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AGRICULTURAL LAND –USE PATTERN IN NASHIK DISTRICT OF MAHARASHTRA

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Abstract:-In this present paper an attempt has been made to analyze the agricultural land use pattern in Nashik District. The study is based on secondary source of data obtained from the district statistical handbook. Agricultural land use pattern is always influenced by physical,weathersocio-economic and technological factors. In this paper a detail study has been done to find out the changing land-use pattern, cropcombination, cropdiversification, and crop ranking of the Nashik District for the year 2010-11 the crop data has been computed with the help of Bhatiamethod of crop diversification and weaver's method of crop combination.

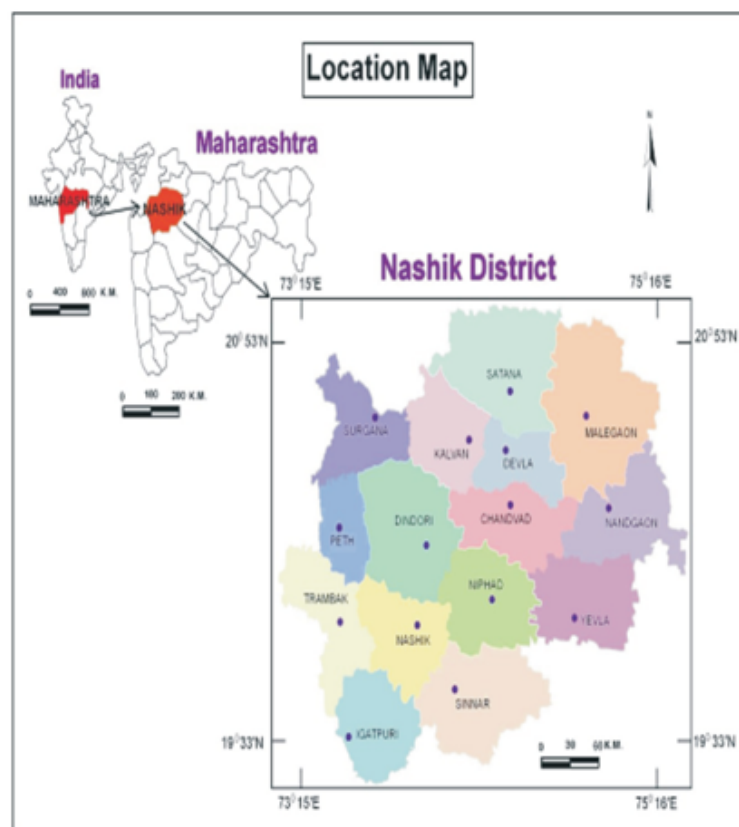
Keywords:CroppingPattern, CropCombination, CropDiversification, and Crop Ranking.

INTRODUCTION

The study of crop combination region is an important aspect of agricultural geography. In country like India where agricultural has been practiced since ancient time, still form a backbone of Indian economy. Farmer are growing numerous crops in the field rather than single crop. The distributional pattern of crops in any region is an outcome of predominance of certain crop or combination which give birth to agricultural region for a comprehensive and better understanding of agricultural system the study of crop combination is of great significances and is essential for agricultural planning and development is a multidimensional concept which includes a variety of aspects such s agricultural and utilization, crop diversification, crop productivity, intensity of cropping etc

STUDY AREA:-

The Nashik District of Maharashtra State has been selected for proposed work. The Nashik is one of the major agriculturally and industrially developed districts in the North Maharashtra.Theextent of the district lies in 19035'N and 20052' latitude 73016'E and 74056'E longitude with an area of 15530 sq.km total population of the district is 6109052 of which male and female are 3,164261 and 2944791 respectively. Literacy rate of Nashik District in 2011 are 80.96 compared to 74.43 of 2001. Nashik District is Rhomboidal in shape with the longer diagonal of about 170 km from south -west to north east and extreme breadth of about 120 km from north to south. The Godavari passes through Nashik.Jalgaon district is at its east and northeast, Surat and Dang District is at north.Thane District is at south west and west Aurangabad district is at south east and Ahamadnagar is at south.There are 15 Tahasil in Nashik District Malegaon is the largest Tahasil with 12% area and Peint is smallest Tahasil with 3.63 % area in the district.



AIM AND OBJECTIVES

Present study intends the following objectives

1. To Study the land-use pattern and cropping pattern
2. To study the crop ranking and crop combination
3. To study the level of crop diversification

DATA BASE AND METHODOLOGY:-

The Present Study mainly based on secondary data sources, collected from the economic survey and district statistical department of the Nashik district. For the present study whole district is considered as a unit. Simple statistical method used and calculate the crop ranking, for crop combination weaver's method has been applied to delineate the crop combination for the following formula

Weaver's method:

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

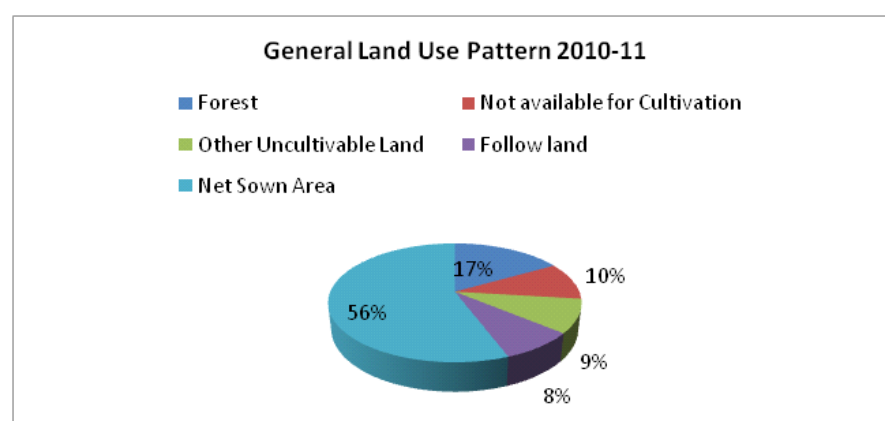
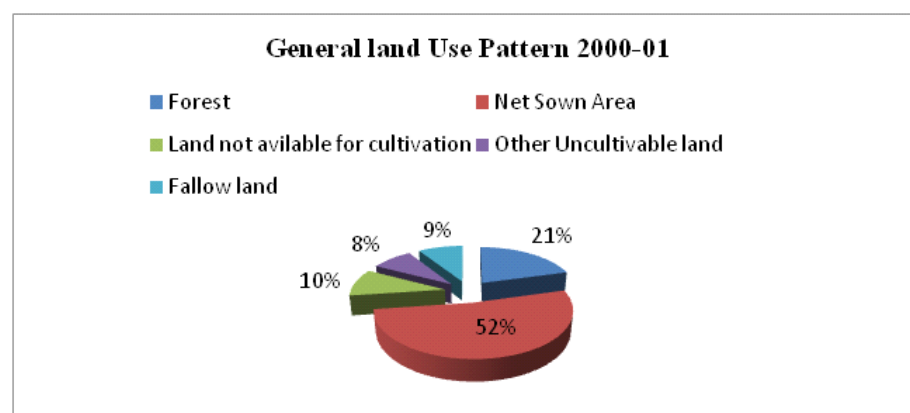
Where D is the difference between the crop percentage in given area and n= number of crops in a given combination. Crop diversification in Present study, Bhatia's method has been adopted the formula expresses as:

$$\text{Index of Crop Diversification} = \frac{\text{Percentage of Net Sown Area}}{\text{Number of 'n' crops}}$$

Table : 1 Land Use Pattern in Nashik District

S.N	LAND USE PATTERN	2000-2001		2010-2011		% INCREASE OR DCREASE
		AREA	PERCENT	AREA	PERCENT	
1	Total Geographical area for the land utilization	1536822	100	1425511	100	-
2	Forest	320668	20.87	240423	16.87	-4
3	Not available for cultivation	-	-	-	-	-
a	Area put to non-agriculture use	10652	0.69	14635	1.03	+0.34
b	Barren and un-cultivable land	142128	9.25	128608	9.02	-0.23
4	Other un-cultivated are excluding fallow land	-	-	-	-	-
a	Permant pastures and grazing lands	42312	2.75	40378	2.62	-
b	Land under miscellaneous tree crops and groves	27098	17.63	N.A	N.A	-
c	Cultivable waste	45616	2.97	94574	6.63	+3.66
5	Fallow Lands	-	-	-	-	-
a	Current Fallow	105206	6.84	69876	4.9	-1.94
b	Others fallow	34920	2.27	47673	3.34	+1.07
6	Gross Cropped area	-	-	-	-	-
a	Net sown area	809058	52.64	800677	56.16	+3.52
b	Area sown more than once	56103	3.65	79581	5.58	+1.93
7	Gross irrigated area	1021898	66.49	880258	61.75	-4.74

(Source: - District statistical handbook)



Through the above table it shows that the changes in agricultural land-use pattern in Nashik District, compared the land-use data of 2000-2001 to 2010-2011 (Table-1) Area put to non- agricultural use, Cultivable waste, Other fallow, Net sown area, Area sown more than once all these showed increasing trends. While some categories showed decreasing trend in area coverage Barren and Un-cultivable land, Current fallow, Gross irrigated areas are decreased 0.23, 1.94, 4.74 percent respectively.

In Nashik District the forest covered area is changed and decline by -4 percent due to the increasing of population, and demand for more land under cultivation.

Ranking of Crops

Ranking of the crop is the real picture of the study area. The Ranking of the crop show the tendency of farmer or cultivator weather the farmer is traditional or market oriented.in this method that crops occupy the highest percentage of the total cultivated area, is chosen as first rank crop.

Table 2 Ranking of the Crops in District Nashikin 2010-11

S.N	Name of the Tahasil	First Rank Crops	Second Rank Crops	Third Rank crops
1.	Surgana	Rice	Nachani	Vari
2	Kalwan	Maize	Bajara	Rice
3	Deola	Maize	Total Vegetable	Jawar
4	Satana	Bajara	Maize	Kulith
5	Malegaon	Bajara	Maize	Kulith
6	Nandgaon	Bajara	Total Vegetable	Wheat
7	Chandwad	Bajara	Total Vegetable	Jawar
8	Dindori	Total Vegetable	Total Fruits	Grapes
9	Peint	Nachani	Total Fruits	Rice
10	Trimbak	Nachani	Rice	Vari
11	Nashik	Total Vegetable	Wheat	Rice
12	Igatpuri	Rice	Harbara	Nachani
13	Sinner	Bajara	Total Vegetable	Wheat
14	Niphad	Total Fruits	Grapes	Total Vegetable
15	Yeola	Bajara	Total Vegetable	Maize

Ranking of Crops

The ranking of crops can be calculated by seeing the percentage of area occupied by a crop to the total cropped area. The ranking of crop show the tendency of farmer weather they are market oriented or traditional. In this method that crop occupy the highest percentage of the total cultivated area, is chosen as fist rank crop and after it crops are taken in decreasing order.

First Ranking Crops

In the above table shows that the Bajara has attained the First rank in six tahasil. It shows that the Bajarais the leading crops in the district and followed by Rice, Nachani, Maize and Total Vegetable dominated in other tahasil.

Second Ranking Crops

Total Vegetable has attained Second position in five tahasil. Total fruits and Maize attained the second position two tahasil namely Dindori,Peint and Satana, Malegaon.Those crops which were on first position in some tahasil are on second position in another tahasil. Grapes second place in Niphad.

Third Ranking Crops

Kulith is the Third ranking crops emerging in the Satana and Malegaon Tahasil. Rice is the third ranks in the tahasil of the Kalwan,Peint and Nashik. Wheat,Jowar and Vari also attained the third place in some tahasil.

Crop Combination

The crops are generally grown in combination in any region and these crops have its relative position in terms of crop combination. Farmers are growing numerous crops in the field rather than single crop. The distributional pattern of crops in any region is an outcome of predominance of certain crop or combination of crops. In 2010-11 in Nashik District 18 crop combination regions emerged with the help of Weavers method.

Table No- 03 Crop combination tahasil based on Weaver’s Method 2010-11

Name of the Tahasil	No of Crop Combination	Crops in Combination
Surgana	03	R/N/V
Kalwan	18	All Crops
Deola	03	M/TV/J
Satana	18	All Crops
Malegaon	02	B/M
Nandgaon	02	B/TV
Chandwad	02	B/TV
Dindori	08	TV/TF/G/W/R/SU/N/H
Peint	03	TV/N/R
Trimbak	04	N/R/V/U
Nashik	16	Except MT AND M crops
Igatpuri	18	All Crops
Sinner	18	All Crops
Niphad	06	G/TF/TV/M/S/W
Yeola	06	B/TF/M/W/H/MG

Crops R= Rice, N= Nachani, M= Maize, V= Vari, TV= total Vegetables, J= Jawar, B= Bajara, S= Sugarcane, W= Wheat, TF= Total Fruits, U= Udid, G=Grapes, H=Harbara, MG=Mung, MT=Muth, K=Kulith, Tu=Tur, TS= Total Spices

Crop Combination Analysis

According to the method of weaver’s eighteen crop combination region emerged out in 2010-11. Total Eighteen crops were found in this district so far these are such as Rice, Nachani, Maize, Vari, Total Vegetable (includes Potato, Onion, Brigal, Tomato) Jawor, Bajara, Sugarcane, Wheat, Total Fruits (Mango, Pomegranates, Banana, Orange, Guava) Black gram, Grapes, Harbara, Mung, Kulith, Tur, and Spices these all crops were involved in various crop combination. The cropping combination denotes the proportion of land under different crops in various combinations. The tahasil stretching from two crops to eighteen crops. In the district two crops are found in three tahasil namely Malegaon, Nandgaon, and Chandwad. Three crops are found in the tahasil of Deola, Peint, and Surgana. Trimbak is the only one tahasil here the four crops combination are found. Six crops are found in two tahasil Niphad and Yeola while eighteen crops are found Igatpuri, Sinner, Satana, Kalwan. The most interesting facts about the district is the absence of monoculture. The district is dominated by number of crops which show high level of crop diversification because greater the number of crops in crop combination higher the level of crop diversification and vice versa:

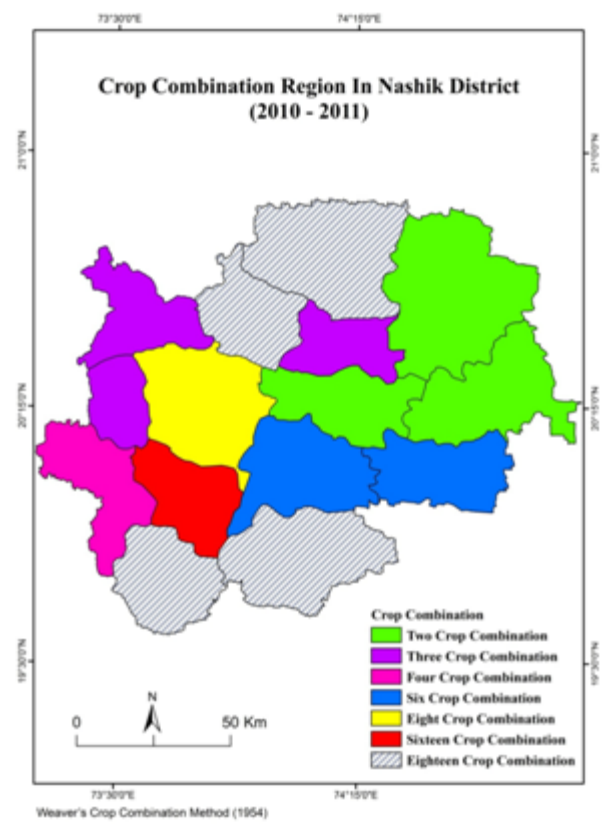
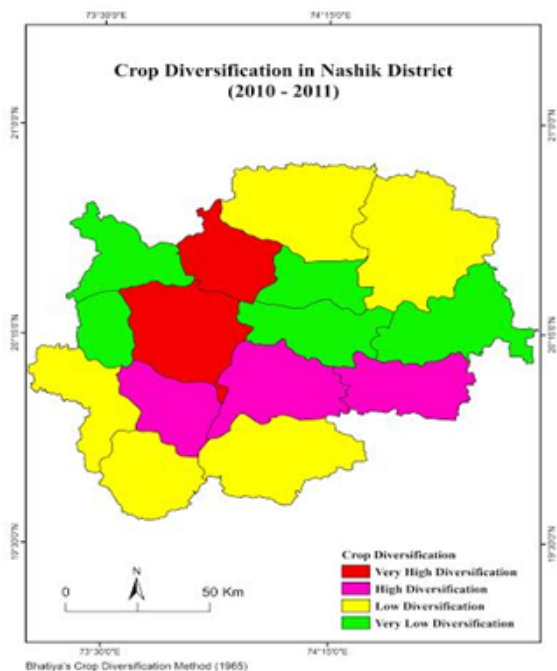


Table No 4 Crop Diversification in Nashik district in 2010-11 (According to Bhati’s Method)

Sr.no	Tahsil	No of Crops	Crops Name	D Value
01	SURGANA	3.00	R/N/V	27.73
02	KALWAN	2.00	M/B	13.16
03	DEOLA	1.00	M	29.02
04	SATANA	1.00	B	20.55
05	MALEGAON	2.00	B/M	22.19
06	NANDGAON	1.00	B	45.52
07	CHANDWAD	1.00	B	38.39
08	DINDORI	4.00	TV/TF/G/W/R	10.63
09	PETH	1.00	TF	28.34
10	TRIMBAK	2.00	N/R	23.67
11	NASHIK	2.00	TV/W	15.09
12	IGATPURI	2.00	R/H	21.91
13	SINNER	1.00	B	21.37
14	NIPHAD	4.00	TF/G/TV/M	15.80
15	YEOLA	2.00	B/TV	15.13

Degree of Crop Diversification		No of Tahsil	Name of Tahsil
<15	Very High	2.00	Dindori, Kalvan
15-20	High	3	Nashik, Yevala, Niohad
20-25	Low	5.00	Satana, Sinner, igatpuri, Malegaon, Trimbak
>25	Very Low	5	Surgana, Peth, Deola, Chandwad, Nandgaon



CONCLUSION:-

Nashik district is still subsistent in character. Among the cereals, Bajara and Rice rank first and second respectively. Vegetable, Grapes are major cash crops of the district. As the above study shows that largest proportion of the area is covered by grain crops. The study of ranking indicates that the farmer of Nashik District prefers food crops firstly and then they cultivate Grapes and vegetable cash crops to fulfill their economic needs due to the lower development of irrigation facilities. The study of crop combination reveals that monoculture is totally absent in the Nashik District. Indicates that the lower development of technological factors and irrigation facility.

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