



A GEOGRAPHICAL STUDY OF SPATIAL VARIATION IN CROP COMBINATION OF JALNA DISTRICT (MAHARASHTRA)

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ABSTRACT

The crops are generally grown in combination and it is rarely that a particular crop occupies a position of total isolation given areas unit at given set of time. An attempt is made here to study the crop combination of Jalna District. The study reveals that tahsil reflects three to seven crop combination. Monoculture is not observed in any circle of the tahsil, the decrease in three crop combination and increase up to seven crops combinations reflect a clear trend towards the complexity of crop combination. Sugarcane, Fodder Crop, Groundnut and Onion are the major crop in the tahsil, the crop combination regions are indicate the direct the direct impact of rainfall, soil, irrigation facilities and economic condition of farmers.

Keywords: crop combination, spatial variation, geographical study

INTRODUCTION:

A crop combination region constitutes an important aspect of agriculture. The crop combinations give an idea about the agricultural topology and agriculture income of a region. Such region provides a real significance and strength of individual crops, to advocate suitable device for planning improvements in the under developed regions. In simple manner crop combination analysis is really core of agricultural geographic investigation. Agriculture is the main economic activity in the study area. The spatial distribution of various crops and their growth depends upon physio-socioeconomic conditions prevalent in the region.

The cultivation of crops and their growth are closely related to the decision making process on one hand and adaptation of innovation in agriculture, i.e. use of



high yielding varieties, improved and efficient implements, applications of chemical fertilizers and pesticides. The hectare, under individual crop gives relative strength and realistic picture of crop land use in the analysis of crop ranking of the region. The ranks of crops and their combination provide spatial variation in the distribution

LOCATION AND EXTENT:

Jalna district is situated in the central part of the Maharashtra state of republic of India and northern direction of Marathwada region. Especially district lies between 19⁰⁰1' North to 21⁰⁰3' North latitudes and 75⁰⁰4' East to 76⁰⁰4' East longitude.

Jalna district erstwhile a part of Aurangabad district was formed on 1st May, 1981 by carving out Jalna district, Bhokardan, Jafrabad and Ambad tahsil of Aurangabad district and Partur tahsil of Parbhani district. The boundaries of Jalna are adjacent to Parbhani and Buldhana on east, Aurangabad on west, Jalgaon on north and Beed on south. Jalna district covers an area of 7,727 sq. km which is 2.51 percent of the total state area. It has population of 19.58 lakh as per 2011 census. Recently Jalna district is divided into eight tahsil for administrative purpose these are Jalna, Ambad, Bhokardan, Jafrabad, Badnapur, Partur, Mantha and Ghansawangi. According to 2011 census 971 villages situated in Jalna districts. There are 806 gram-panchayat and 157 group grampanchayat. Krushi Utppann Bazar Sameetee located at Jalna, Ambad, Bhokardan, Partur and Mantha tahsil. Eight panchayat samities in Jalna districts.

OBJECTIVES:

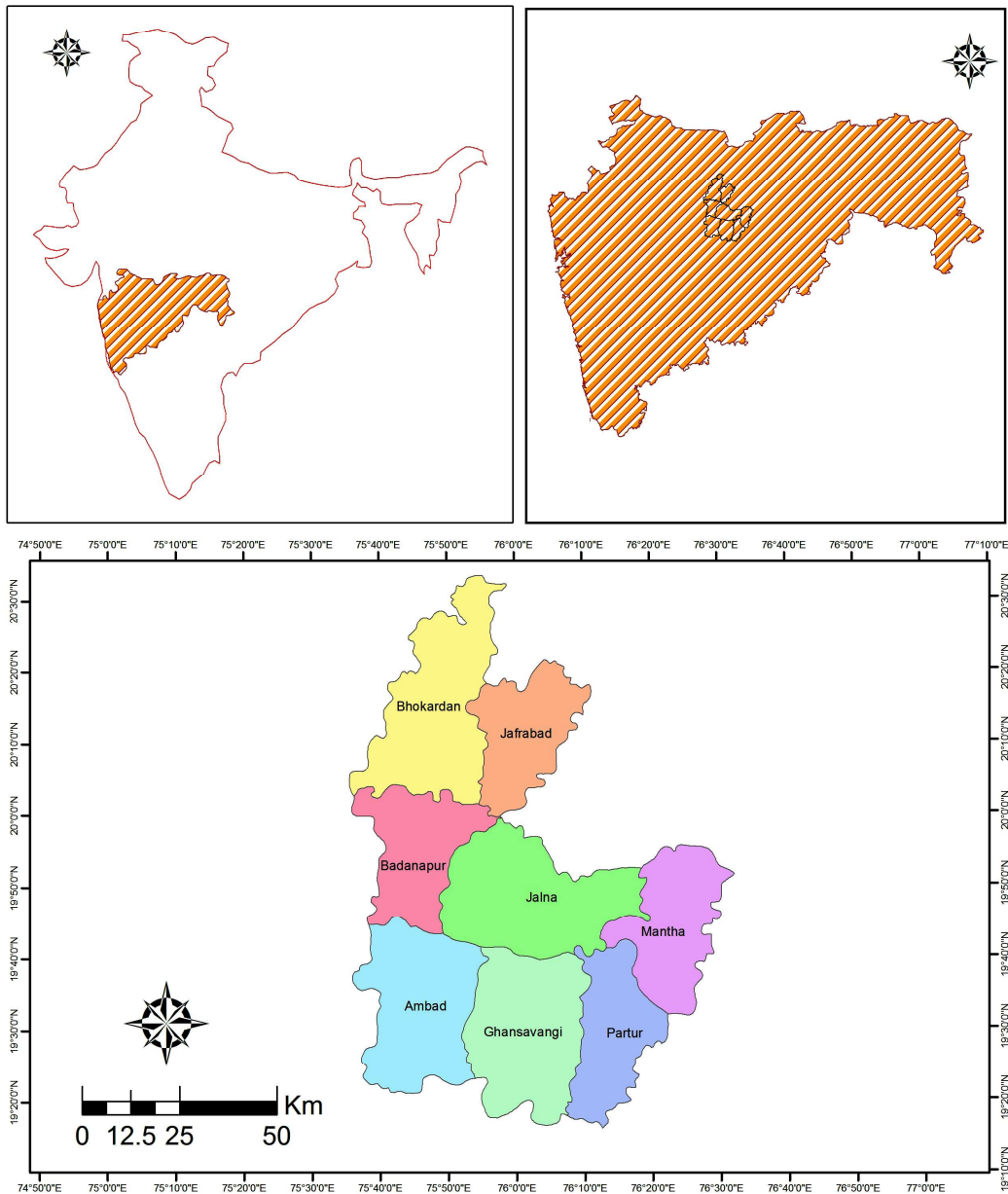
The research paper is based on following objectives:

1. To highlight on the Spatio-temporal changes in crop combination regions of the tahsil
2. To find out and analyze the crop combination of study region.
3. To understand the cropping pattern of various circles.

DATABASE AND METHODOLOGY:

The secondary data of various crops have been collected from namuna no.20 in land record department at tahsil office . Present study is based on the secondary data collected from tahsil Department of Jalna district.

LOCATION MAP



The distribution of Crops 2005-15 has studied in this research paper. All information analyzed with the help of GIS technique in software and drawing some conclusions. Simple statistical method has used to compute



crop ranking and Weavers Crop combination technique for analyses of spatial crop combination. In order to assess the crop combination, the following formula has been adopted. Where 'd' is the difference between the crop percentage in a given country (areal unit) and the appropriate percentage in the theoretical curve and 'n' is the number of crops in a given combination. 'n' crops are those crops which occupy 5% area about total net sown area.

$$d = \frac{\sum d^2}{n}$$

Monoculture = 100 % of the total harvested crop land in one crop.

Two crop combination = 50 % in each of two crops.

Three crop combination = 33.3 % in each of three crops.

Four crop combination = 25 % in each of four crops.

Five crop combination = 20 % in each of five crops.

Ten crop combination = 10 % in each of ten crops.

Table No.1

Crop Combination of Jalna District

Sr.No.	Tahsil	Crop Combination (2005)	Crop Combination (2015)
1.	Jalna	Five Crop	Seven Crop
2.	Badnapur	Five Crop	Six Crop
3.	Bhokardan	Four Crop	Six Crop
4.	Jafrabad	Four Crop	Six Crop
5.	Ambad	Six Crop	Seven Crop
6.	Ghansavangi	Six Crop	Seven Crop
7.	Partur	Five Crop	Seven Crop
8.	Mantha	Four Crop	Five Crop

Source: Calculated by researcher.



For the determination of the minimum deviation the standard deviation method was used. Where d is the difference between the actual crop percentages in a given county (areal unit) and the appropriate percentage in the theoretical curve and n is the number of crops in a given combination. As Weaver pointed out, the relative, not absolute value being significant, square roots were not extracted so, the actual formula used as follows:

Conclusion-

Present study shows that in the year 2005 highest six crop combination have seen in Ambad Ghansawangi Tahsil, where as 5 crop combination seen in Jalna Badnapur ,Partur Tahsil, lowest four crop combination have seen in Bhokardan, Jafrabad and Manta Tahsil. In the next decade crop combination scenario has changed, farmer preferred multiple crop in land in the year 2015 crop combination of Jalna district have seen in following manner highest 7 crop have seen in Jalna, Ambad, Ghansawangi and Partur Tahsil, 6 crop combination have seen in Badnapur, Bhokardan, Jafrabad Tahsil. And lowest five crop combination head scene in Mantha tahsil

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