CHAPTER - V

AGRICULTURAL PATTERN
Cropping pattern in India has undergone an evolutionary process. In subsistence farming when there was no commercialization there was hardly any surplus for sale, as the production was mainly used for household consumption. Most small farms belonged to this category.

The base of classification in which the cropping pattern could be felted are rain fed farming and irrigated farming. The system of mixed cropping is found superimposed over these two basic systems in varying degrees throughout the country.

It should be noted at the outset that landuse and cropping pattern have a close bearing on a) Rainfall, b) Irrigation and command development, c) Soil and moisture conservation, d) Crops, animal husbandry, seeds, fertilizers and manures, plant protection chemicals, e) Farm power and associated implements and machinery. While considering landuse and cropping pattern, an integrated and broad view of the above mentioned factions have to be taken.

**Cropping Pattern of Dhamtari District:**

Cropping pattern means the proportion of area under various crops at a point of time. The crop statistics are used to denote cropping pattern. It is however, a dynamic concept as no cropping pattern can be good and ideal for all times to come. The cropping pattern differs from micro to micro region, both in space and time and is governed largely by the physical, cultural, technological factors. For the purpose of agricultural regionalization and planning, it is necessary to divide the region into homogeneous regions on some well defined basis. There can be a number of physical, climatological and agronomic criteria on which cropping pattern can be made.
Table No. - 5.1
Crop Production of Dhamtari District (in kg/hectare)

<table>
<thead>
<tr>
<th>Block Name</th>
<th>Cereals</th>
<th>Pulses</th>
<th>Oilseed</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>T %</td>
<td>T %</td>
<td>T %</td>
<td>T %</td>
</tr>
<tr>
<td>Dhamtari</td>
<td>1595</td>
<td>1947</td>
<td>21.28</td>
<td>19.47</td>
</tr>
<tr>
<td>Kondal</td>
<td>1595</td>
<td>1947</td>
<td>21.28</td>
<td>19.47</td>
</tr>
<tr>
<td>Nagri</td>
<td>1595</td>
<td>1947</td>
<td>21.28</td>
<td>19.47</td>
</tr>
<tr>
<td>Total</td>
<td>1595</td>
<td>1947</td>
<td>21.28</td>
<td>19.47</td>
</tr>
</tbody>
</table>

Source: District statistical handbook, 2008.

Table No. 5.1 shows the area, production and per hectare yield of food grains and major non-food grain crops. It will be seen from the table that food grain crops are dominant over the region. Percent of Paddy production is very high. Highest Paddy production is seen in Dhamtari district 1660 kg/hectare. Lowest in Nagri 1486 kg/hectare. Mahanandi flows under the Dhamtari district. So doab region is built in the Tehsil and also fertile land is available for Paddy cultivation in this region. In respect to Dhamtari, Nagri is situated in the uper part or plateau region. Hilly area soil is low fertile as compare to Mahanandi doab region so the production of crop naturally decreases. Among the cereal Paddy, Wheat, Maize, Kodo, Kutki are cultivated only at Nagri block among four blocks of Dhamtari district. Different pulses are cultivated here. These are gram, Teiura, Urad. Among them tiora and gram are the most dominant pulses. Gram is Cultivated in Rabi season. After the Kharif season land are decrease there fertility for the produce crop. Then gram is sown for supplying soil nitrogen and nutrient
DHAMTARI DISTRICT
PATTERN OF AGRICULTURE

A View of Paddy Cultivation at Achhali Village

A View of Interculture at Luge Village

A View of Plantation at way of Parkanda village
in soil. Gram (1200 kg.) and Teora (956 kg.) production in Dhamtari block are also observed high in proportion.

Different oil seeds are cultivated in this district. Proportion of non-food crops are low. Groundnut, linseed, Til, Soyabeen, Sunflower, Mustered etc. oilseeds are cultivated in this district.

**Crop Combination Region of Dhamtari District:**

The study of crop combination, regions constitute is an important aspect of agricultural geography as it provides a good basis for agricultural regionalization. The crops are generally grown in combinations and it is rarely that a particular crop occupies a position of total isolation from other crops in a given area unit at a given point of time. The distribution maps of individual crops are interesting and useful for planners, but it is even more important to view the integrated assemblage of the various crops grown in an area unit. For example, the demarcation of India into the Rice and Wheat regions does not explain the agriculturally significant fact that very often the wheat region also have a rice crop and vice versa or wheat is often grown with gram, lentil, mustard, rapeseed and sugarcane. For a comprehensive and better understanding of the agricultural mosaic of an agro-climatic region, the study of crop combinations is of great significance.

In recent years the concept of crop combination has engaged the attention of geographers and agricultural landuse planner. The studies have been made so far in this field range in approach from tropical to regional and vary in extent from small areas of minor political units to the entire country. The different methods applied in the delineation of crop combination regions can be summed up under two headings. The first method used to determined crop combination region is J.C. Weaver’s method. According to Weaver crops always exist in
association. For example in the corn belt, corn is not dominant crop. Weaver, therefore determined crop combination regions to the total cropped area. Then each percentage is considered against a standard norm and with the help of standard deviation, the right crop combination is determined. There are various method of determined crop combination these are Seat, Peter Scot, Arbitary, Jonson’s, Weaver, Doi’s method. Among them researchers selected J.C.Weaver’s and Doi’s method for the calculation of crop combination region.

In oil seed production Kurud block is occupied large proportion in this respect to other blocks. Linseed 415 kg/h and Til 294 kg/h, Soyabean 1230 kg/h production are shown by table no.5.1. In other crops different types of vegetable are cultivated and other food grain and non-food grain crops are cultivate here.

Cropping pattern of Dhamtari shows a close correlation to the rainfall pattern. The choice of crop depends on the amount and distribution of rainfall, but there are exceptions to this general principle, as there are areas which have scanty rainfall with the help of irrigation crops requiring large quantities of water are grown. The pattern of cropping should confirm to the agroclimatic conditions. Production depends completely on fertility of soil, climate condition, use of fertilizer, and use of Hybrid seed. Irrigation and modern technology production of Dhamtari is not very high because :-

i) Low amount of per capita land.

ii) Uneven distribution of land.

iii) Huge amount of deforestation.

iv) Rainfall is not fulfil the demand of water.

v) Canal are non-perennial in nature.

vi) Traditional agro system are used.
DHAMTARI DISTRICT
PATTERN OF AGRICULTURE

A View of Cabbage Cultivation at Kareli Chhoti Village

A View of Vegetable Cultivation at Luge Village

A View of Onion Cultivation at Luge Village
vii) Pressure of population agricultural land converted industrial land.

viii) Environmental pollution and many critical diseases of crop.

<table>
<thead>
<tr>
<th>Crop Name</th>
<th>Traditional Area (T) in %</th>
<th>Observed Area in % (A)</th>
<th>Difference (T-A)-d</th>
<th>d²</th>
<th>(\sum d^2)</th>
<th>(\frac{\sum d^2}{n})</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paddy 100</td>
<td>100</td>
<td>71.53</td>
<td>28.47</td>
<td>810.54</td>
<td>810.54</td>
<td>810.54</td>
</tr>
<tr>
<td>Paddy 50</td>
<td>50</td>
<td>71.59</td>
<td>21.53</td>
<td>463.54</td>
<td>1969.76</td>
<td>984.88</td>
</tr>
<tr>
<td>Teora 50</td>
<td>50</td>
<td>11.19</td>
<td>38.81</td>
<td>1506.22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paddy 33</td>
<td>33</td>
<td>71.53</td>
<td>38.53</td>
<td>475.68</td>
<td>2671.53</td>
<td>890.51</td>
</tr>
<tr>
<td>Teora 33</td>
<td>33</td>
<td>11.19</td>
<td>21.81</td>
<td>711.29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gram 33</td>
<td>33</td>
<td>06.33</td>
<td>26.67</td>
<td>1506.22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paddy 25</td>
<td>25</td>
<td>71.53</td>
<td>46.53</td>
<td>2165.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teora 25</td>
<td>25</td>
<td>11.19</td>
<td>13.81</td>
<td>190.72</td>
<td>3150.81</td>
<td>787.50</td>
</tr>
<tr>
<td>Gram 25</td>
<td>25</td>
<td>06.33</td>
<td>18.67</td>
<td>348.57</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linseed 25</td>
<td>25</td>
<td>03.87</td>
<td>21.13</td>
<td>446.48</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paddy 20</td>
<td>20</td>
<td>71.53</td>
<td>51.53</td>
<td>2655.34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teora 20</td>
<td>20</td>
<td>11.19</td>
<td>08.81</td>
<td>77.62</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gram 20</td>
<td>20</td>
<td>06.33</td>
<td>13.67</td>
<td>186.87</td>
<td>3487.66</td>
<td>697.53</td>
</tr>
<tr>
<td>Linseed 20</td>
<td>20</td>
<td>03.87</td>
<td>16.13</td>
<td>260.18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mustered 20</td>
<td>20</td>
<td>02.46</td>
<td>17.14</td>
<td>307.65</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From the table no.-5.2 it would clear that this region is monocultural region according to J.C. Weaver method. There are five main important crop regions in Dhamtari district. These regions are:

1. Paddy region
2. Paddy Teora region
3. Paddy Teora Gram region
4. Paddy Teora Gram Linseed region
5. Paddy Teora Gram Linseed Mustered region

We can compare between Weaver's and Doi's method in this respect. According to Doi's method the calculation value increases crop combination. But the opposite sight has been seen in Weaver's method. The calculation value decreases toward increase of crop combination region. The deviation of the actual percentages from the theoretic curve is seen to be the
lowest for one crop combination. This result established the identity in the basic combination for the district as p.

**Agricultural Intensity of Dhamtari District:**

"The higher the index of the intensity of cropping, the higher the land use efficiency and the lower the index the lower the land use efficiency and less utilized or under utilized the area sown".

- Singh (1976).

The agricultural intensity refers to the number of crops grown on the same area in any one agricultural year, the index of cropping is 100 percent and it can be termed as single cropping, if two crops a year are produced as kharif and rabi crops, the intensity index will be 200 percent and it may be termed double cropping.

Agricultural intensity, extent the maturity and increase in the yield from the existing cultivated area are issues of great significance in Dhamtari district. These needs serious though by the planners and all those concerned with agricultural development. Because the problems of under use the net area sown, under productivity per unit area and the risk of crop failures are taxing the rural society every where. It would be a useful gain to overcome some of those problems in the near future.

The various geographer various method used to determine the agricultural intensity. Such as R.R. Tripathi (1970), R.B.Singh, Y.G. Joshi and Tyagi all the expert have given valuable contribution. The most favourable method is famous agriculture geographer R.R. Tripathi (1970). We used this formula from the tabulate of agricultural intensity.

**Formula,**

\[
I = \frac{GCA}{NSA} \times 100
\]

**Where,**

- **I** = Index of Agricultural Intensity
- **GCA** = Gross Cropped Area
- **NSA** = Net Sown Area
Table No. 5.3
Agricultural Intensity of Dhamtari District

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of Blocks</th>
<th>Agricultural Intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dhamtari</td>
<td>169.95</td>
</tr>
<tr>
<td>2</td>
<td>Kurud</td>
<td>182.13</td>
</tr>
<tr>
<td>3</td>
<td>Magarlod</td>
<td>148.96</td>
</tr>
<tr>
<td>4</td>
<td>Nagri</td>
<td>127.13</td>
</tr>
</tbody>
</table>

Table No. 5.4
Level of Agricultural Intensity Index in Dhamtari District

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Intensity Level</th>
<th>Index of Cropping Intensity</th>
<th>Name of Blocks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High Intensity</td>
<td>&gt; 180</td>
<td>Kurud</td>
</tr>
<tr>
<td>2</td>
<td>Medium Intensity</td>
<td>160 – 180</td>
<td>Dhamtari</td>
</tr>
<tr>
<td>3</td>
<td>Low Intensity</td>
<td>140 – 160</td>
<td>Magarlod</td>
</tr>
<tr>
<td>4</td>
<td>Very Low Intensity</td>
<td>&lt; 140</td>
<td>Nagri</td>
</tr>
</tbody>
</table>

The intensity of agriculture in Dhamtari, divided into four levels. These are discussed below—

1. **High Intensity Area:**
   
   High intensity of crop is found in Kurud block of Dhamtari. Because of fertile soil, well irrigation system in Kurud block, intensity is high.

2. **Medium Intensity:**
   
   Medium intensity found in Dhamtari block. These areas lying near the Mahanadi doab region. Soil is fertile but some cottage industries developed here.

3. **Low Intensity:**
   
   The low intensity area of Dhamtari is Magarlod Block. Here farmers are not adopting modern techniques and water supply of cropping land is not proper way.

4. **Very Low Intensity:**
   
   Very low intensity of cropping observed in Nagri block. These areas lying on a plateau region some residential hills are observed here. Fertility of soil is moderate, irrigation system is not developed so the intensity of crop is very low.
Agricultural Efficiency of Dhamtari District:

Agricultural productivity is a relative term and it cannot be uniformly applied all over the world. The measurement of agricultural productivity is more complicated compared to other sectors of economy and it poses the basic problem of concept and definition. Sometimes it is considered to be synonymous of efficiency or overall effectiveness of a productive unit, while at others as ratio of output to resources expanded. Some have viewed productivity as all overall effectiveness of productive unit, be it a plant farm or company, while some have confined the use of term productivity to denote the ratio of output to the corresponding input of labour. But however, all the apparently conflicting and different interpretations have one common characteristics i.e. someone ability to produce more economically and efficiently. Therefore, agricultural productivity could be defined as the ratio of output to input in relation to land, labour, capital and overall resources employed in agriculture.

Agriculture is the ministry of Indian economy. It provided 35 percent of the “Net National Product” in the year 1989-90. Some year agricultural sector alone contributed Rs.3100/- crores through export earning. About 67 percent of the total Indian working force is directly or indirectly dependent on agriculture. In Chhattisgarh maximum population depend on agricultural production. In the study region this situation are generally shows.

“Among the physical factors which are combatively static in nature, relief, altitude, climate, and soil very important role. It is more so in developing countries where mechanization of agriculture has not yet taken place to a measurable extent. These factors explain more than three fourths of the total variation in the dependent variable”.

- Sabbiah and Ahmel (1980).

Agricultural efficiency means determination of crop production in per unit of land. There are various method used to determined the agricultural productivity. The methods are M.M. Khusera (1964), J.L. Buff (1967), Kendas
(1939), S.D. Stamp (1958), Sprey and Deshpandey (1964), S.S. Bhatia (1967), Mohammad Shafi (1972), Majid Hussain (1979) all the experts have given valuable contribution.

The method of agricultural efficiency index suggested by S.S. Bhatia (1967) has been used because of the availability of data of both area and production rate for the measure of agricultural efficiency in study area.

Formula,
\[
l_ya = \frac{y_c}{y_r} \times 100
\]

Where,
- \( l_ya \) = 'a' production index of crops
- \( y_c \) = 'a' per hectare production rate of crops
- \( y_r \) = 'a' per hectare production rate of total area of crops

Formula,
\[
E_i = \frac{l_ya \times c_a + l_yb \times c_b + \ldots l_yn \times c_n}{c_a + c_b + \ldots c^n} \times 100
\]

Where,
- \( E_i \) = Index of agricultural efficiency
- \( l_yb, l_yn \) = Production index of different crops
- \( c_a, c_b, c^n \) = Per hectares production of total area of different crops

Calculation of agricultural efficiency in survey are by the formula ascertained.

Data available for statistical booklet (2006) has been used in block level determine agricultural efficiency.

Table No. 5.5
Agricultural Efficiency of Dhamtari District

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of the blocks</th>
<th>Agricultural Efficiency (Ei)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dhamtari</td>
<td>148.70</td>
</tr>
<tr>
<td>2</td>
<td>Kurud</td>
<td>157.30</td>
</tr>
<tr>
<td>3</td>
<td>Magarlod</td>
<td>139.50</td>
</tr>
<tr>
<td>4</td>
<td>Nagri</td>
<td>130.00</td>
</tr>
</tbody>
</table>
DHAMTARI DISTRICT
AGRICULTURAL EFFICIENCY

INDEX

- High
- Medium
- Low
- Very Low

Fig No: 54
The level of agricultural efficiency index, we divide into four categories, viz. I) High Efficiency Zone, ii) Medium Efficiency Zone, iii) Low Efficiency Zone, iv) Very Low Efficiency Zone.

1. **High Efficiency Zone**

High efficiency zone found in Kurud block. These block situated near Mahanadi Basin. Irrigation system is very good because Mahanadi main canal network system developed here. Soil fertility is very high. Also modern agricultural techniques are used by farmers.

2. **Medium Efficiency Zone**

Dhamtari block is under this zone. In these block also irrigated system developed but town center and administrative work are dominant between Kurud and Dhamtari blocks small differences found in productivity. Mainly Matasi, Dorsa, Bhata type of fertile soil are found here.

3. **Low Efficiency Zone**

In Magarlod block low efficiency zone is found. Development of in these block not so high. These region also occupied good irrigation system. But in these block modern equipment are not use in large way.

4. **Very Low Efficiency Zone**

Very low efficiency zone is found in Nagri block. Productivity low because some portion of these region occupied by plateau and residential hills. Soil fertility and irrigation system not so good as compare to other blocks. In these block use of modern equipments and techniques very low because it is a tribal belt of Chhattisgarh.

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**Table No. 5.6**

Level of Agricultural Efficiency Index of Dhamtari District

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Efficiency Level</th>
<th>Index of agricultural Efficiency</th>
<th>Name of the blocks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High Intensity</td>
<td>&gt; 155</td>
<td>Kurud</td>
</tr>
<tr>
<td>2</td>
<td>Medium Intensity</td>
<td>145 – 155</td>
<td>Dhamtari</td>
</tr>
<tr>
<td>3</td>
<td>Low Intensity</td>
<td>135 – 145</td>
<td>Magarlod</td>
</tr>
<tr>
<td>4</td>
<td>Very Low Intensity</td>
<td>&lt; 135</td>
<td>Nagri</td>
</tr>
</tbody>
</table>
DHAMTARI DISTRICT
PATTERN OF AGRICULTURE

A View of Radish Cultivation at Kaleri Chhoti Village

A View of Chana Cultivation at Mulle Village

A View of Mustard Cultivation at Limara Village
Crop Diversification:

Crop diversification patterns, like that of crop concentration, have great relevance in the agricultural land use planning. The diversification of cropping patterns means rising a variety of crops for arable land, the keener the competition the higher the magnitude of diversification. In fact, it is obvious that greater the number of crops in a combination, the greater the degree of diversification. He assumed in his study that the maximum number of crops grown in a component areal unit are 10. Bhatia’s study, however, does not make it clear as to what was the lowest percentage considered. Ayyer modified Bhatia’s method and took into account only those crops which occupy at least one percent of the gross cropped area. Jasbir Singh adopted the crop diversification technique of Bhatia with the following modifications for the determination of spatial pattern of crop diversification. A far better method was proposed by Gibbs Martin.

\[
\text{Crop diversification Index} = \frac{\sum x^2}{(\sum x)^2}
\]

Where,

\(X = \) percentage of total cropped area occupied by each crop which occupy individually 5 percent or more

Table No. 5.7
Crop Diversification of Dhamtari District

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of the blocks</th>
<th>Crop Diversification Index (I)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dhamtari</td>
<td>0.85</td>
</tr>
<tr>
<td>2</td>
<td>Kurud</td>
<td>0.87</td>
</tr>
<tr>
<td>3</td>
<td>Magarlod</td>
<td>0.84</td>
</tr>
<tr>
<td>4</td>
<td>Nagri</td>
<td>0.86</td>
</tr>
</tbody>
</table>

Above table it would be say that as the value is relatively close to 1, the diversification is relatively high. If the value is not close to one, the diversification would be low. So in Dhamtari district crop diversification is high.

The main advantage of the study of crop diversification regions lies in the fact that it enables to understand the impact of physical and socio-economic
conditions on the agricultural mosaic. Moreover, it helps in knowing the contemporary competition amongst crops for area, scope for rotation and effect on double cropping, total production and per hectare productivity.

**Table No. 5.8**

*Cropping Pattern and Crop Production (in Percentage) of Sample Villages, 2007*

<table>
<thead>
<tr>
<th>Block Name</th>
<th>Village Name</th>
<th>Paddy</th>
<th>Wheat</th>
<th>Kodo Kutki</th>
<th>Gram</th>
<th>Teora</th>
<th>Black Gram</th>
<th>Linseed</th>
<th>Til</th>
<th>Mustard</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kurud</td>
<td>Mulle</td>
<td>45.52</td>
<td>18.73</td>
<td>0.00</td>
<td>15.89</td>
<td>10.51</td>
<td>0.00</td>
<td>4.60</td>
<td>0.00</td>
<td>0.00</td>
<td>4.75</td>
</tr>
<tr>
<td></td>
<td>Parkhanda</td>
<td>39.92</td>
<td>13.65</td>
<td>0.00</td>
<td>15.93</td>
<td>10.28</td>
<td>8.21</td>
<td>0.00</td>
<td>1.35</td>
<td>7.01</td>
<td>3.65</td>
</tr>
<tr>
<td>Dhamtari</td>
<td>Darri</td>
<td>44.54</td>
<td>13.16</td>
<td>0.00</td>
<td>13.88</td>
<td>9.04</td>
<td>0.00</td>
<td>4.34</td>
<td>1.95</td>
<td>7.16</td>
<td>5.93</td>
</tr>
<tr>
<td></td>
<td>Limtara</td>
<td>42.06</td>
<td>15.46</td>
<td>0.00</td>
<td>15.04</td>
<td>7.18</td>
<td>9.52</td>
<td>2.97</td>
<td>1.60</td>
<td>2.80</td>
<td>3.37</td>
</tr>
<tr>
<td>Magarlod</td>
<td>Luge</td>
<td>43.71</td>
<td>16.25</td>
<td>0.00</td>
<td>9.38</td>
<td>15.13</td>
<td>9.05</td>
<td>4.42</td>
<td>0.00</td>
<td>0.00</td>
<td>2.06</td>
</tr>
<tr>
<td></td>
<td>Kareli Chholi</td>
<td>48.03</td>
<td>11.25</td>
<td>0.00</td>
<td>10.38</td>
<td>9.05</td>
<td>4.10</td>
<td>5.84</td>
<td>0.00</td>
<td>0.00</td>
<td>11.35</td>
</tr>
<tr>
<td></td>
<td>Achholi</td>
<td>49.96</td>
<td>4.35</td>
<td>3.25</td>
<td>16.13</td>
<td>13.53</td>
<td>0.00</td>
<td>5.65</td>
<td>2.47</td>
<td>0.00</td>
<td>4.66</td>
</tr>
<tr>
<td>Nagri</td>
<td>Podagaon</td>
<td>40.61</td>
<td>5.07</td>
<td>3.04</td>
<td>21.92</td>
<td>12.42</td>
<td>0.00</td>
<td>3.82</td>
<td>2.50</td>
<td>6.25</td>
<td>4.35</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>43.03</td>
<td>13.62</td>
<td>0.46</td>
<td>15.65</td>
<td>8.26</td>
<td>5.79</td>
<td>2.70</td>
<td>1.94</td>
<td>3.95</td>
<td>4.60</td>
</tr>
</tbody>
</table>


Table no. 5.3 shows about the cropping pattern of sample villages. The Table shows about the overview attention to the food grain crops. The main dominant crops are Paddy gram and Teora respectively. These pulses are grown different season. Highest Paddy production is found at Achholi village of Nagri blocks.

Proportion of Wheat with respect to other crop is moderate. In Mulle village highest Wheat production is found (18.73 percent) and lowest is found at Achholi (4.35 percent).

Among different pulses high production is observed in Luge village and lowest in Darri village.

Oilseed production is found of very small percent in nature. Linseed, Til, Mustered are found in the sample villages. Among these oil seeds, linseed production is high in quantity. In Kareli Chhoti village linseed production is found highest (5.65 percent) and lowest in Podagaon (3.82 percent). Til and
CROP PRODUCTION AND CROPPING PATTERN OF SAMPLE VILLAGES

Fig. No: 5-2
Mustered are very low in production. In Pharkhanda village mustard production is found highest (7.16 percent) in quantity lowest observed in Limtara (2.80 percent) village.

Other crops production mainly are dominant by vegetable production. Kareli Chhoti is placed highest (11.35 percent) to produced other crops.

**Others Agricultural Pattern :**

**Horticulture :**

Flowers, fruits and vegetables are generally considered in separate from other crops under the heading of horticulture; the most distinctive feature of which is its variety.

Horticulture comprises a large range of crops which differ in their perishability, seasonality and value and also in their soil and climatic requirements.

**Characteristics of Horticulture :**

In the present investigation horticultural crops are treated in separate, primarily in their distribution which is more localized in terms both of area and of the number of holdings on which they are grown:

i) Capital investment per man is high in horticulture.

ii) The crops are produced by intensive methods.

iii) Extensive use of seasonal and part time workers, become necessary in horticulture activity.

iv) Several fruit trees being woody perennial with deep roots take many years to bear fruit, but the products being perishable, need careful handling, transport and marketing.

v) Horticultural crops are more highly localized than most agricultural enterprises.
In surveyed villages horticulture system is not famous in agricultural pattern. But some horticulture centers are observed in studied area. These are not commercial in nature. In Darri and Luge villages some horticulture centers are developed. Many flowers and banana are produced here. Because of traditional agricultural system horticulture is not famous by rural farmer. But due to some awareness some literate cultivators are engaging themselves himself in horticulture.

**Animal Husbandry:**

Animal Husbandry in surveyed village, as in rest of the district and state as well, is next in importance to crop husbandry. But livestock, dairy, poultry and pig farming are the least developed branches and most neglected aspects of agriculture. This is largely on account of the fact that agriculture is a food grain oriented occupation. And commercial livestock farming is practiced in some western countries.

Livestock is an integral part of agriculture and consists of cattle, buffaloes, sheep, goats, pigs and poultry. Together they contribute to a considerable extent to the rural economy. Most farmers keep cattle primarily to provide draught force, buffaloes are maintained for milk and cows are kept to provide bullocks rather than milk.

In surveyed village some animal husbandries are found. In Mulle village one dairy farm and one poultry farm are found. In Lmtara and Luge also one dairy farms are found. But this proportion is very low. Because most of village people are engaging themselves in crop production. They are less interest in dairy farm, poultry farm and in establishing an animal husbandry.

**Forest:**

Plantation agricultural is a part of colonial economy. In recent year plantation agricultural system becomes famous by nature commercialization. Through the plantation we can develop forest. By this forest produced wood raw material of Limber industry can be promoted.
In surveyed villages of Nagri block some forest are developed by the planning way. Some trees of Ratonjot species are sowing in the way of Pharkhanda, Darri, Luge villages. By the tree Bio-desiel is produced. But in commercial view point plantation agriculture is not famous in surveyed villages.

The foregoing review of the village crops clearly indicates that the agriculture pattern of surveyed villages are in broad conformity with that of Dhamtari district and in that there is a dominance of food grains. But here ends the similarity. For rice is the leading crop of the region and other food cereals like wheat, maize, koda are not at all grown being absent from the region’s cropping pattern. Oil seeds and vegetables are the non-food crop of sample villages. Rice Mill remain the predominant crop in surveyed villages, providing as it does the major element of the subsistence economy as well as being potentially the most important cast crop, should transport and marketing facilities be sufficiently improved to make commercial production of rice economy. Other agricultural pattern are very few proportionally seen here.