CHAPTER - 4

LEVELS OF AGRICULTURAL DEVELOPMENT
Productivity is not a synonyms of fertility, it is generally used to express the power of agriculture in a particular region to produce crops without regards to whether that power is due to bounty of nature or efforts of man”.

The term productivity has been used in different meanings and has aroused many conflicting interpretations. Sometimes, it is considered as the overall efficiency with which a production system works, while others define it as a ratio of output to resources spent separately or collectively. This term has also been correctly and interchangebly used with production. In reality, production refers, to the volume of output while productivity, signifies the output in relation to inputs used for production. However, it is commonly agreed that productivity is the ability of a production system to produce more economically and efficiently. According to Dewett "productivity expressed the varying relationships between agricultural output and one of major inputs like land, labour or capital other complementary factors remaining the same". Therefore, agricultural productivity can be defined as measure of efficiency with which an agricultural production system
works employing land, labour, capital and other resources. In the present study the productivity indices of crops considered for each districts were computed with the help of yang's method of productivity measurement for two periods of time i.e. 1985-86 and 1995-96. All the major crops grown in the region were classified into four major groups.

(A) Cereals which includes Rice, Wheat, Maize, Barley, Jowar and Bazra.

(B) Pulses includes Arhar, Gram and Peas.

(C) Cash crops includes Sugarcane, Potato and Onion.

(D) Oil seeds include mustard, sunflower and groundnut.

The data has been collected from the published record of the Directorate of Agricultural Statistics and Crop Insurance, Krishi Bhawan and Institute of State Planning, Jawahar Bhawan, Lucknow, Uttar Pradesh for the year 1985-86 and 1995-96, taking districts as unit of study.

For calculating the crop yield index for a districts, the average yield of each crop grown in the region must be known. The percentage value of crop yield in the district is then calculated by dividing the yield per
hectare of the crops in whole Tarai districts of Uttar Pradesh. The value given by the index number of the crop yield in the district is multiplied by the area under the crops in the districts. The product which came were added and divided by sum of total area under different crops in a districts. The average index is thus, obtained, which is the desired crops index of a district, using crop as a weight.

**Productivity Regions of Cereals (1985-86):**

Cereal crops occupy an important place in the agriculture of Tarai districts of Uttar Pradesh. They occupied 5.32 million hectares of area, which accounted for about 82.19 percent of the total cropped area of the region. About 41.66% of the area came under low productivity of cereals, while medium productivity region were contributed by 16.67 percent. The high productivity region covered an area of 41.66% of the region.

The region of high productivity of cereals was found in the districts like Bijnore, Moradabad, Rampur, Pilibhit and Deoria, the productivity indices of these districts were 118.30 to 141.14. The high productivity in these districts was due to assured availability of irrigation.
Figure 4.1

TARAI DISTRICTS OF UTTAR PRADESH
AGRICULTURAL PRODUCTIVITY
CEREALS (1985-86)

INDEX VALUE

HIGH  118.30 - 141.14
MEDIUM  95.46 - 118.30
LOW  72.62 - 95.46

Kms
facilities, sufficient amount of fertilizers and agricultural implements and machinery. The concentration of medium productivity spread in Barielly and Shahjahanpur with the crop indices ranging between 95.46 and 118.30. The area under low productivity of cereals was recorded in the districts like Gorakhpur, Basti, Kheri, Gonda and Bahraich, the productivity indices in these districts were between 72.62 and 95.46, the causes of low productivity were unassured facilities of irrigation, inadequate dose of fertilizer and unhealthy use of technology.

Productivity Regions of Pulses (1985-86):

In our predominantly starchy vegetarian diet, pulses acquired or play a very important role as they provide us rich amount of protein.

In study region only three major crops Gram, Peas and Arhar are grown. The high productivity accounted for 41.66 percent of the total area under pulses, whereas medium and low productivity region comprised 33.33 percent and 25.00 percent respectively. Productivity region of pulses are shown in figure 4.2. It may be seen from the figure that high concentration of pulses was found in five districts namely, Rampur, Barielly,
Figure 4.2

TARAI DISTRICTS OF UTTAR PRADESH AGRICULTURAL PRODUCTIVITY PULSES (1985-86)

INDEX VALUE

HIGH 107.41 - 126.55
MEDIUM 88.27 - 107.41
LOW 69.13 - 88.27

Kms
20.10 20 40
Method for Calculating crop productivity index for districts Bijnore

<table>
<thead>
<tr>
<th>Name of crops</th>
<th>Area of crop in the district (in hect)</th>
<th>yield in Quental/hect</th>
<th>Average yield in district</th>
<th>Average yield in region</th>
<th>crop yield in the dist. as % to the region (3 x 4)</th>
<th>Percentage multiplied by area in hectare (5 x 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice</td>
<td>84443</td>
<td>19.97</td>
<td>14.00</td>
<td>142.64</td>
<td>12044949.52</td>
<td></td>
</tr>
<tr>
<td>Wheat</td>
<td>1376.12</td>
<td>18.74</td>
<td>18.07</td>
<td>103.71</td>
<td>14271740.52</td>
<td></td>
</tr>
<tr>
<td>Jowar</td>
<td>133</td>
<td>11.13</td>
<td>10.08</td>
<td>110.42</td>
<td>14685.86</td>
<td></td>
</tr>
<tr>
<td>Bazra</td>
<td>1296</td>
<td>3.00</td>
<td>8.91</td>
<td>33.67</td>
<td>43636.32</td>
<td></td>
</tr>
<tr>
<td>Maize</td>
<td>3276</td>
<td>13.84</td>
<td>7.32</td>
<td>189.07</td>
<td>619393.32</td>
<td></td>
</tr>
<tr>
<td>Barley</td>
<td>13.05</td>
<td>5.51</td>
<td>9.39</td>
<td>58.68</td>
<td>76577.40</td>
<td></td>
</tr>
</tbody>
</table>

| Total         | 228065                                 |                       |                           |                         |                                               |

Crop Index for the District Bijnore

\[ \frac{27070982.94}{228065} = 118.69 \]

Sources-
Table 4.1
Districtwise distribution of Productivity 1985-86

<table>
<thead>
<tr>
<th>Districts</th>
<th>Cereal</th>
<th>Pulses</th>
<th>Cash Crops</th>
<th>Oil seeds</th>
<th>Composit Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bijnore</td>
<td>118.69</td>
<td>106.72</td>
<td>108.59</td>
<td>79.19</td>
<td>103.30</td>
</tr>
<tr>
<td>Moradabad</td>
<td>119.30</td>
<td>103.93</td>
<td>111.24</td>
<td>88.88</td>
<td>105.84</td>
</tr>
<tr>
<td>Rampur</td>
<td>141.14</td>
<td>110.28</td>
<td>108.54</td>
<td>91.29</td>
<td>112.81</td>
</tr>
<tr>
<td>Barielly</td>
<td>107.01</td>
<td>123.85</td>
<td>98.08</td>
<td>106.63</td>
<td>108.90</td>
</tr>
<tr>
<td>Shahjahanpur</td>
<td>117.23</td>
<td>126.55</td>
<td>108.11</td>
<td>124.81</td>
<td>119.17</td>
</tr>
<tr>
<td>Pilibhit</td>
<td>125.22</td>
<td>126.40</td>
<td>92.06</td>
<td>88.29</td>
<td>107.99</td>
</tr>
<tr>
<td>Gorakhpur</td>
<td>90.55</td>
<td>76.55</td>
<td>89.23</td>
<td>97.22</td>
<td>88.39</td>
</tr>
<tr>
<td>Deoria</td>
<td>125.35</td>
<td>95.06</td>
<td>97.27</td>
<td>129.79</td>
<td>111.87</td>
</tr>
<tr>
<td>Basti</td>
<td>80.54</td>
<td>105.55</td>
<td>84.45</td>
<td>128.53</td>
<td>99.77</td>
</tr>
<tr>
<td>Sidharth Nagar</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Kheri</td>
<td>88.67</td>
<td>69.13</td>
<td>95.72</td>
<td>97.49</td>
<td>87.75</td>
</tr>
<tr>
<td>Gonda</td>
<td>88.11</td>
<td>108.33</td>
<td>69.62</td>
<td>104.06</td>
<td>92.53</td>
</tr>
<tr>
<td>Bahraich</td>
<td>72.62</td>
<td>8.095</td>
<td>78.40</td>
<td>85.09</td>
<td>79.27</td>
</tr>
</tbody>
</table>

Sources- Agricultural Statistics, Directorate of Agriculture and Crop Insurances (1985-86), Krishi Bhawan, Lucknow, Uttar Pradesh.
### Table 4.2
Districtwise distribution of Productivity 1995-96

<table>
<thead>
<tr>
<th>Districts</th>
<th>Cereal</th>
<th>Pulses</th>
<th>Cash Crops</th>
<th>Oil seeds</th>
<th>Composit Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bijnore</td>
<td>111.63</td>
<td>80.43</td>
<td>106.12</td>
<td>112.17</td>
<td>102.58</td>
</tr>
<tr>
<td>Moradabad</td>
<td>116.05</td>
<td>111.19</td>
<td>109.44</td>
<td>108.94</td>
<td>111.40</td>
</tr>
<tr>
<td>Rampur</td>
<td>122.00</td>
<td>154.11</td>
<td>99.55</td>
<td>112.61</td>
<td>122.07</td>
</tr>
<tr>
<td>Barielly</td>
<td>104.60</td>
<td>71.15</td>
<td>102.16</td>
<td>133.57</td>
<td>102.87</td>
</tr>
<tr>
<td>Shahjahanpur</td>
<td>116.50</td>
<td>33.61</td>
<td>102.13</td>
<td>65.13</td>
<td>79.34</td>
</tr>
<tr>
<td>Pilibhit</td>
<td>120.46</td>
<td>70.98</td>
<td>104.44</td>
<td>80.01</td>
<td>93.97</td>
</tr>
<tr>
<td>Gorakhpur</td>
<td>91.10</td>
<td>97.50</td>
<td>91.66</td>
<td>106.54</td>
<td>96.70</td>
</tr>
<tr>
<td>Deoria</td>
<td>94.91</td>
<td>83.72</td>
<td>91.30</td>
<td>106.57</td>
<td>94.12</td>
</tr>
<tr>
<td>Basti</td>
<td>95.45</td>
<td>103.76</td>
<td>93.12</td>
<td>102.83</td>
<td>96.30</td>
</tr>
<tr>
<td>Sidharth Nagar</td>
<td>84.76</td>
<td>100.72</td>
<td>85.66</td>
<td>100.81</td>
<td>92.99</td>
</tr>
<tr>
<td>Kheri</td>
<td>96.08</td>
<td>96.54</td>
<td>88.49</td>
<td>76.57</td>
<td>87.17</td>
</tr>
<tr>
<td>Gonda</td>
<td>89.88</td>
<td>104.18</td>
<td>91.71</td>
<td>102.03</td>
<td>96.95</td>
</tr>
<tr>
<td>Bahraich</td>
<td>83.03</td>
<td>120.82</td>
<td>84.83</td>
<td>97.61</td>
<td>96.57</td>
</tr>
</tbody>
</table>

Sources—Agricultural Statistics, Directorate of Agriculture and Crop Insurances (1995-96), Krishi Bhawan, Lucknow, Uttar Pradesh.
Shahjahanpur, Pilibhit and Gonda with the crop indices between 107.41 and 126.55. The medium productivity region of pulses occupied Bijnore, Moradabad, Deoria and Basti with crop indices 88.27 to 107.41. While low productivity districts were Gorakhpur, Kheri and Bahraich having crop indices ranging between 69.13 and 88.27 of the study region. A general decline in the productivity of pulses was noticed from west to east because as one move west to east weather goes on becoming less favourable for the growth of pulses. General slope of land also decreases eastward which adversely affects the cultivation and productivity of specially Arhar.

**Productivity Regions of Cash Crops (1985-86):**

Cash crops were the least important group of the crops grown in the Tarai districts of Uttar Pradesh. They covered an area 688506 hectare. Among cash crops sugarcane, Potato and Onion had been taken into account, which contributed to 10.63 percent of the total cropped area of the study region. The high productivity region of cash crops shared 41.66% area and medium productivity area was 41.66 percent, the low productivity area had 16.67 percent of its share.
Figure 4.3
The high productivity districts of Cash crops were Bijnore, Moradabad, Rampur, Barielly and Shahjahanpur where the crop indices were between 97.37 and 111.24 due to better irrigation facilities and modern implements. Medium productivity districts of cash crops were Pilibhit, Gorakhpur, Deoria, Basti and Kheri with the crop indices between 83.50 and 97.37. Low productivity region covered only two districts namely Gonda and Bahraich with the crop indices 69.72 to 83.50. Low productivity was due to lack of better irrigation facilities, dependency on monsoon for irrigation and low doses of chemical fertilizers as well as insecticides and pesticides.

**Productivity Regions of Oil Seeds (1985-86):**

Oil seeds occupied 174053 hectares of cropped area of the study region. The high productivity area was covered by 25 percent to the total area under oil seeds, while the medium productivity area constitute about 33.33% and 41.66 percent area came under the low category. There were three districts Shahjahanpur, Deoria and Basti showing high concentration of oil seeds, with crop indices between 112.92 and 129.79 due to favourable climatic condition for the oil seeds crop. The medium productivity of oil seeds was noticed in four
Figure 4.4
districts namely, Barielly, Gorakhpur, Kheri and Gonda with crop indices ranging between 96.05 and 112.92 while the low productivity of oil seeds districts were Bijnore, Moradabad, Rampur, Pilibhit and Bahraich with the crop indices ranging between 79.19 and 96.05 due to engaged the land in other crops in these districts.

**Productivity Regions of all the crops based on Composite Index (1985-86):**

A composit index was formed after calculating the agricultural productivity for each group of crop in Tarai districts of Uttar Pradesh. The position of each districts were given in the table 4.1 and their spatial pattern are shown in the figure. Figure shows that there were five districts namely Rampur, Barielly, Shahjahanpur, Pilibhit and Deoria of high productivity. The crop indices ranged between 105.87 and 119.17. It covered an area of 41.66 percent to the cropped area of the region. The medium productivity districts were Bijnore, Moradabad and Basti with productivity indices between 92.57 and 105.87. Low category of agricultural productivity occupied remaining four districts namely Gorakhpur, Kheri, Gonda and Bahraich with the productivity indices between 79.27 and 92.57.
Figure 4.5
Productivity Regions of Cereals (1995-96):

Cereals were the most important crops grown in Tarai districts of Uttar Pradesh during 1995-96 also. They occupied 4.61 million hectares of land accounting for about 77.31 percent of the total cropped area of the study region. The crop indices were given in the table, the districts of high productivity extended over Bijnore, Moradabad, Rampur, Shahjahanpur and Pilibhit with the productivity indices ranging between 109.0 and 122.00. Medium productivity districts covered only two districts namely, Barielly and Kheri with the productivity indices ranging between 96.02 and 109.01. The low productivity of cereals occupy vast area of the region. It included the districts of Gorakhpur, Deoria, Basti, Sidharth Nagar, Gonda and Bahraich which had crop indices ranging between 83.03 and 96.02. Altogether they occupied an area of 46.15 percent of the total area under cereals of the region.

Productivity Regions of Pulses (1995-96):

Pulses in Tarai districts of Uttar Pradesh were grown over 206720 hectares which accounted for 3.46 percent of the total cropped area of the study region. The productivity status of pulses are illustrated in
Figure 4.6

Tarai districts of Uttar Pradesh agricultural productivity cereals (1995-96)

Index Value

High: 109.01 - 122.00
Medium: 96.02 - 109.01
Low: 83.03 - 96.02

Kms: 20, 40
Figure 4.7

TARAI DISTRICTS OF UTTAR PRADESH
AGRICULTURAL PRODUCTIVITY
PULSES (1995-95)

INDEX VALUE
HIGH 113.95 - 154.11
MEDIUM 73.79 - 113.95
LOW 33.61 - 73.79

Kms
20 40 10
figure and the crop indices of all the districts are given in the table. High productivity of pulses was seen in two districts namely Rampur and Bahraich with the productivity indices ranging between 113.95 to 154.11. While the low productivity of Pulses was only recorded in one district namely Barielly, due to land engaged in other commercial crops and Shahjahanpur and Pilibhit with the productivity indices ranging between 33.61 and 73.79. The medium productivity of pulses covered a vast area of the region including the districts namely Bijnore, Moradabad, Gorakhpur, Deoria, Basti, Siddharth Nagar, Kheri and Gonda with productivity indices ranging between 73.79 to 113.95.

**Productivity Regions of Cash Crops (1995-96):**

Cash crops occupied an area of 955844 hectares or 16.01 percent of the total cropped area of the Tarai districts of Uttar Pradesh. It may be seen from the figure that five districts namely Bijnore, Moradabad, Barielly, Shahjahanpur and Pilibhit recorded high productivity due to highly mechanized farming, Modern technology and availability of irrigation. Altogether they contributed 281.46% of the total area under cash crops. The productivity indices ranged between 101.24 and
Figure 4.8

TARAI DISTRICTS OF UTTAR PRADESH
AGRICULTURAL PRODUCTIVITY
CASH CROPS (1995-96)

INDEX VALUE
HIGH 101.24 - 109.44
MEDIUM 93.00 - 101.24
LOW 84.76 - 93.00

Kms
109.44. The districts of Rampur and Basti fell under medium productivity with the productivity indices between 93.00 and 101.24. The low productivity districts were remaining six districts namely Gorakhpur, Deoria, Sidharth Nagar, Kheri, Gonda and Bahraich, these districts together covered an area of 46.15% of the Tarai districts of Uttar Pradesh under cash crops. The crop indices were ranging between 84.76 and 93.00.

**Productivity Regions of Oil seeds (1995-96):**

Oil seeds covered an area of 192326 hectares or 3.22% of the total cropped area of the study. The productivity region of oil seeds are shown in figure and the number of districts under high, medium and low productivity with their indices are tabulated in the table. Bijnore, Rampur and Barielly, with the productivity indices ranging between 110.76 and 133.57 were found in high productivity region of oil seeds due to high mechanized and advanced farming. Low productivity of oil seeds were found in three districts namely Shahjahanpur, Pilibhit and Kheri with crop indices ranging between 65.13 and 87.95 and remaining seven districts namely Moradabad, Gorakhpur, Deoria, Basti, Sidharth Nagar, Gonda and Bahraich fell under medium
Figure 4.9
category with crop indices ranging between 87.95 and 110.76. These districts constituted 53.85 percent area of the oil seed in the study region. These districts were found highly backward where traditional type of farming was common. In these districts large number of wooden plough were found.

**Productivity Regions of all the crops based on Composite Index (1995-96):**

An overall assessment of agricultural productivity was attempted by computing composite index. It can be seen in figure that there were only two districts namely Moradabad and Rampur representing high agricultural productivity, with crop indices ranging between 107.83 and 122.07. It covered 15.38 percent of the total cropped area of the Tarai districts of Uttar Pradesh. The low productivity also occupied two districts namely Shahjahanpur and Kheri with the crop indices ranges between 79.34 and 93.59. While the medium productivity comparatively covered large area including remaining districts namely Bijnore, Barielly, Pilibhit, Gorakhpur, Deoria, Basti, Sidharth Nagar, Gonda and Bahraich, they constituted an area 69.23 percent of the total cropped area of the region. The crop indices was ranging
Figure 4.10

TARAI DISTRICTS OF UTTAR PRADESH
OVERALL AGRICULTURAL PRODUCTIVITY
COMPOSITE INDEX (1995-96)

INDEX VALUE
HIGH 105.87 - 119.17
MEDIUM 92.57 - 105.87
LOW 79.27 - 92.57
between 93.59 and 107.83. After making the comparative study of the composite index of agricultural productivity of the Tarai districts of Uttar Pradesh between two points of time i.e. 1985-86 and 1995-96, we find that less developed irrigation facilities, traditional method of agriculture and less use of modern technology restrict the agricultural production. Hence efforts should be made to enhance agricultural production with increased use of modern inputs. It also needs attention of the agricultural scientists, planners, central and state government agencies to introduce new schemes for developing agriculture in Tarai districts of Uttar Pradesh.

**Levels of Agricultural Development:**

"Agricultural development is unquestionably a multidimensional concept of which crop productivity is one of the vital aspects". The simplest and the crudest measure of crop productivity is the yield per hectare of various crops. A desirable sophistication is introduced by finding out the value of crop produce per hectare of net area sown/cropped area or per cultivator/agricultural worker. Produce per hectare of net area sown or cropped area is an expression of the output per unit of agricultural land, and produce per agricultural worker
or cultivator reflect the income levels of agricultural population. Sharma opined that “agricultural development should be assessed not only by levels of productivity or trends in agricultural production but also with reference to various physical inputs like irrigation, fertilizers, improved seeds and extent of cultivated area”.

It follows that agricultural development is a much more comprehensive concept than normally understood. Agricultural development, in a true sense denotes the quality of the agricultural system of a region in terms of productivity, diversification and commercialisation consistent with a desired state of agrarian relation and ecological balance. The level and the rate of agricultural development may also be distinguished. The former represents a picture prevailing at a particular point of time while the latter stands for the progress achieved over a given period. If the process of agricultural development is regulated on systematic lines, it becomes agricultural development planning.

In order to measure the levels of agricultural development in Tarai districts of Uttar Pradesh the following indicators have been choosen.
X1  Percentage of irrigated area to the net sown area.
X2  Percentage of net sown area to the reported area.
X3  Percentage of area sown more than once to the net sown area.
X4  Percentage of area under commercial crops to the net sown area.
X5  Cropping Intensity in (Percentage).
X6  Crop yield indices or (yangs) Productivity index.
X8  Percentage of Literate to the total population (1981 & 1991).
X9  Percentage of electrified villages to the total villages.
X10 Number of Tractors per thousand of cropped area.
X11 Number of Pumpsets per thousand of cropped area.
X12 Number of plough per thousand of cropped area.
X13 Number of cooperative societies per lakh of population.
X14 Use of fertilizers per hectare in (K.G.)

In this section, all the variables pertaining to input and output which are considered as the indicators of
agricultural development have been collectively and spatially analysed with the help of composite Z-score statistical technique, to delineate relatively developed and less developed region of Tarai districts of Uttar Pradesh. The levels of agricultural development were measured at two points of time spaced between ten years i.e. 1985-86 and 1995-96. The Z-score technique is expressed as follow:

\[ Z_{ij} = \frac{(X_{ij} - X_j)}{S_{Xj}} \]

where,

- \( Z_{ij} \) = Standard score of the ith observation of variables.
- \( X_{ij} \) = Values of Xj variable on ith observation.
- \( X_j \) = Mean value of Xj variable.
- \( S_{Xj} \) = Standard deviation on the Xj variable.

After standardising the variables, its scores have been added together for each districts, and divided with number of variables considered which give the composite index of that district. The composite standard score may be algebraically expressed as,

\[ \text{Composite standard score (C.S.S.)} = \frac{EZ_{ij}}{N} \]

where,
Zij indicates Z-score of an indicator j in district i.

N refers the number of indicators.

The composite score of the districts have been arranged in descending order and grouped in three categories in order to measure the levels of agricultural development in the region. It is shown in Table (  ).

**Levels of Agricultural Development (1985-86):**

The composite score of the variables have a wide range of variation among the districts of the region, therefore these variations may conveniently be grouped into three categories of High, Medium and low levels of agricultural development with the help of their composite means Z-score.

Table 4.2 reveals regional pattern of agricultural development in Tarai districts of Uttar Pradesh as a whole. The districts showing high level of agricultural development were Moradabad (+0.628) Pilibhit (+0.506) Rampur (+0.382) Bijnore (+0.297) and Deoria (+0.515). Medium level of agricultural development was found in the districts of Barielly (+0.116) Gorakhpur (+0.003) and Shahjahanpur (-0.054). In this group, the development of agricultural technology was in moderate
Figure 4.11
Table 4.3
Standard score of variable for Agricultural Development in Tarai 1985-86

<table>
<thead>
<tr>
<th>Districts</th>
<th>X1</th>
<th>X2</th>
<th>X3</th>
<th>X4</th>
<th>X5</th>
<th>X6</th>
<th>X7</th>
<th>X8</th>
<th>X9</th>
<th>X10</th>
<th>X11</th>
<th>X12</th>
<th>X13</th>
<th>X14</th>
<th>ΣX/14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bijnore</td>
<td>0.062</td>
<td>-0.366</td>
<td>-0.970</td>
<td>2.714</td>
<td>-1.900</td>
<td>0.159</td>
<td>-1.937</td>
<td>1.717</td>
<td>0.999</td>
<td>1.479</td>
<td>1.909</td>
<td>0.716</td>
<td>-1.087</td>
<td>0.765</td>
<td>0.297</td>
</tr>
<tr>
<td>Moradabad</td>
<td>1.016</td>
<td>1.125</td>
<td>0.636</td>
<td>0.979</td>
<td>-0.254</td>
<td>0.378</td>
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<td>-0.005</td>
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Therefore, agricultural development was also moderate in this region. The low level of agriculture development was observed in four districts namely Basti(-0.252) Gonda (-0.548) Kheri (-0.611) and Bahraich (-0.869). The low level of agricultural development in Tarai districts of Uttar Pradesh was due to less adoption of modern inputs of Agriculture and harsh environmental conditions. It was also noted that the region of low level of agricultural development have been areas of poverty and low agricultural income for a long time.

Levels of Agricultural Development (1995-96):

In the year 1995-96, the regional pattern of agricultural development reveals that there were four districts in the region of high level of agricultural development comprising Moradabad (+0.722) Rampur (+0.552), Barielly (+0.287) and Gorakhpur (+0.273) districts. A significant decrease in agricultural development was observed in Bijnore district.

The medium category of agricultural development covered five districts namely, Deoria (+0.188), Bijnore (+0.172) Pilibhit (+0.0.048), Shahjahanpur (+0.049) and Basti (-0.077) districts. The region of low level of
Figure 4.12

TARAI DISTRICTS OF UTTAR PRADESH
LEVELS OF AGRICULTURAL DEVELOPMENT (1995-96)
<table>
<thead>
<tr>
<th>Districts</th>
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<td>1.952</td>
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<td>0.925</td>
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<tr>
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<td>0.713</td>
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<tr>
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<td>-0.715</td>
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<td>-0.714</td>
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<td>-0.657</td>
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agricultural development was found over large area, these included the districts of Kheri (-0.397), Gonda (-0.0463), Sidharth Nagar (-0.593) and Bahraich (-0.635). These districts formed a contiguous belt in the region, infrastructural facilities were not well developed here, A large number of indicators selected to affect the level of development were also low in these districts, therefore the agricultural development was very poor in these districts.
REFERENCES: