

A Delineation of Crop Diversification of Kati Circle in Indapur Tahsil (Pune District)

Phalphale A. K.

Arts, Science & Commerce College, Indapur, Dist-Pune, Maharashtra, India

Abstract

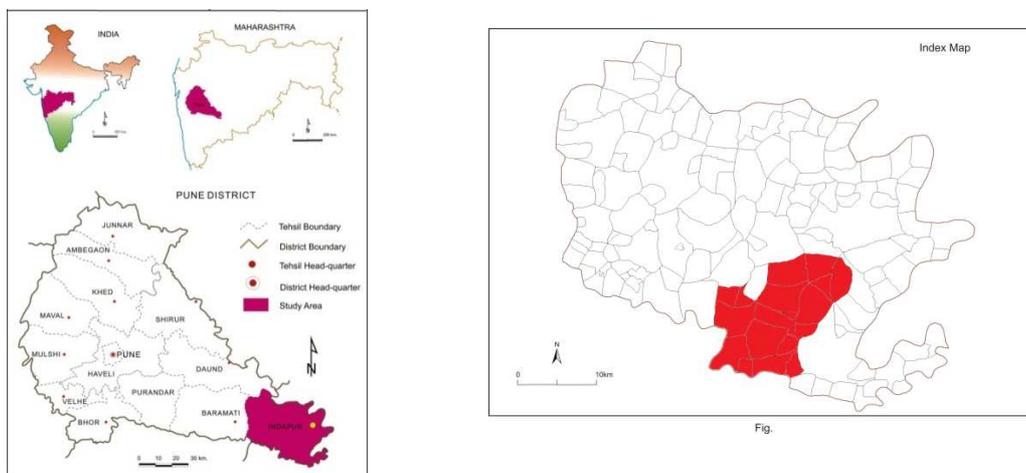
In this paper an attempt has been made to analyze crop diversification in study area. Ten major crops have been considered for analysis. Crop diversification is one of the technique delineating agricultural regions. The factors like rainfall and irrigation affect crop diversification. The study area though experiences semi-arid climate, has the irrigation facilities due to canal and backwater of Ujani dam. The primary and secondary data are collected and crop diversification is done using Gibb's Martin Index.

1.1 General Introduction

The agriculture is a basic activity of human beings since ancient period. Agriculture contributes 27 percent to India's total national income. 62 percent population is associated in the agriculture activity and 90 percent of rural population is engaged in agricultural and allied activities. Agriculture provides raw materials to small as well as large scale industries and much of export items. (Davis, 1982) Agro-based industries give output and employment to many people. Rainfall is vital and instrumental in case of Indian agriculture. The present paper is attempted to study the landuse pattern in Indapur tahsil in Pune district for its better landuse planning. The regional survey of landuse and its mapping is made by Patrick Geddes, Later, on Late L. D. Stamp in Britain (1930). This is perhaps, the first attempt to survey the land. Many geographers, economists and planners have further attempted for landuse planning. The Indapur tahsil is one of the tahsils in Pune district consisting of 143 villages and only three urban settlements. Indapur tahsil is situated in South-east side of Pune district; it lies entirely in the Bhima-Nira basins. The present study has attempted to study the crop diversification of Kati Circle in Indapur tahsil (Pune district) for its better landuse planning.

Study Area

The Kati Circle is one of the circles in Indapur tahsil consisting of 18 villages. Geographically, this area extents from 18°02'43'' to 18° 15'47'' North latitudes and 74°55'57'' to 75°10'01'' East longitudes. The study area experiences semi-arid climate. April, May and June are the hottest months with maximum mean temperature of 40° centigrade. Temperature gradually reduces in December and January with minimum mean temperature 12 ° centigrade. The medium black and deep black soils appear within study area. The soil fertility encourages growing various crops like Sugarcane, Jawar, Bajra, Wheat, Vegetables etc.



Objectives

- i) To identify Crop diversification of study area.
- ii) Suggesting solutions for better landuse in study area.

Data Sources

The present study is based on primary data. Primary data have obtained from the questionnaires. The questionnaires cover aspect like crop landuse, farmers' education, income from various sources and problems regarding agriculture and allied sectors. Besides this information concerned Talathi and Sarpanch were contacted to get more information of these villages. The data regarding major ten crops were obtained for the year 2011 at village level for 18 villages through questionnaires. These crops include jawar, wheat, sugarcane, bajara, corn, fodder crops, pulses, oil seeds, fruits and vegetables. The data collected were then converted into percentage.

Methodology

The following methods are used for the study

. Crop Diversification

Gibb's Martin Index has been applied the Crop Diversification and computed for 18 villages in Kati Circle (Indapur tahsil). Formula-

$$\text{Index of Diversification} = 1 - \frac{\sum x^2}{(\sum x)^2}$$

Whereas: X = Percentage of total cropped area occupied by each crop or Hectare age under individual crop.

Crop Diversification

Crop diversification is one of the technique delineating agricultural regions. Crop diversification measured by relating number of crops grown to the percentage of area occupied by each of them in a region. This means more the number of crops higher is the diversification. In contrast, if only one or two crops are grown, diversification is least. The term crop specialization indicates cultivation of fewer numbers of crops and crop diversification implies rising a variety of crops form the soil. The keener the competition the higher the magnitude of diversification and lesser the diversification the grater will be the trend towards specialization or monoculture farming where emphasis is on one or two crops. Crops are diversified in the field due to erratic nature of rainfall and insufficient irrigation

Result & Discussion

The table shows the index of crop diversification of Kati Circle in Indapur tahsil

Index of Diversification

Sr. No.	Village	Index of Diversification
1	Varkute Kh	0.45
2	Kati	0.27
3	Jadhavwadi	0.23
4	Sarafwadi	0.18
5	Ghorpadwadi	0.23
6	Nirwangi	0.22
7	Zagdewadi	0.25
8	Pandharwadi	0.42
9	Vadapuri	0.21
10	Shetphal Haveli	0.21
11	Reda	0.17
12	Bhodani	0.19
13	Lakhewadi	0.28
14	Redani	0.31
15	Khorachi	0.27
16	Boratwadi	0.23
17	Chakati	0.23

18	Pithewadi	0.21
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Fig. 1 presents crop diversification pattern in Kati Circle. (Indapur tahsil) The maximum crop diversification appears in village Takli & Ajoti (0.72) located in North-east and lowest at village Narutwadi (0.34) in West parts in study area. It is seen that whole study area is divided into three crop diversification regions follows as :

- i) Area of high crop diversification. (0.41 & Above)
- ii) Area of moderate crop diversification (0.21 to 0.40)
- iii) Area of low crop diversification (0.00 to 0.20)

Crop Diversification Regions

Types of Diversification	Value	No. of Villages	Percentage of Villages	Gross Cropped Area	Area in Percentage
High Diversification	0.41 & Above	02	11.11	2416.30	01.49
Moderate Diversification	0.21 to 0.40	13	72.22	157025.10	97.16
Low Diversification	0.00 to 0.20	03	16.66	2159.60	01.33

Source: Computed by Researcher

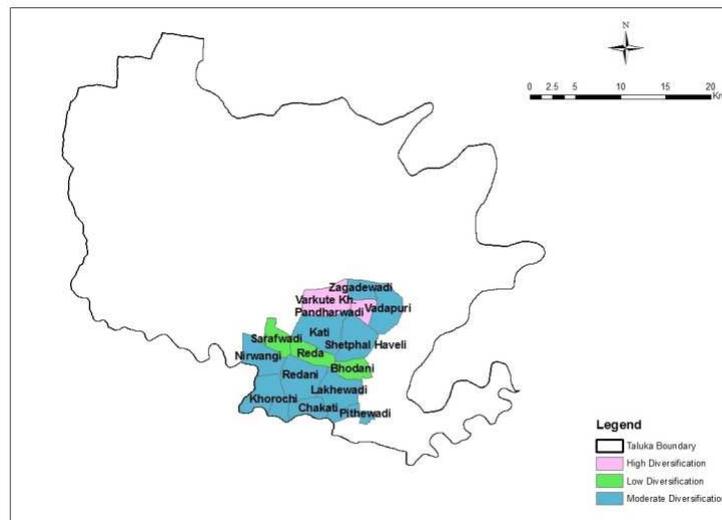


Fig. 1

It is observed that smallest area appears in the high crop diversification covering 11.11 percent villages (02) & low crop diversification covering 16.66 percent villages (03) in In Kati Circle. (Indapur tahsil)

Moderate diversification is found thirteen villages out of 18 villages in Kati Circle. High diversification is found in 02 villages namely, Varkute Bu. & Pandharwadi have identified in North-east part in study area. Low diversification is found in Reda, Bhodani and Sarafwadi villages. The area in percent of moderate diversification region is more than high & low diversification.

Conclusion & Suggestions

- 1) The majority of the villages in the study area show moderate crop diversification.
- 2) The cultivation of sugarcane crop in village Nirwangi can be replaced by sugar beet as the sugar beet processing facility is available in tahsil. By replacing sugarcane the problem of soil salinity can be overcome and more income can be generated from saline-alkali soil by growing other crops.
- 3) If the irrigation facilities are made available other crops will sustain in moderately diversified villages like Vadapuri, Jadhavwadi and Ghorpadwadi.

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