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CROP CONCENTRATION IN SINDHUDURG DISTRICT: A GEOGRAPHICAL ANALYSIS

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Abstract- In the present paper the cropping pattern in Sindhudurg district is outlined, followed by the discussion on the area under individual crops. Bhatia's method is used for concentration of selected crops. In this paper an attempt is made to study the changes in crop concentration in the study region. There has been a significant variation in the area patterns of the crop concentration in the study region. The indices of crop concentration area calculated for two periods i.e. 1981-86 and 1996-2001 and are given in the (table 1.1).The spatial variations in the degree of crop concentration area are found to be the result of the different interaction such as physiographic, climatic, hydrological, socio-economic and technological factors in organizational of an area.
Key Words - cropping pattern, crop concentration index

Introduction

Cropping pattern is the proportion of area under various crops at a point of as it changes over space and time. The cropping patterns of a region are closely influenced by the geo-climatic, socio-economic, historical and political factors (Hussain, M. 1996) patterns of crop land use of a region are manifestation of combined influence of physical and human environment. Differences in attitude towards the rural land in the level of prosperity and technology have produced changes in emphasis. Their effects on both landscape and land use studies are likely to be far reaching (Coppock, 1968). Weather plays a decisive role in determining the existing cropping pattern. Cropping pattern is also depending on terrain, topography, slope, soils and availability of water for irrigation use of pesticides, fertilizers and mechanization. In the simple word cropping pattern means the production of area under various crops at a point of time. It is dynamic concept because no cropping pattern can be said to be ideal for all times to a particular region. It changes in space and time with a view to meet requirements and is governed largely by the physical as well as cultural and technological factors. The change in cropping pattern in particular span of time clearly indicates the changes that have taken place in the agricultural development. These changes are brought about by socioeconomic influence.

The various geographers applied location quotient method to work out degree of the crop concentration in specific study region. Crop concentration means areal density of individual crop or crop concentration reveals the variation in the density of any crop in a given region at a point of time (Chouhan, 1987). The geographers pioneer work of Florence (1948), Chisholm (1962), Bhatia (1965), Jasbir Singh (1976) these are the contributors to mark the agricultural region with the help of the quotient method.

Study area

Sindhudurg District is situated between North 15° 37' to 16° 40' latitudes and East 73° 19' to 74° 13' longitudes. It is bordered by Arabian sea on the west, Sahyadri hill ranges and Kolhapur district on the east, Ratnagiri district on the north, Goa state on the south and Belgaum district of Karnataka state on the south east. The geographical area of the district is 5087 sq.km. The topography of the district is as per the Konkan pattern i.e. approximately 25 km. of portion of land near seashore, is can be divided into three Sub-regions. The western coastal strip having width of 20 to 20 km which is traversed by creaks hills known as khalati. The eastern portion covered by Sahyadri range and its offshoots known has Sahyadri strip and in between there is a strip of small plateaus and flat land known as Valati, All the three sub regions are in the north south direction. Width of the middle portion of land is 25 km and that of Sahyadri hill range is 15 to 25 km.

Objective

1) To study the crop concentrations and its variation in Sindhudurg district.
2) To identify areas of crop concentration on the basis of Bhatia's method.

Database and Methodology

For the clear cut picture of the study of patterns of land utilization, cropping patterns is made with the help of secondary data obtained from Socio-Economic Abstract of Sindhudurg District. In order to determine the tahsil wise concentration of crops Bhatia's method is used for the calculation of the location quotient. The following formula is used to work out the concentration of crop in Sindhudurg district.

$$\text{Index for determining Concentration of crop 'a'} = \frac{\text{Area of crop 'a' in the component area unit}}{\text{Area of all crops in the component Areal unit}} \div \frac{\text{Area of crop 'a' in the entire region}}{\text{Area of all crops in the entire region}}$$

Rice

High to moderate level of rice concentration was observed in Devgad tahsil while moderate to high level was experienced in Sawantwadi and Kankavali tahsils during the period of investigation (map 1.1 B). No change in rice concentration was seen in Malvan, Kudal, Vaibhavwadi and Vengurla tahsils between 1981-86 and 1996-2001. High Yielding Varieties of rice seeds, farmers attitude and physical factors responsible for the change in rice concentration during the period under study.

Ragi

Table 1.1 and map 1.2 B shows that high to moderate level of ragi concentration was found in Devgad tahsil, whereas high to low level of ragi concentration was observed in Kankavali tahsil during the period under study. No change in ragi concentration was registered in Vaibhavwadi, Sawantwadi, Malvan, Vengurla and Kudal tahsils.

Vari

High to low level of vari concentration was noticed in Kankavali tahsil, whereas low to high level of same crop concentration was recorded in Devgad tahsil. Low to moderate level of vari concentration was found in Malvan and Kudal tahsils during the same period. (map 1.3 B).

Other cereals

High to low level of other cereals concentration was noticed in Vaibhavwadi tahsil while low to high level of the same was observed in Kudal tahsil. Moderate to high level of other cereals crop concentration was observed in Malvan tahsil and low to moderate level of the same was seen in Devgad, Vengurla and Sawantwadi tahsils during the period of investigation. No change in other cereals crop concentration was noticed in Kankavali tahsil during the period 1981-86 and 1996-2001 (map 1.4 B).

Pulses

Table 1.1 and map 1.5 B exhibits that no change in pulses concentration was recorded in Devgad tahsil whereas high to low level of change was recorded in Vaibhavwadi tahsil during period under study. High to moderate level of pulses concentration was noticed in Kankavali tahsil, while moderate to high level of same crop concentration seen in Malvan tahsil. Low to moderate level of pulses concentration was registered in Kudal and Sawantwadi tahsils during the period between 1981-86 and 1996-2001.

Sugarcane

No change in sugarcane concentration was noticed in Sawantwadi, Devgad, Malvan and Kudal tahsils, whereas high level to low level change was recorded in Kankavali tahsil. High to moderate level of sugarcane concentration change was showed in Vaibhavwadi tahsil while low to high change was noticed in Vengurla tahsil during the period of investigation (map 1.6 B).

Spices and Condiments

Low to moderate level of spices and condiments crop concentration change was recorded in Vaibhavwadi tahsil, whereas moderate to low level change was experienced in Devgad and Malvan tahsils between 1981-86 and 1996-2001. No change in this crop concentration was observed in Vengurla, Sawantwadi, Kankavali and Kudal tahsils during the period under investigation (map 1.7 B).

Fruits and Vegetables

It is clear from map 1.8 B and table 1.1 that no change in fruits and vegetables crop concentration was recorded in Vengula, Vaibhavwadi, Malvan and Kudal tahsils, whereas high to low level of fruits and vegetables concentration was noticed in Sawantwadi tahsil between 1981-86 and 1996-2001. Moderate to high level of fruits and vegetable concentration change was observed in Devgad tahsil while low to moderate change was noticed in Kankavali tahsil during the period of investigation.

Oilseeds

There have been observable features which show that no change in oilseeds concentration was registered in all the tahsils during the period of investigation (map 1.9 B).

Fodders

It is clear from table 1.1 and (map 1.10 B) no change in Vaibhavwadi, Malvan, Vangurla, Kundal and Sawantwadi tahsils in fodder crop concentration during the period of investigation. High to moderate level of fodder change of concentration was recorded in Kankavali tahsil whereas moderate to low level of same crop concentration change was observed in Devgad tahsil during period under study.

Concluding remarks

The spatial variations in the degree of crop concentration area are found to be the result of the different interaction such as physiographic climatic,

hydrological, socio-economic and technological factors in organizational effect of the study region. Sindhudurg district is highly favorable for growing a large number of fruits like mango, cashew nut, areca nuts etc. Fruits and vegetable in the study region play an important role in view of their export potentials as well as domestic requirement and employment generation. Socio-economic, technological factors and farmers personal decisions are the fundamental factors responsible for the crop concentration in the study region.

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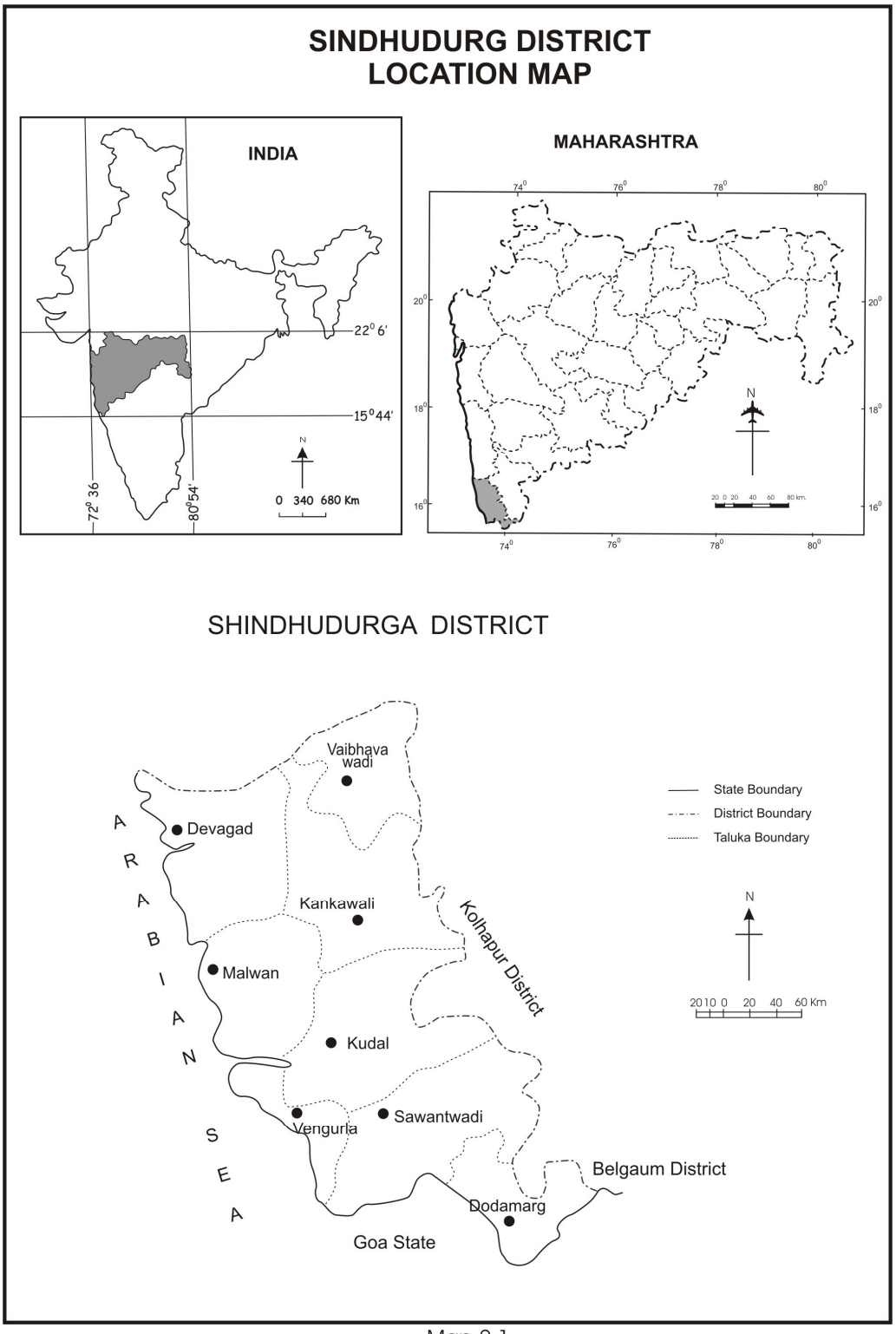


Map 2.1

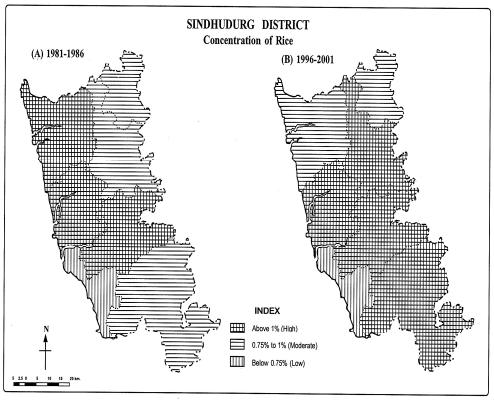
Map 1.0 Location map Sindhudurg District

Table 1.1- Tahsil wise Crop Concentration in Sindhudurg District

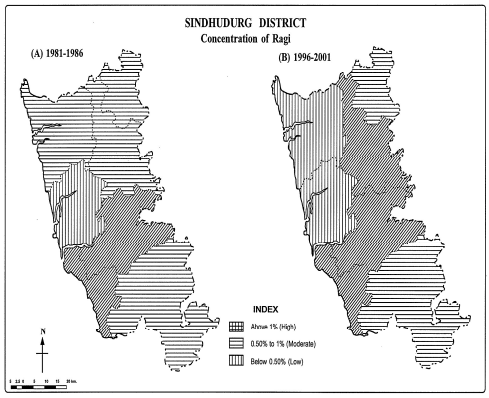
Sr. no.	Tahsil	Year	Rice	Ragi	Vari	Oth.Cereals	Pulses	Sugarcane	Spi & Candi	Fru.& Veg	Oil seeds	Fodders
1	Devgad	1981-86	1.00	1.52	0.95	0.55	1.47	0.07	1.14	1.42	0.42	1.46
		1996-01	0.85	0.94	2..36	1.00	1.44	--	0.71	1.61	0.58	--
2	Vaibhavwadi	1981-86	0.85	1.30	4.64	1.94	1.63	3.36	0.71	--	0.35	3.18
		1996-01	0.82	2.09	3.93	0.72	0.58	1.30	0.82	0.19	0.52	6.95
3	Kankavali	1981-86	0.91	1.25	2.55	2.27	1.94	2.15	0.22	0.19	0.35	3.10
		1996-01	1.03	0.28	0.66	2.01	1.00	0.83	0.13	1.00	0.59	1.70
4	Malvan	1981-86	1.07	0.67	0.78	1.43	1.23	0.10	0.96	0.67	1.46	0.58
		1996-01	1.05	0.67	1.41	1.70	1.44	--	0.54	093	1.35	--
5	Vengurla	1981-86	0.72	0.48	0.09	0.06	0.62	0.03	3.00	2.20	3.10	0.22
		1996-01	0.66	0.35	0.63	0.92	0.57	2.24	2.68	1.57	2.09	0.21
6	Kudal	1981-86	1.35	0.29	0.21	0.17	0.67	0.33	0.52	0.69	0.56	--
		1996-01	1.27	0.34	1.00	2.53	0.97	--	0.63	0.64	0.83	0.27
7	Sawantwadi	1981-86	0.89	1.50	0.26	0.48	0.35	3.11	1.50	1.71	1.16	0.09
		1996-01	1.01	2.33	0.51	1.27	0.87	4.33	2.16	0.96	1.14	0.02

Source : Socio-Economic Abstract of Sindhudurg District, Computed by the researcher.

Tahsil wise Crop Concentration in Sindhudurg District



Map 1.1



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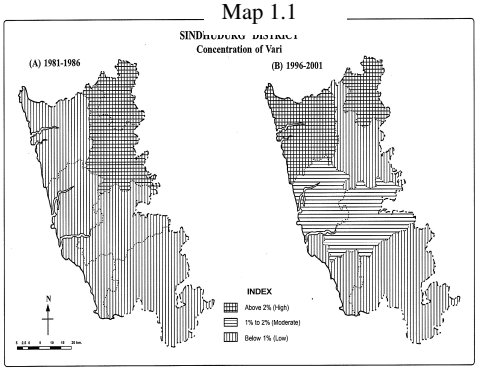

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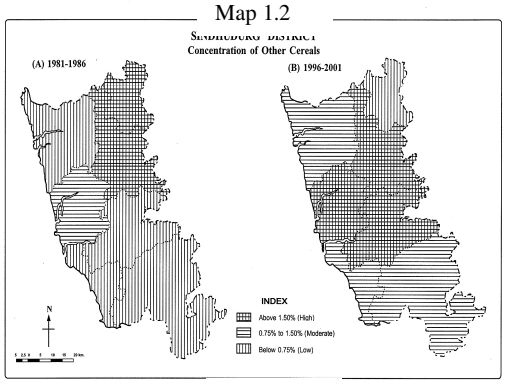

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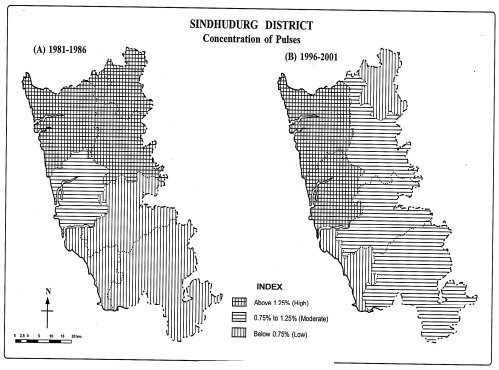

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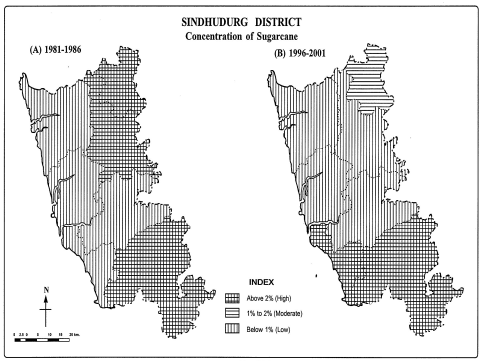

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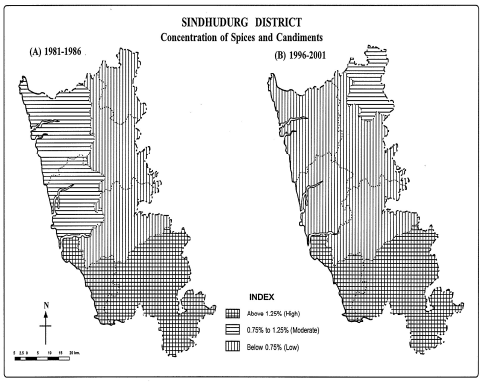

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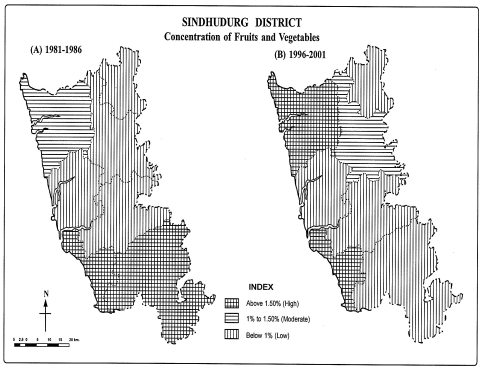
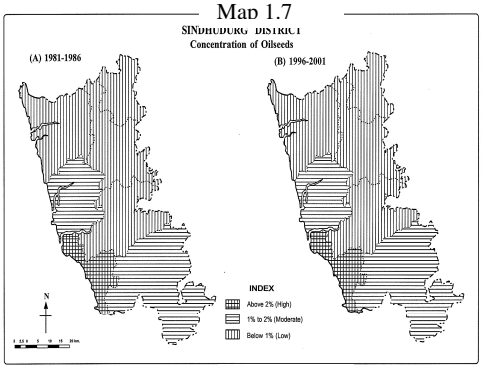
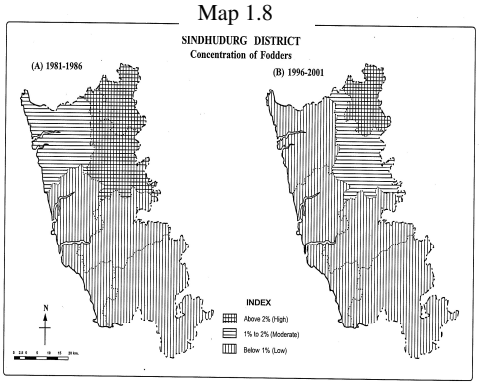


Map 1.8



Map 1.9



Map 1.10