Crop Combination in Sangli District (Maharashtra): A Geographical Analysis

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Abstract
Agriculture being a basic activity plays a vital role in Indian economy, but still it gambles with the monsoon, causes high fluctuations in production. Inadequate rainfall of monsoon and frequent drought conditions hampered the development of agriculture, particularly, in drought prone area of Maharashtra.

In this paper the Sangli district, which falls, in drought prone area of Maharashtra is selected for study. The major objective of this paper is to find out and analyze the crop combination region. Rafiulha’s technique, which is known as ‘Maximum positive deviation method, has used to identify the crop combinations. In the eastern part of study area, where generally the rain feed crops are the major crops, cropping pattern is one crop to three-crop combination.

Introduction
In Indian context, agricultural is a basic activity, which accounts one fourth of the National income and provides employment to 65% of working population, and still Indian agriculture gambles with the monsoon as inadequate water resources irrigate about 40% area. The Indian agricultural is totally depending upon the southwest monsoon, which is uncertain, causes high fluctuations in the agricultural production.

Though the state of Maharashtra is known as a most urbanized & having remarkable development in industrial sector, yet the agricultural activity remains fundamental one. However inadequate rainfall of monsoon and frequent drought conditions hampered the development of agriculture, particularly in the drought prone areas of Maharashtra.

The Sangli district falls in rain shadow zone of the Maharashtra, where agricultural as well as animal life is mostly affected by the frequent occurrence of the droughts. Agriculture is the main economic activity of this region.

The Study Region
Sangli district is one of the southern most districts of Maharashtra state. It is situated between 16°45’and 17°33’ north latitude and the 73°41’ and 75°41’ east longitude. It is bounded by Solapur and Satara districts in the north, Bijapur district in the east, Belgaum district in the south and The Ratnagiri district to the West {Fig. 1}. Total area of the district is 8572 Sq. km. The district headquarter is Sangli. 731 villages and 8 towns are in the district. 629200 hectares of area is under agriculture in Sangli district and support population of 2581835 in 2001. Administratively the Sangli district is divided into ten tehsils namely Miraj, Walva, Palus, Shirala, KavatheMahankal, Khanapur, Kadegaon, Tasgaon, Jath and Atpadi.

Objectives:
Main objective of the paper is to find out and analyse the crop combination of study region.

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Research Methodology
The primary and secondary data have been collected from different sources. The primary data is collected through interview technique and discussions method. Secondary data is collected from published and unpublished reports of Government and Non-Government Organizations. The tehsil is considered as an areal unit of investigation. Percentage of area under various crops in both *Kharif* and *Rubbi* seasons is considered. Agricultural land use information on cadastral map, land record and field notes are also used for the study.

To understand the crop combination of the study area, following Raffiullha’s method has been used.

\[
d = \sqrt{\frac{\sum D_p^2 + D_n^2}{n^2}}
\]

Where
- \(d\) = deviation
- \(D_p\) = is the positive differences
- \(D_n\) = is the negative differences from the median value of the theoretical curve value
- \(n\) = No. of crops or functions.

Information and results are presented through Tables and appropriate diagrams. Obtained results by using the Raffiullha’s method are also shown in Table 1 and Fig. 2.

Analysis:
Soyabean is a dominant kharif crop. Soyabean is cash crop and important oil seeds. In this area due to good quality of soil, development of irrigation facilities, and sufficient annual rainfall, farmers choose and grown the soyabean crop. In the remaining part of Sangli district (in Jath, Atpadi, Kavathe Mahankal, Khanapur and some part of Tasgaon and Kadegaon tehsils), due to low and inadequate rainfall, poor quality of soil and very low irrigation facilities total agriculture is dependent on southwest monsoon and hence farmers grow the rain feed and traditional crops like *Kharif* Jowar, Rabbi Jowar, Bajara, Maize, Fodder, Tur, Gram and other pulses.

A) Mono Crop Region: Miraj, Walva, Palus, Shirala, Kavathe Mahankal and Khanapur tehsils have one crop region. Middle and western part of the study region has soyabean crop is dominant particularly Miraj (21%) Walva (37%) palus (28%) and shirala (24%) land under soyabean crop. In dry zone part of the study region particularly Kavathe Mahankal (37%) land under Rabbi Jowar and Khanapur (22%) land under Bajara crop, because farmers have cultivated mainly rain feed and traditional crop particularly Rabbi Jowar and Bajara.

B) Two crop region:
In this study region two tehsil (Kadegaon and Tasgaon) have two-crop combination region. In Kadegaon tahsil Kharif Jowar (46%), and soyabeat (21%) are the important crops. Tasgaon tehsil has Kharif Jowar (60%), soyabeat (11%) crops.

C) Three crop region:

The Jath and Atpadi tehsil have identified as three crop combination region. In Jath Rabbi Jowar (62%), bajara (25%), and Wheat (4%) are important crops. In Atpadi tahsil Bajara (48%) Rabbi Jowar (39%) Other pulses (4%) are dominant rain feed crops.

After the application of Rafiulhas maximum positive deviation method for understanding cropping pattern of the region it comes to know that six tehsil of the study area identified for one crop or monoculture region, two tehsil identified two crop combinations and two tehsil has three crop combination region (Table 1 & Fig.2)
Table 1
The Crop Combination in Sangli District

<table>
<thead>
<tr>
<th>Sr No.</th>
<th>Name of Tehsil</th>
<th>No of crop combination</th>
<th>Crops</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Miraj</td>
<td>Monoculture</td>
<td>S</td>
</tr>
<tr>
<td>2</td>
<td>Walva</td>
<td>Monoculture</td>
<td>S</td>
</tr>
<tr>
<td>3</td>
<td>Palus</td>
<td>Monoculture</td>
<td>S</td>
</tr>
<tr>
<td>4</td>
<td>Shirala</td>
<td>Monoculture</td>
<td>S</td>
</tr>
<tr>
<td>5</td>
<td>Kavathe Mahankal</td>
<td>Monoculture</td>
<td>R</td>
</tr>
<tr>
<td>6</td>
<td>Khanapur</td>
<td>Monoculture</td>
<td>B</td>
</tr>
<tr>
<td>7</td>
<td>Kadegaon</td>
<td>Two Crop</td>
<td>SK</td>
</tr>
<tr>
<td>8</td>
<td>Tasgaon</td>
<td>Two Crop</td>
<td>SK</td>
</tr>
<tr>
<td>9</td>
<td>Jath</td>
<td>Three Crop</td>
<td>RBW</td>
</tr>
<tr>
<td>10</td>
<td>Atpadi</td>
<td>Three Crop</td>
<td>BRP</td>
</tr>
</tbody>
</table>

Abbreviations – S= Soybean, B = Bajara, R = Rabi Jowar, K = Kharif Jowar, P= Other Pulses, W= Wheat
Conclusions:

1. Natural, socio-economic and other technological factors affect the cropping pattern of any area.

2. The Sangli district falls in a drought prone area which affects the cropping pattern resulting in a one crop to three crop combination.

3. Generally, the rain fed crops are the major crops in the eastern dry zone of the study area i.e. Kharif Jowar, Rubbi Jowar, Bajara, and other pulses.

4. The cropping pattern of this area hampered frequently through frequent drought conditions.

5. High percent of the cultivated land is under irrigation by means of wells, tube wells, tank irrigation, and canal. Specifically, middle and western parts of the study area and soyabean or sugar cane is the dominant crop.

References:


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