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CROP PRODUCTIVITY

6.1 INTRODUCTION

Agriculture is the most vital economic activity of man. It is the main provider of substance for human being in India. The country like India having predominance of agricultural activity along with over population, it is necessary to give more attention to spatial organization of agriculture. Some of the regions agriculturally more developed than other while some are backward. The understanding of existing level of productivity is essential for better planning management and development of the any agricultural region.

Many geographers have taken into consideration one or more features of agriculture and tried to regionalize it. In one of such studies Whittelessy (1936) has fixed the various agricultural sections of the world on the following conclusions such as crops, animals, fertility of soil processes, sale of agro products, mechanization the nature of agricultural settlement etc. He fixed thirteen agricultural regions of the world on the basis of the valuation of conclusions from subjective point of view. Kendall (1939) treated it as mathematical problem and he pointed out that the productivity coefficient are concerned only with the yield per acre but not in any way weight according to the volume of production Stamp (1958) applied Kendall’s ranking coefficient technique on an international level in order to determine agricultural efficiency of a number of countries as well as some major crops. Enyedi (1964) worked on geographical types of agriculture. He applied new method of crop productivity.

In India, among the main contributes Shafi M. (1960) worked on measurement of agricultural efficiency in Uttar Pradesh by applying the ranking confident method of Kendall tooling eight food crops grown in each
fourty eight tahsils of the state. Garg (1964) worked out the trends in agricultural development with respect to total cropped area, gross irrigated area and food grain production in two districts of Utter Pradesh. Deshpande (1964) have attempted to refine further Kendells ranking coefficient method. Sharma (1965), while defining the concept of agricultural productivity, has suggested various parameters on which it can be measured.

Tambad (1965) calculated the Spatio-temporal variation of agricultural productivity of Mysore State. Dayal (1984) worked on agricultural productivity of India in his world he divided India into different zones on the basis of productivity. Chaskar and et.al. (1987) calculated the efficiency of Vidarbha region of Maharashtra Patil (2002) studied the agricultural productivity in Uppar Bhima and Uppar Krishna basin. Apart from this there is lot of work done in Maharashtra at micro level.

The term ‘Productivity’ is regarded as “A ratio of the out pot to input in relation to land, labour, capital and over all resources employed in agriculture”. Bhatia (1967) defined agricultural efficiency as, “The aggregate performance of various crops in regard to their out put per acre.” Singh (1979) defined agricultural productivity as, “The quantity of returns from arable land”. Jasbir singh (1972) considered. “Productivity is the degree of which the economic, cultural, technical and organizational variables are able to exploit the biotic resources of the area for agricultural production”.

The term agricultural productivity is both, dynamic, relative and complex. Various scholars have developed different methods of the measurement of productivity. Kendall has suggested four methods to suggest the productivity such as productivity coefficient, ranking coefficient, value coefficient and energy co-efficient. Bhatias method deals yield and magnitude of area under various crops. M. Shafi used the standard Nutrition units as an
approach to measure agricultural productivity. Enyedi calculated an index of productivity for determine the levels of productively.

The present study focus on computing the crop productivity of Raigarh district having diversity in physical relief and soil types. Tahsil is the basic unit of investigation. Rice, Nachni, Pulses and oil seeds are the main crops were studied for computing the productivity. The productivity index is shown in Table 6.1. After taken a review of all methods, Enyedi’s method is selected to compute crop productivity for Raigarh district due to its accuracy.

The spatial distribution of productivity for every crop for the year 2000-01, was computed mapped and interpreted the text. The Enyedi’s method of crop productivity is as follows.

\[
\text{Productivity Index} = \frac{y}{T} \times 100
\]

Where \( y \) = Production of the respective crop in the unit area.

\( Y_n \) = Total production of the crop in entire region.

\( T \) = Area under selected crop in a unit area.

\( T_n \) = Area under selected crop in entire region.

6.2 PRODUCTIVITY OF RICE

Rice is a major crop commonly observed in all tahsils of Raigarh district. The climate, rainfall, soil type and physiography influenced on productively of Rice.

Highest productively has recorded at Khalapur tahsil (194.52) and lowest was seen in productivity decreased towards the south part of the district. Shrivardhan tahsil with 93.83.

Very high productivity has recorded in Khalapur (994.52) and Panvel tahsil (113.59) in north central part of the district. These tahsils has maximum
plain land and small amount of irrigation. High productivity is not seen in the district.

Moderate productivity (94 to 95) had observed in central and North eastern tahsils namely Karjat, Pen, Roha, Mangeen.

Table 6.1

Raigarh District

Index of Productivity of Major Crops

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Tahsil</th>
<th>Rice Index Value</th>
<th>Nachni Index Value</th>
<th>Pulses Index Value</th>
<th>Oil seeds Index Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Uran</td>
<td>94.88</td>
<td>---</td>
<td>90.17</td>
<td>70.17</td>
</tr>
<tr>
<td>2</td>
<td>Panvel</td>
<td>113.39</td>
<td>98.78</td>
<td>99.40</td>
<td>100.19</td>
</tr>
<tr>
<td>3</td>
<td>Karjat</td>
<td>94.19</td>
<td>99.51</td>
<td>78.58</td>
<td>99.74</td>
</tr>
<tr>
<td>4</td>
<td>Khalapur</td>
<td>193.52</td>
<td>99.90</td>
<td>100.92</td>
<td>105.35</td>
</tr>
<tr>
<td>5</td>
<td>Pen</td>
<td>94.36</td>
<td>99.51</td>
<td>103.66</td>
<td>98.69</td>
</tr>
<tr>
<td>6</td>
<td>Alibaug</td>
<td>93.85</td>
<td>19.95</td>
<td>103.17</td>
<td>97.65</td>
</tr>
<tr>
<td>7</td>
<td>Murud</td>
<td>93.92</td>
<td>---</td>
<td>101.71</td>
<td>101.26</td>
</tr>
<tr>
<td>8</td>
<td>Roha</td>
<td>94.15</td>
<td>99.51</td>
<td>103.29</td>
<td>99.99</td>
</tr>
<tr>
<td>9</td>
<td>Sudhagad</td>
<td>93.98</td>
<td>100.51</td>
<td>158.60</td>
<td>99.42</td>
</tr>
<tr>
<td>10</td>
<td>Mangaon</td>
<td>94.29</td>
<td>101.60</td>
<td>102.26</td>
<td>99.45</td>
</tr>
<tr>
<td>11</td>
<td>Tala</td>
<td>94.01</td>
<td>98.25</td>
<td>103.63</td>
<td>97.32</td>
</tr>
<tr>
<td>12</td>
<td>Shrivardhan</td>
<td>93.83</td>
<td>100.56</td>
<td>101.68</td>
<td>98.26</td>
</tr>
<tr>
<td>13</td>
<td>Mhasala</td>
<td>93.89</td>
<td>101.06</td>
<td>103.02</td>
<td>99.34</td>
</tr>
<tr>
<td>14</td>
<td>Mahad</td>
<td>94.78</td>
<td>99.71</td>
<td>104.52</td>
<td>98.65</td>
</tr>
<tr>
<td>15</td>
<td>Poladpur</td>
<td>93.84</td>
<td>99.51</td>
<td>93.83</td>
<td>105.21</td>
</tr>
</tbody>
</table>

Source – Computed by Researcher on the basis of Socio-Economic Review and Statistical Abstract of Raigarh District, 2001

Uran tahsils. Low productivity was observed six tahsils, less than 94 in Mahad, Poladpur, Mhasala, Shrivardhan Murud and Sudhged tahsil. This region lies in uplifted and coastal area of the district. This region has lateratic soil on the south part and saline soil on the coastal land. Table 6.1 and Fig 6.1 shows the productivity of rice in the district.
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Fig. 6.1

RAIGARH DISTRICT

PRODUCTIVITY OF RICE (2000 - 01)

Legend
- Very High: Above 96
- High: 95 to 96
- Moderate: 94 to 95
- Low: Below 94

Fig. 6.1
Fig. 6.2
6.3 PRODUCTIVITY OF NACHNI

Nachni is one of the food grain crop mostly grown on the slopes on the Sahyadri mountain ranges in kharip season hardly requires the irrigation facility. The highest productivity of Nachni was observed at central hilly areas. The highest productivity was regarded in Mangaon tahsil (101.60). The lowest is recorded in Alibaug tahsil (19.95) due to coastal plain and saline land.

High productivity of Nachni in four tahsils namely Mangaon (101.60), Sudhagad (101.51), Shrivardhan (100.56) and Mahasala (101.06) Tahsils. Moderate productivity had observed in eight tahsils observed in northern four, central two and southern two tahsils ranging from 98 to 100. Panvel Karjat, Pen, Khalapur, Roha, Tala, Mahad and Poladpur tahsils are in moderate category.

Lowest productivity has recorded in Alibaug tahsil while Nachni crop is not taken in Uran and Murud tahsil. Table 6.1 and fig. 6.2 shows the productivity of the region.

6.4 PRODUCTIVITY OF PULSES

Gram, Mung, tur, wal, chavli and black gram are the major pulses observed in the Raigarh district taken in rabbi season on limited irrigation. Gram is the crop is mostly taken in the month of December on the available of dew. Central eastern part had high productivity while northern and southern tahsils had very low productivity. Remains central part shows the moderate productivity. The highest productivity of pulses had observed is Sudhagad tahsil (158.60) while lowest productivity is observed in Karjat tahsil (93.83).

High productivity had observed in Sudhagad tahsil. Moderate productivity is observed in ten tahsils ranging from 100 to 105 namely Pen, Khalapur, Alibaug, Murud, Roha, Mangaon, Tala, Shrivardhan, Mhasala and
RAIGARH DISTRICT
PRODUCTIVITY OF PULSES (2000 - 01)

Legend
High (Above 105)
Moderate (100 to 105)
Low (95 to 100)
Very Low (Below 95)

Fig. 6.3
Mahad tahsils. Low productivity (95 to 100) is recorded in Panvel tahsil (99.40) and very low (less than 95) is observed in Karjat and Poladpur tahsil, the hilly areas of the district. Table 6.1 and Fig. 6.3 display the pattern of productivity of pulses in the region.

6.5 PRODUCTIVITY OF OIL SEEDS

Ground nut, sesames and linseed are the main oil seeds grown on the plateau and plain region of the district oil seeds are grown in Kharip season with limited irrigation. Highest productivity of oil seeds has recorded in Khalapur tahsil (105.35) and the lowest was recorded in Uran tahsil (70.19).

High productivity has observed in four tahsils (Above 100) in Khalapur, Panvel, Poladpur and Murud tahsil due to plain land and irrigation. Moderate productivity had observed in nine tahsils namely Karjat, Pen, Alibaug, Sudhagad, Roha, Mangaon, Mhasala, Shrivardhan and Mahad tahsils. Low productivity (Below 98) is observed in Uran tahsil due to saline land and Fala tahsil due to rough topographical condition.
RAIGARH DISTRICT
PRODUCTIVITY OF OIL SEEDS (2000 - 01)

Legend
- High (Above 100)
- Moderate (98 to 100)
- Low (Below 98)

Fig. 6.4
REFERENCES
