:** 20 May. 2026**Published:** 30 Jun. 2026**Abstract**

This research attempts to study the spatio-temporal variations in crop cultivation intensity in the Dharashiv district. Dharashiv District is recognized as a drought-prone and backward district. In such a district, geographical factors exert a significant influence on the intensity of crop cultivation. An analysis spanning the two-decade period from 2004–05 to 2024–25 indicates that the cropping intensity was recorded at 132.47% in 2004–05. Factors such as erratic rainfall, limited irrigation facilities, land fragmentation, soil characteristics, and climate change have influenced the distribution of cropping intensity. In the year 2024–25, a crop cultivation intensity of 168.20% was recorded. A significant transformation is evident during this period. This substantial shift in crop cultivation intensity within Dharashiv district can be attributed to a multitude of factors, including the adoption of modern technology, the availability of micro-irrigation facilities, market demand, changing climatic conditions, the cultivation of crops suited to local soil and rainfall patterns, strategic planning, and the expanding cultivation of cash crops. As a result, a more efficient utilization of agricultural land and an increase in per-hectare yield were observed. According to agricultural geographers, this phenomenon is termed 'agricultural efficiency.' Nevertheless, there remains significant scope within this district to bring about substantial changes in the intensity of crop cultivation.

Keyword- Crop Cultivation Intensity, Cropping Pattern, Double Cropping Area.

Introduction

Agriculture is a primary occupation in Dharashiv District, located within the Marathwada region of Maharashtra. Dharashiv District was formerly known as Osmanabad. This district is situated in the southeaster part of Maharashtra, within the vicinity of the Balaghat mountain range.



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Agriculture in this district has been dependent on rainfall. Due to irregular rainfall patterns and low precipitation levels, the district is recognized as a backward and drought-prone region. Over the past two decades, changes in crop cultivation intensity have occurred due to climate change, irrigation facilities, market demand, droughts, and modern technology. Cropping Intensity refers to

“The number of times crops are cultivated on the available agricultural land within a single year; this is known as Cropping Intensity.” Human traditions, irrigation facilities, and agricultural practices all these factors influence the net sown area. Factors such as soil characteristics, topography particularly water scarcity during the summer season and the size of landholdings influence land use. The combined effect of all these factors is evident in the fact that, compared to other regions of Maharashtra, the proportion of land under double cropping in this study area remains relatively low.

Hypothesis

1. Crop cultivation intensity depends on both environmental and human factors.
2. The intensity of crop cultivation has increased due to the expansion of the irrigated area.
3. Due to drought conditions, the intensity of crop cultivation in some talukas remains low even today.
4. The area under traditional crops has declined due to the expansion of cash crops.

Objective

1. To highlight the spatial and temporal changes occurring in cropping patterns during the
2. Study period, and to analyse the changes that have taken place.
3. To study the intensity of crop cultivation in Dharashiv District.
4. To suggest measures for sustainable agricultural development in Dharashiv district in
The future.

Database and Methodology

The entirety of this research work is based on secondary data. This data encompasses the total cropped area and the net sown area, utilizing information spanning the two-decade period from 2004–05 to 2024–25. Secondary data has been compiled from the Socio-Economic Review Report and the District Statistical Summary (2004–05 to 2024–25) of Dharashiv District. The compiled data has been processed and analysed in the form of tables.

Crop cultivation intensity has been calculated using the following formula.

$$\text{Intensity of Cropping Cultivation} = \frac{N}{N_1} \times 100$$

N = Total Cropped Area

N₁ = Net Area Sown

Study Area

Dharashiv District is situated in the southeastern part of Maharashtra, and the majority of its terrain is rocky in nature. The district lies at an elevation of 600 meters above sea level. It comprises a total of eight talukas: Paranda, Bhum, Washi, Kalamb, Dharashiv, Tuljapur, Lohara, and Umarga. The district's latitudinal extent spans from 17°

35' North to 18° 40' North, while its longitudinal extent lies between 75° 16' East and 76° 40' East.

Dharashiv district shares its borders with Solapur district to the southwest, Ahmednagar district to the northwest, Beed district to the north, Latur district to the east, and the districts of Bidar and Kalaburagi (in the state of Karnataka) to the southeast. The total geographical area of Dharashiv district is 7,512.4 square kilometres, and according to the 2011 census, its total population stands at 1,657,576.

Subject Analysis

To what extent has crop cultivation been undertaken within the net sown area of Dharashiv district? What factors influence the area under crop cultivation factors that distinctly determine the intensity of agricultural activity such as climate, rainfall, soil type, irrigation facilities, market access, modern technology, improved seeds, government schemes, and so forth? The combined impact of these numerous factors is ultimately reflected in the overall intensity of crop cultivation. In view of the changes in crop cultivation intensity within Dharashiv district, separate data for the two talukas Washi and Lohara was not available for the year 2004–05; consequently, this information was incorporated into the Bhum and Umarga talukas, respectively. However, for the year 2025, data for both of these talukas has been presented separately.

Table No. 01 below illustrates the nature and extent of changes in crop cultivation intensity across the various talukas of Dharashiv district.

Table- 01 Cropping Cultivation Intensity of Dharashiv District
(2004-05 to 2024-25)

S r .	Name of Tahsil	2004-05			2024-25			Volume of Change in Croppin g Pattern
		Net area Sown	Total Cropped Area	Cropping Cultivation Intensity (%)	Net area Sown	Total Cropped Area	Cropping Cultivation Intensity (%)	
1	Paranda	84479	92609	109.62	72780	113197	155.53	45.91
2	Bhoom	71632	92553	129.20	81292	114168	140.44	11.24
3	Washee	--	--	--	52335	82584	157.79	--
4	Kalamb	93554	102302	109.35	81644	162896 4	199.48	90.13
5	Dharashiv	89968	117256	130.33	125844	228128	181.27	50.94
6	Tulajapur	111640	189081	169.36	131033	206405	157.52	-11.83
7	Lohara	--	--	--	47667	88191	185.01	--
8	Omerga	131178	177799	135.54	82398	139844	169.71	34.17
9	Total	582451	771600	132.47	674993	1135381	168.20	35.73

Source- Socio-Economic Review of Dharashiv District (2004-05 to 2024-25)

According to the Socio-Economic Review Report of Dharashiv District, an increase of 35.73 percent in the district's cropping intensity was observed during the

period from 2004–05 to 2024–25. In 2024–25, the highest cropping intensity was recorded in Kalamb Taluka (199.48%), while the lowest was recorded in Bhum Taluka (140.44%). For the convenience of study, the talukas have been classified into various experimental regions based on their cropping intensity.

1. Regions with Low Cropping Intensity

This region comprises the talukas of Bhum, Paranda, Washi, and Tuljapur.

Both natural and anthropogenic factors are responsible for the low crop intensity observed in this area. In particular, factors such as irregular and insufficient rainfall, light and poor-quality soil, shallow and rocky terrain, traditional farming methods, small and fragmented landholdings, a lack of irrigation facilities, and a reliance on dryland farming exert the most significant influence. Consequently, these factors pose substantial obstacles to efforts aimed at increasing crop intensity.

2. Regions with Moderate Crop Cultivation Intensity

This region is situated adjacent to a low-intensity zone and includes the Umarga Taluka. In this taluka, the crop cultivation intensity stood at 135.54 during the year 2004–05. By 2024–25, this figure rose to 169.71, representing an increase of 34.17 percent.

3. Regions of High Crop Cultivation

The talukas of Kalamb, Dharashiv, and Lohara fall within the region characterized by high and very high crop cultivation intensity.

Although the crop cultivation intensity statistics for Lohara Taluka for the year 2004–05 were included within the data for Umarga Taluka, separate statistics are available for 2024–25; accordingly, the crop cultivation intensity in 2024–25 stands at 185.01. The reasons for this region's exceptionally high crop intensity include fertile soil, irrigation facilities, water conservation measures, modern technology, and the increased cultivation of commercial crops; consequently, a noticeable rise is observed in the practice of taking more than one crop per year within these talukas.

A significant change is observed in the area under double cropping in Dharashiv district. During the period spanning 2004–05 to 2024–25, the area under double cropping has increased, and distinct variations are clearly evident across the various talukas.

Suggestions

1. To enhance the intensity of crop cultivation, it is essential to make additional water sources available.
2. In drought-prone talukas, it is necessary to implement initiatives such as 'Jalyukta Shivar' and 'Water Conservation and Percolation' (Pani Adva, Pani Jirva).
3. To promote drip irrigation.
4. Establishing a water conservation project
5. To make sustainable agricultural technologies available through government schemes.
6. Weather-based Crop Planning
7. Crop Diversification and Its Planning

Conclusion

A comprehensive analysis of crop cultivation intensity in the Dharashiv district reveals the significant influence of environmental factors. Despite adverse conditions—such as irregular rainfall, drought-prone areas, rocky terrain, and poor soil quality—substantial changes in crop cultivation intensity are evident in 2024–25 compared to 2004–05, reflecting significant spatial and temporal shifts. Factors such as the expansion of commercial crops, market demand, and irrigation facilities have exerted a profound

influence on prevailing cropping patterns. Moving forward, it is imperative to place greater emphasis on sustainable water management and crop diversification.

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