Chapter 5

Cropping Pattern

The cropping pattern in a given period is one of the important indicators of agricultural development and socio-economic status of the population in a region (Gajja and others, 1984, p. 69, and Jain, 1988, p. 106). The higher proportion of area under food crops is an indicator of lower agricultural development and therefore lower socio-economic development in a region. On the other hand, the cultivation of the food crops provides less value for there agricultural produce and it makes a slow progress of the socio-economic development. In Madhya Pradesh majority of the gross cropped area is devoted to the food crops i.e. nearly two-third (62.7%) of the total cropped area. Therefore, it is necessary to change the present cropping pattern of the state. A better technology is being recommended by the various organizations for intensive utilization of the cultivated land, reducing thereby the proportion of old and current fallows (NCAER, 1967).

The Data and Method

The data for the present study are obtained from the Agricultural Statistics published by the Director of Agriculture, Bhopal and Commissioner of Land Records, Gwalior. The data for the year 1950-51 and 1956-57 have been obtained from the Statistical Abstract, 1958-59, published by the Director of Economics and Statistics (1960), Bhopal; and
for the year 1970-71 the relevant data obtained from Agricultural Statistics
published by the Director of Agriculture, Bhopal; while the data for the
year 2002-03 and 2003-04 have been obtained from the Compendium of
Agricultural Statistics, published by M. P. State Agricultural Marketing
Board, Bhopal, 2005. Most of the data for present Madhya Pradesh have
been calculated by subtracting the data of the districts of Chhattisgarh.

Area under Food grains

The food grains have occupied a little less than two-third
(62.7%) of the total cropped area of the state; more than one-fourth (28.3%)
under oilseeds, and the remaining 9.1 per cent gross cropped area was
under other crops in the year 2002-03. Out of the total food grains, 63.7
per cent area was under cereals and 36.3 per cent area was under pulses
in the year 2002-03. About 44.4 per cent of the food grains and 27.9 per
cent of the total cropped area of the state have occupied by two main
cereals, i.e. wheat and rice in the year 2002-03. Some other important
cereals are maize, jowar, bajra and some small millet. Among the pulses,
gram has occupied 59.7 per cent of the total area under pulses, 21.7 per
cent of the total area under food grains and 13.6 per cent of the total
cropped area in the year 2002-03. Other important pulses are urd, lentil,
tur and moong. The area under gram, tur, lentil and urd has increased
while it has decreased under moong during 1956-57 and 2002-03. More
than one-third (37.3 %) of the total cropped area was under oilseeds and
other non-food crops in this state.

A little change in the area under food grains has been
recorded in the state during last five decades. It is evident from the facts
that the area under food grains has increased by 29.6 per cent between
1956-57 and 1970-71, from 9.9 lakh hectares to 12.95 lakh hectares. Since
then either it is stable or decreasing. The area under maize, wheat, rice,
gram, tur and urad has increased, while it has decreased in bajra, jowar,
barley, millets, moong, and sugarcane, during the period 1956-57 and 2002-03.

But, during last three decades, a significant shift in cropping pattern has been recorded in the state. It is evident from the facts that the proportion of gross cropped area under food grains has decreased by 22.9 per cent, from 85.6 per cent of the gross cropped area (1970-71) to 62.7 per cent of the gross cropped area (2002-03). The absolute area under food grains has also been decreased by about 12 per cent, from 129.53 lakh hectares to 113.93 lakh hectares during the period.

The proportion of gross cropped area under cereals has decreased by 18.3 per cent, from 58.2 per cent of the gross cropped area (1970-71) to 39.9 per cent of the gross cropped area (2002-03). The absolute area under cereals has also been decreased by about 17.6 per cent during the period, from 88.1 lakh hectares in 1970-71 to 72.6 lakh hectares in 2002-03.

On the other hand, the area under pulses has increased by about 2 per cent, from 20.8 % of TCA in the year 1970-71 to 22.74 % of TCA) during in the year 2002-03. The absolute area under pulses has been increased by 31.6 per cent, from 31.43 lakh hectares to 41.36 lakh hectares during the period.

Similarly, the area and percentage of gross cropped area under oilseeds has been increased during last forty-five years, from 12.02 lakh hectares (9.49% of TCA) to 51.5 million hectares (28.3% of TCA) during the year 1956-57 to 2002-03. The proportion of some other cash crops has also increased in the state.
## Table 5.1
Changes in Area under Major Crops and Compound Growth Rate in Madhya Pradesh, 1956-57 to 2002-03

<table>
<thead>
<tr>
<th>Crops</th>
<th>1956-57</th>
<th>% of TCA</th>
<th>1970-71</th>
<th>2002-03</th>
<th>% of TCA</th>
<th>% change 1970-71</th>
<th>Annual GR % 1970-71</th>
<th>2002-03</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>3143</td>
<td>24.8</td>
<td>3322</td>
<td>3382</td>
<td>18.60</td>
<td>1.8</td>
<td>0.06</td>
<td></td>
</tr>
<tr>
<td>Rice</td>
<td>1180</td>
<td>9.3</td>
<td>1369</td>
<td>1681</td>
<td>9.24</td>
<td>22.8</td>
<td>0.74</td>
<td></td>
</tr>
<tr>
<td>Maize</td>
<td>361</td>
<td>2.8</td>
<td>506</td>
<td>860</td>
<td>4.73</td>
<td>70.0</td>
<td>2.25</td>
<td></td>
</tr>
<tr>
<td>Jowar</td>
<td>1634</td>
<td>12.9</td>
<td>2163</td>
<td>652</td>
<td>3.59</td>
<td>-69.9</td>
<td>-2.25</td>
<td></td>
</tr>
<tr>
<td>Bajra</td>
<td>172</td>
<td>1.4</td>
<td>224</td>
<td>169</td>
<td>0.92</td>
<td>-24.6</td>
<td>-0.79</td>
<td></td>
</tr>
<tr>
<td>Barley</td>
<td>197</td>
<td>1.6</td>
<td>171</td>
<td>81</td>
<td>0.44</td>
<td>-52.6</td>
<td>-1.70</td>
<td></td>
</tr>
<tr>
<td>Millets</td>
<td>..</td>
<td>..</td>
<td>1053</td>
<td>432</td>
<td>2.38</td>
<td>-59.0</td>
<td>-1.90</td>
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<tr>
<td>Total Cereals</td>
<td>7585</td>
<td>59.9</td>
<td>8811</td>
<td>7257</td>
<td>39.92</td>
<td>-17.6</td>
<td>-0.57</td>
<td></td>
</tr>
<tr>
<td>Gram</td>
<td>1438</td>
<td>11.4</td>
<td>1522</td>
<td>2471</td>
<td>13.59</td>
<td>62.4</td>
<td>2.01</td>
<td></td>
</tr>
<tr>
<td>Tur</td>
<td>298</td>
<td>2.4</td>
<td>438</td>
<td>303</td>
<td>1.65</td>
<td>-30.8</td>
<td>-0.99</td>
<td></td>
</tr>
<tr>
<td>Lentil</td>
<td>..</td>
<td>..</td>
<td>257</td>
<td>467</td>
<td>2.57</td>
<td>81.7</td>
<td>2.64</td>
<td></td>
</tr>
<tr>
<td>Urad</td>
<td>..</td>
<td>..</td>
<td>428</td>
<td>521</td>
<td>2.87</td>
<td>21.7</td>
<td>0.70</td>
<td></td>
</tr>
<tr>
<td>Moong</td>
<td>..</td>
<td>..</td>
<td>201</td>
<td>83</td>
<td>0.46</td>
<td>-58.7</td>
<td>-1.89</td>
<td></td>
</tr>
<tr>
<td>Other Pulses</td>
<td>..</td>
<td>..</td>
<td>320</td>
<td>291</td>
<td>1.60</td>
<td>-9.1</td>
<td>0.29</td>
<td></td>
</tr>
<tr>
<td>Total Pulses</td>
<td>2408</td>
<td>19.0</td>
<td>3143</td>
<td>4136</td>
<td>21.8</td>
<td>31.6</td>
<td>1.02</td>
<td></td>
</tr>
<tr>
<td>Food grains</td>
<td>9993</td>
<td>78.9</td>
<td>12953</td>
<td>11393</td>
<td>62.66</td>
<td>-12.0</td>
<td>0.39</td>
<td></td>
</tr>
<tr>
<td>Vegetables &amp; Fruits</td>
<td>7.7</td>
<td>79</td>
<td>192</td>
<td>1.05</td>
<td>143.0</td>
<td>4.61</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food crop Area</td>
<td>10183</td>
<td>80.4</td>
<td>13032</td>
<td>11585</td>
<td>63.72</td>
<td>-11.1</td>
<td>0.36</td>
<td></td>
</tr>
<tr>
<td>Sugarcane</td>
<td>48</td>
<td>0.33</td>
<td>53</td>
<td>39</td>
<td>0.21</td>
<td>-26.4</td>
<td>0.85</td>
<td></td>
</tr>
<tr>
<td>Oilseeds</td>
<td>1202</td>
<td>9.5</td>
<td>1508</td>
<td>5145</td>
<td>29.29</td>
<td>241.2</td>
<td>7.78</td>
<td></td>
</tr>
<tr>
<td>TCA</td>
<td>12670</td>
<td>100.0</td>
<td>15134</td>
<td>18181</td>
<td>100.0</td>
<td>20.1</td>
<td>0.65</td>
<td></td>
</tr>
</tbody>
</table>

Source: Calculated for New Madhya Pradesh on the basis of data available from:
(iii) Area, Production and Yield of Major Crops in Madhya Pradesh, 1999-2000 to 2003-04, Director of Agriculture, Bhopal.
Area under Cereals

Among food grains, cereals have occupied major part of the total area. The total area under cereals was 72.57 lakh hectares in the year 2002-03, which was 63.7 per cent of the food grains and 39.92 per cent of the total cropped area in the year 2002-03. The area under cereals has registered almost stable except some fluctuations. It has recorded an increasing trend from 1956-57 to 1975-76, since then either it is decreasing or stable. It is evident from the facts that cereals have recorded 17.64 per cent decrease during last thirty years, from 88.11 lakh hectares in 1970-71 to 72.57 lakh hectares in the year 2002-03. The main cereals in the state are wheat, rice, maize, jowar, bajra and barley. These six cereals have about 60 per cent of the total food grains and nearly 38 per cent of total cropped area.

Wheat: Wheat is the first important crop in terms of area in the state. The total area under wheat was 33.82 lakh hectares in the year 2002-03, which was about 46.6 per cent of the cereals, 29.68 per cent of the food grains and 18.6 per cent of the total cropped area in the year 2002-03. The area under wheat has registered an increasing trend since 1956-57. This cereal has recorded 7.6 per cent increase during last forty-five years, from 31.43 lakh hectares in 1956-57 to 33.82 lakh hectares in the year 2002-03. Spatially, the Malwa plateau, the Narmada valley, the western Bundelkhand plateau, the Rewa plateau, the Singrauli basin, the Satpura region, and the Dhar uplands have recorded high and very high area under wheat. On the other hand, the eastern plateau region, the western Malwa plateau, the western Nimar uplands, and Sheopur plateau have recorded low and very low area under wheat in the state. While, the central Malwa plateau, the Nimar uplands, the Madhya Bharat plateau, eastern Bundelkhand plateau and Narsinhapur plain have recorded moderate area under wheat in the state (Map 5.3).
MADHYA PRADESH
AREA UNDER WHEAT
1971-72

Map 5.3-A

Th. Hectares
270.5
129.1
61.6
29.4
14.0
6.7

MADHYA PRADESH
AREA UNDER WHEAT
2002-03

Map 5.3-B

Th. Hectares
233.0
127.4
69.7
38.1
20.8
11.4
Table 5.2
Trends in the Area under Major Cereals in Madhya Pradesh
(Lakh hectares)

<table>
<thead>
<tr>
<th>Year</th>
<th>Wheat</th>
<th>Rice</th>
<th>Jowar</th>
<th>Maize</th>
<th>Millets</th>
<th>Total cereals</th>
<th>Food grains</th>
<th>TCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1956-57</td>
<td>31.43</td>
<td>11.80</td>
<td>16.34</td>
<td>3.61</td>
<td>8.98</td>
<td>75.85</td>
<td>99.93</td>
<td>126.70</td>
</tr>
<tr>
<td>1970-71</td>
<td>33.22</td>
<td>13.69</td>
<td>21.63</td>
<td>5.06</td>
<td>10.53</td>
<td>88.10</td>
<td>129.53</td>
<td>151.34</td>
</tr>
<tr>
<td>1980-81</td>
<td>32.57</td>
<td>15.60</td>
<td>23.35</td>
<td>6.85</td>
<td>8.92</td>
<td>91.12</td>
<td>126.52</td>
<td>157.89</td>
</tr>
<tr>
<td>1990-91</td>
<td>37.38</td>
<td>15.56</td>
<td>16.34</td>
<td>7.78</td>
<td>7.74</td>
<td>87.39</td>
<td>126.63</td>
<td>182.19</td>
</tr>
<tr>
<td>1999-00</td>
<td>46.70</td>
<td>17.40</td>
<td>6.74</td>
<td>8.01</td>
<td>5.39</td>
<td>86.47</td>
<td>128.74</td>
<td>204.19</td>
</tr>
<tr>
<td>2001-02</td>
<td>37.04</td>
<td>17.76</td>
<td>6.42</td>
<td>8.63</td>
<td>4.60</td>
<td>73.87</td>
<td>123.10</td>
<td>191.47</td>
</tr>
<tr>
<td>2002-03</td>
<td>33.82</td>
<td>16.81</td>
<td>6.52</td>
<td>8.60</td>
<td>4.32</td>
<td>72.57</td>
<td>113.93</td>
<td>181.81</td>
</tr>
<tr>
<td>2003-04</td>
<td>40.45</td>
<td>16.75</td>
<td>7.57</td>
<td>9.01</td>
<td>4.07</td>
<td>80.57</td>
<td>126.77</td>
<td>...</td>
</tr>
<tr>
<td>% change</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1956-57</td>
<td>28.70</td>
<td>41.95</td>
<td>-53.67</td>
<td>149.58</td>
<td>-54.68</td>
<td>6.22</td>
<td>26.85</td>
<td>43.50</td>
</tr>
<tr>
<td>2003-04</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(iii) Area, Production and Yield of Major Crops in Madhya Pradesh, 1999-2000 to 2003-04, Director of Agriculture, Bhopal.

**Rice**: Now, rice is the second important crop in terms of area in the state. The total area under rice was 16.81 lakh hectares in the year 2002-03, which was about 23.16 per cent of the cereals, 14.75 per cent of the food grains and 9.25 per cent of the total cropped area. The area under rice has registered an increasing trend since 1956-57. This cereal has recorded 42.45 per cent increase during last forty-five years, from 11.8 lakh hectares in 1956-57 to 16.81 lakh hectares in the year 2002-03. The main parts of rice are the eastern parts of the state, the Satpura region, and the Bundelkhand uplands. On the other hand, the low and very low area under rice is recorded in the Malwa region, and the Madhya Bharat plateau except Gwalior plain. While, the Narmada valley, Sagar-Raisen plateau, and Shivpuri plateau have registered moderate area under rice in the State (Map 5.4).
Maize: Maize is the third important crop in the state in terms of area. The total area under maize was 8.6 lakh hectares, which was about 11.9 per cent of the cereals, 7.6 per cent of the food grains and 4.7 per cent of the total cropped area in the year 2002-03. The area under maize has registered an increasing trend since 1956-57. This cereal has recorded more than two times increase during last forty-five years, from 3.61 lakh hectares in 1956-57 to 0.86 lakh hectares in the year 2002-03.

The main parts of maize are Malwa region, the Satpura region, the Baghelkhand plateau and the southern Madhya Bharat plateau. On the other hand, the Rewa plateau, the Chhatarpur uplands, the Hoshangabad plain, and the northern Madhya Bharat plateau have recorded low and very low area under maize. While, the Raisen- Vidisha plateau, the Bundelkhand plateau, Narsinghpur- Jabalpur plain, and Balaghat plateau have recorded moderate proportion of area under maize in the state (Map 5.5).

Jowar: Jowar is the fourth important crop in the state in terms of area. The total area under jowar was 6.52 lakh hectares, which was about 9 per cent of the cereals, 5.49 per cent of the food grains and 3.59 per cent of the total cropped area in the year 2002-03. The area under jowar has registered a decreasing trend since 1970-71. This cereal has recorded 69.9 per cent decrease during last thirty-two years, from 21.63 lakh hectares in 1970-71 to 6.52 lakh hectares in the year 2002-03.

Spatially, the Malwa plateau, the Nimar uplands, the Madhya Bharat plateau, central Bundelkhand uplands, the Rewa plateau, the Singrauli basin, and the Satpura region have recorded high and very high area under jowar. On the other hand, the Baghelkhand region, the Balaghat plateau, the Raisen plateau, and the Morena plateau have recorded low and very low area under jowar in the state. While, the Panna hills, the Satna plateau, Jabalpur-Katni plain, Sagar-Tikamgarh uplands, Gwalior-Datia Region and Sehore plateau have recorded moderate area under jowar in the state (Map 5.6).
Bajra: Bajra is the fifth important crop in the state in terms of area. The total area under bajra was 1.69 lakh hectares in the year 2002-03, which was about 2.33 per cent of the cereals, 1.48 per cent of the food grains and 0.93 per cent of the total cropped area in the year 2002-03. The area under bajra has registered a decreasing trend since 1970-71. Bajra has recorded 24.6 per cent decrease during last three decades, from 2.24 lakh hectares in 1970-71 to 1.69 lakh hectares in the year 2002-03.

Spatially, the main parts of bajra are the Madhya Bharat plateau in the north; Dhar-Jhabua and Nimar uplands in the western part of the state. On the other hand, the remaining parts of Madhya Pradesh have recorded negligible area under bajra (Map 5.7).

Barley: Barley is the sixth important crop in the state in terms of area. The total area under barley was 81 thousand hectares in Madhya Pradesh in the year 2002-03, which was 1.11 per cent of the cereals, 0.71 per cent of the food grains and 0.5 per cent of the total cropped area in the year 2002-03. The area under barley has registered a decreasing trend since 1956-57. This cereal has recorded 41 per cent decrease during last forty-five years, from 197 thousand hectares in 1956-57 to 81 thousand hectares in the year 2002-03.

The main parts of barley are the Rewa plateau, the Singrauli basin, and Tikamgarh and Chhatarpur of the Bundelkhand plateau; Bhind, Morena and Datia of the Madhya Bharat plateau. These areas have high and very high area under barley. The Gwalior plain and Shivpuri plateau have recorded moderate proportion of area under barley. On the other hand, the remaining parts of Madhya Pradesh have recorded negligible area under barley (Map 5.8).

Small Millets: The total area under small millets was 4.32 lakh hectares in Madhya Pradesh in the year 2002-03, which was about 6 per cent of the cereals, 4 per cent of the food grains and 3 per cent of the total cropped area.
The area under small millets has registered a decreasing trend since 1970-71. The small millets have recorded 56.31 per cent decrease during last thirty years, from 1053 thousand hectares in 1970-71 to 4.32 lakh hectares in the year 2002-03. The main parts of small millets are located in the eastern and southern parts of the state. They are the Nimar uplands, Balaghat-Maikal plateau, the Sohagpur plateau, the Rewa plateau, the Singrauli basin, and Jabalpur -Katni plain. These areas have high and very high area under small millets. On the other hand, the Narsimhapur-Hoshangabad plain, the Bundelkhand uplands, Jhabua and the Nimar uplands have recorded moderate proportion of area under small millets. The remaining parts of the state have recoded negligible area under small millets (Map 5.9).

**Area under Pulses**

After cereals, pulses have occupied major part of the total cropped area of the state. The area under pulses was 36.3 per cent of the food grains and 22.75 per cent of the total cropped area in the year 2002-03. The main pulses are gram, urd, lentil, tur, moong etc., while some other pulses are teora and some other pulses in the state.

**Gram:** Gram has first position among all the pulses in the state. The total area under gram was 24.71 lakh hectares in the year 2002-03, which was about 60 per cent of the total pulses, 21.7 per cent of the food grains and 13.6 per cent of the total cropped area. The area under gram has registered an increasing trend since 1956-57. It has recorded 71.8 per cent increase during last forty-five years, from 14.38 lakh hectares in 1956-57 to 24.71 lakh hectares in the year 2002-03.

The main areas of gram are extending over the Malwa plateau, the Narmada valley, the Bundelkhand upland, the Rewa plateau, the Singrauli basin, and the Madhya Bharat plateau. These parts have high and very high area under gram. On the other hand, the eastern
plateau region, the western part of the Malwa plateau, the Nimar uplands, and Sheopur plateau have recorded low and very low area under gram; while, the entire Satpura region has registered moderate area under gram (Map 5.11).

Table 5.3
Trends in Area under Pulses and Other Crops, Madhya Pradesh, 1956-57 to 2002-03

<table>
<thead>
<tr>
<th>Year</th>
<th>Gram</th>
<th>Urd</th>
<th>Lentil</th>
<th>Tur</th>
<th>Total Pulses</th>
<th>Food grains</th>
<th>Oilseed s</th>
<th>Veg &amp; Fruits</th>
<th>Sugar cane</th>
</tr>
</thead>
<tbody>
<tr>
<td>1956-57</td>
<td>1438</td>
<td></td>
<td>..</td>
<td>..</td>
<td>298</td>
<td>2408</td>
<td>9993</td>
<td>1202</td>
<td>..</td>
</tr>
<tr>
<td>1970-71</td>
<td>1522</td>
<td>428</td>
<td>257</td>
<td>438</td>
<td>3143</td>
<td>12352</td>
<td>1508</td>
<td>79</td>
<td>53</td>
</tr>
<tr>
<td>1980-81</td>
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<td>262</td>
<td>478</td>
<td>3540</td>
<td>12652</td>
<td>1441</td>
<td>105</td>
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<tr>
<td>1990-91</td>
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<td>322</td>
<td>401</td>
<td>3924</td>
<td>12663</td>
<td>3673</td>
<td>220</td>
<td>38</td>
</tr>
<tr>
<td>1999-00</td>
<td>2576</td>
<td>433</td>
<td>507</td>
<td>311</td>
<td>4226</td>
<td>12874</td>
<td>5790</td>
<td>281</td>
<td>43</td>
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<tr>
<td>2001-02</td>
<td>2222</td>
<td>402</td>
<td>481</td>
<td>335</td>
<td>4180</td>
<td>12310</td>
<td>5589</td>
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<td>2002-03</td>
<td>2471</td>
<td>521</td>
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<td>303</td>
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<td>472</td>
<td>325</td>
<td>4620</td>
<td>12677</td>
<td>5268</td>
<td>-</td>
<td>52</td>
</tr>
<tr>
<td>% Change</td>
<td>99.03</td>
<td>32.24</td>
<td>83.66</td>
<td>9.06</td>
<td>91.86</td>
<td>26.85</td>
<td>138.27</td>
<td>143.04</td>
<td>8.33</td>
</tr>
</tbody>
</table>


Urd: Urd has second important position among all the pulses in the state. The total area under urd was 5.21 lakh hectares in the year 2002-03, which was about 13.7 per cent of the total pulses, 4.57 per cent of the food grains and 2.87 per cent of the total cropped area. The area under urd has registered an increasing trend since 1970-71. It is evident from the fact that the area under urd has recorded 21.7 per cent increase during last thirty-two years, from 4.28 lakh hectares in 1970-71 to 5.21 lakh hectares in the year 2002-03.
The main areas of urd extend over the western Malwa plateau, the Satpura region, parts of the Narmada valley, the Bundelkhand upland, the Rewa plateau, the Singrauli basin, the Sohagpur plateau, and southern Madhya Bharat plateau. These parts have high and very high area under urd. On the other hand, the eastern Malwa plateau, northern Madhya Bharat plateau, and the Balaghat plateau have recorded low and very low area under urd; while the eastern plateau region, Seoni plateau, and Gwalior plain have registered moderate area under urd (Map 5.12).

**Lentil:** Lentil has third important position among all the pulses in the state. The total area under lentil was 4.67 lakh hectares in the year 2002-03, which was about 11.4 per cent of the total pulses, 4.1 per cent of the food grains and 2.57 per cent of the total cropped area. The area under lentil has registered an increasing trend since 1970-71. It is evident from the fact that the area under lentil has recorded 81.7 per cent increase during last thirty-two years, from 2.57 lakh hectares in 1970-71 to 4.67 lakh hectares in the year 2002-03.

The main areas of lentil extend over the Sehore-Raisen-Vidisha plateau, Narsimhapur- Jabalpur plain, the Rewa plateau, the Baghelkhand plateau, the Bundelkhand upland, and eastern Madhya Bharat plateau have registered high and very high area under lentil. On the other hand, the Betul-Chhindwara plateau, and Gwalior-Shivpuri region have recorded moderate area under lentil while, the Malwa plateau, the Nimar uplands, and Sheopur plateau have low and very low area under lentil (Map 5.13).

**Tur:** Tur has fourth position among all the pulses in the state. The total area under tur was 3.03 lakh hectares in the year 2002-03, which was about 7.9 per cent of the total pulses, 2.7 per cent of the food grains and 1.7 per cent of the total cropped area. The area under tur has registered a decreasing trend since 1970-71. It is evident from the fact that the area under tur has recorded 30.82 per cent decrease during last thirty-
two years, from 438 thousand hectares in 1970-71 to 303 thousand hectares in the year 2002-03.

The main areas of lentil extend over the northern Madhya Bharat plateau, the Chhatarpur plateau, the Baghelkhand plateau, the Narmada valley, the Betul-Chhindwara plateau, the Nimar uplands, the Raisen plateau, and the southern Malwa plateau. These areas have registered high and very high area under tur. On the other hand, most of the Malwa region, most of the Madhya Bharat plateau, and the Orchha uplands have low and very low area under tur; while, Sagar-Damoh plateau, the Balaghat-Maikal plateau, and some other scattered areas have recorded moderate area under urd (Map 5.14).

**Moong:** Moong has fifth position among all the pulses in the state in terms of area. The total area under moong was 83 thousand hectares in the year 2002-03, which was about 2.32 per cent of the total pulses, 0.73 per cent of the food grains and 0.46 per cent of the total cropped area.

The area under moong has registered a decreasing trend since 1970-71. It is evident from the fact that the area under moong has recorded 74 per cent decrease during last thirty-two years, from 320 thousand hectares in 1970-71 to 83 thousand hectares in the year 2002-03.

The main areas of moong extend over the Madhya Bharat plateau, Orchha uplands, the Chhatarpur plateau, the Rewa plateau, the Betul-Chhindwara plateau, the Nimar uplands, and Jhabua. These areas have registered high and very high area under moong. On the other hand, most of the Malwa region, the Baghelkhand plateau, the Hoshangabad plain, and Gwalior plain have low and very low area under moong; while, Sagar plateau, Narsimhapur- Jabalpur plain, and the Singrauli basin have recorded moderate area under moong (Map 5.15).
Area under Vegetables and fruits

About 1.92 lakh hectares area is under vegetables and fruits in the year 2002-03. The area under vegetables and fruits was 1.1 per cent of the total cropped area of the state in the year 2002-03. The area under vegetables and fruits has registered an increasing trend since 1970-71. Area under vegetables and fruits has recorded 2.7 times increase during last thirty years, from 79 thousand hectares in 1970-71 to 192 thousand hectares in the year 2002-03.

Area under Oilseeds

The total area under oilseeds was 51.45 lakh hectares in the year 2002-03, which was 28.3 per cent of the total cropped area. The area under oilseeds has registered an increasing trend since 1956-57. The area under oilseeds has recorded 4.3 times increase during last forty-five years, from 12.02 lakh hectares in 1956-57 to 51.45 lakh hectares in the year 2002-03. The main parts of oilseeds are the Madhya Bharat plateau; the Malwa plateau; the Bundelkhand upland; the Narmada valley; and the Satpura region. These areas have nearly three-fourth of the total area under oilseeds of the state (Map 5.16).

Soya beans: Soya bean has first position among all the oilseeds in the state. The total area under soya bean was 41.91 lakh hectares in the year 2002-03, which was about 81.5 per cent of the total oilseeds, and 23.05 per cent of the total cropped area. The area under soyabeans was only 4 thousand hectares in the year 1964-65, when this crop was introduced in the state. During 1971 the area under this crop was again only 3 thousand hectares. But, after 1971 the area under soyabeans has registered an increasing trend, it has recorded about 524 times increase during last three decades, from 0.08 lakh hectares in 1971-72 to 41.91 lakh hectares in the year 2002-03.
MAP 5.16-A
MADHYA PRADESH
AREA UNDER OILSEEDS
1971-72

MAP 5.16-B
MADHYA PRADESH
AREA UNDER OILSEEDS
2002-03
The area under soyabean has recorded high and very high in the Malwa region and the Nimar uplands, middle Narmada valley, the Bundelkhand upland, and southern Madhya Bharat plateau; while it is relatively moderate in the Sheopur plateau and the Rewa plateau. On the other hand, the area under soyabean has recorded low and very low in the northern part of the Madhya Bharat plateau, the Singrauli basin, and some eastern districts of the state (Map 5.17).

Mustard: Mustard has second position among all the oilseeds in the state. The total area under mustard was 3.69 lakh hectares in the year 2002-03, which was about 7.18 per cent of the total oilseeds, 2.03 per cent of the total cropped area. The area under mustard has registered an increasing trend since 1970-71. It has recorded more than two times increase during last three decades, from 1.5 lakh hectares in 1970-71 to 3.69 lakh hectares in the year 2002-03. The main districts of mustard are spread over the Malwa plateau; the Madhya Bharat plateau; the Bundelkhand upland; and the Narmada valley (Map 5.18).

Groundnut: Groundnut has third position among all the oilseeds in the state. The total area under groundnut was 2.08 lakh hectares in the year 2002-03, which was about 4.05 per cent of the total oilseeds, 1.14 per cent of the total cropped area. The area under groundnut has registered a decreasing trend since 1970-71. It has recorded 52.18 per cent decrease during last three decades, from 4.35 lakh hectares in 1970-71 to 2.08 lakh hectares in the year 2002-03.

The area under groundnut has recorded high and very high in the Nimar uplands, the Dhar-Jhabua uplands, and Mandsaur plateau; Shivpuri plateau, Tikamgarh-Chhatarpur uplands, entire Satpura region; while it is moderate in the Sagar plateau. On the other hand, the area under groundnut has recorded low and very low in the remaining part of the state (Map 5.19).
Linseed: Linseed has fourth position among all the oilseeds in the state. The total area under linseed 1.42 lakh hectares in the year 2002-03, which was about 2.76 per cent of the total oilseeds, 0.78 per cent of the total cropped area. The area under linseed has registered a decreasing trend since 1970-71. It has recorded nearly three times decrease during last three decades, from 4.05 lakh hectares in 1970-71 to 1.42 lakh hectares in the year 2002-03.

The area under linseed has recorded high and very high in the Bundelkhand uplands, the Rewa plateau, the Singrauli basin, Seoni-Balaghat plateau, Mandla-Shahdol plateau, and the Raisen plateau; while it is moderate in the Betul- Chhindwara plateau, Guna-Vidisha plateau, and the Gwalior plain. On the other hand, the area under linseed has recorded low and very low in the Malwa region and the Nimar uplands, the Madhya Bharat plateau and in the remaining parts of the state (Map 5.20).

Sesamum: Sesamum has fifth position among all the oilseeds in the state. The total area under sesamum was 1.27 lakh hectares in the year 2002-03, which was about 2.47 per cent of the total oilseeds, 0.7 per cent of the total cropped area. The area under sesamum has registered a decreasing trend since 1970-71. It has recorded 49.4 per cent decrease during last three decades, from 3.13 lakh hectares in 1970-71 to 1.27 lakh hectares in the year 2002-03.

The area under sesamum has recorded high and very high in the northern Bundelkhand uplands, the Singrauli basin, Seoni plateau, the Shivpuri plateau and Morena plateau; while it is moderate in the entire Satpura region, the Balaghat-Maikal plateau, the Narmada valley, and most of the Madhya Bharat plateau. On the other hand, the area under sesamum has recorded low and very low in the entire Malwa region (Map 5.21).
Area under Sugarcane

The total area under sugarcane was 39 thousand hectares in the state in the year 2002-03, which was less than one per cent (0.21 %) of the total cropped area of the state. The area under sugarcane has registered a decreasing trend since 1970-71. It has recorded 26.41 per cent decrease during last three decades, from 53 thousand hectares in 1970-71 to 39 thousand hectares in the year 2002-03.

The area under sugarcane has recorded high and very high in the Morena and Datia plateau, the Narsimhapur plain, Sehore-Dewas plateau, eastern Nimar uplands and the Betul-Chhindwara plateau. Some other important areas of sugarcane are the Gwalior plain, Guna plateau, Seoni-Balaghat plateau, and Mandla plateau (Map 5.22).

Shift in Area from Food grains to other crops

In Madhya Pradesh, food grains have occupied a little less than two-third of the gross cropped area (62.7%), more than one-fourth (28.3%) was under oilseeds and the remaining 9 per cent was under non-food crops in the year 2002-03. Among food grains, 39.9 per cent of the gross cropped area was under cereals and 22.7 per cent was under pulses. Among food grains, a little less than two-third (63.7%) was under cereals and more than one-third (36.3 %) was under pulses.

A significant shift in cropping pattern has been recorded in the state during last three decades. The proportion of gross cropped area has changed significantly under different crops during 1970-71 to 2002-03 in the state. It is evident from the facts that the proportion of gross cropped area under food grains has decreased by 22.9 per cent, from 85.6 per cent of the gross cropped area (1970-71) to 62.7 per cent of the gross cropped area (2002-03). The absolute area under food grains has also been
decreased by about 12 per cent, from 129.53 lakh hectares to 113.93 lakh hectares during the period.

The proportion of gross cropped area under cereals has decreased by 18.3 per cent, from 58.2 per cent of the gross cropped area (1970-71) to 39.9 per cent of the gross cropped area (2002-03). The absolute area under cereals has also been decreased by about 17.6 per cent during the period, from 88.1 lakh hectares in 1970-71 to 72.6 lakh hectares in 2002-03.

Table 5.4
Shift in Area from Food Grains to Other Crops in Madhya Pradesh 1970-71 to 2002-03

<table>
<thead>
<tr>
<th>Crop</th>
<th>1970-71</th>
<th>2002-03</th>
<th>Increase/decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice</td>
<td>11.03</td>
<td>9.25</td>
<td>-1.77</td>
</tr>
<tr>
<td>Wheat</td>
<td>21.95</td>
<td>18.60</td>
<td>-3.35</td>
</tr>
<tr>
<td>Jowar</td>
<td>14.29</td>
<td>3.59</td>
<td>-10.70</td>
</tr>
<tr>
<td>Bajra</td>
<td>1.48</td>
<td>0.93</td>
<td>-0.55</td>
</tr>
<tr>
<td>Barley</td>
<td>1.13</td>
<td>0.45</td>
<td>-0.68</td>
</tr>
<tr>
<td>Maize</td>
<td>3.34</td>
<td>4.73</td>
<td>1.39</td>
</tr>
<tr>
<td>Total Cereals</td>
<td>58.21</td>
<td>39.92</td>
<td>-18.29</td>
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<tr>
<td>Gram</td>
<td>10.06</td>
<td>13.59</td>
<td>3.53</td>
</tr>
<tr>
<td>Tur</td>
<td>2.89</td>
<td>1.66</td>
<td>-1.23</td>
</tr>
<tr>
<td>Other Pulses</td>
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<td>Sugarcane</td>
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<tr>
<td>Other crops</td>
<td>4.09</td>
<td>8.84</td>
<td>-116.13</td>
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</table>

Source: Calculated on the basis of data available from:
(i) Agricultural Statistics, M.P. 1973,
On the other hand, the area under pulses has increased by about 2 per cent, from 20.8 % of TCA in the year 1970-71 to 22.74 % of TCA) during in the year 2002-03. The absolute area under pulses has been increased by 31.6 per cent, from 31.43 lakh hectares to 41.36 lakh hectares during the period.

Similarly, the area and percentage of gross cropped area under oilseeds has been increased during last forty-five years, from 12.02 lakh hectares (9.49 % of TCA) to 51.5 million hectares (28.3% of TCA) during the year 1956-57 to 2002-03. The proportion of some other cash crops has also increased in the state.

Thus, it is therefore concluded that 12 per cent of the gross cropped area has been shifted from food grains to non-food crops during last thirty years in the state. It is an indication of the improvement of the food situation and overall agricultural development in the state.

Conclusions

1. Most of the gross cropped area is devoted to the food grains and oilseeds, about two-third (62.7%) of the total cropped area of the state is under food grains; more than one-fourth (28.3%) under oilseeds, and the remaining 9.1 per cent gross cropped area was under other crops in the year 2002-03.

2. Out of the total food grains, 63.7 per cent area was under cereals and 36.3 per cent area was under pulses during the year.

3. About 44.4 per cent of the food grains and 27.9 per cent of the total cropped area of the state have occupied by two main cereals, i.e. wheat and rice.
4. Among the pulses, gram has occupied 59.7 per cent of the total area under pulses, 21.7 per cent of the total area under food grains and 13.6 per cent of the total cropped area.

5. More than one-third (37.3 %) of the total cropped area was under oilseeds and other non-food crops in this state.

6. A little change in the area under food grains has been recorded in the state during last five decades. The area under food grains has increased by 29.6 per cent between 1956-57 and 1970-71, from 9.9 lakh hectares to 12.95 lakh hectares. Since then either it is stable or decreasing.

7. But, during last three decades, a significant shift in cropping pattern has been recorded in the state. The proportion of gross cropped area under food grains has decreased by 22.9 per cent, from 85.6 per cent of the gross cropped area (1970-71) to 62.7 per cent of the gross cropped area (2002-03). The absolute area under food grains has also been decreased by about 12 per cent, from 129.53 lakh hectares to 113.93 lakh hectares during the period.

8. The proportion of gross cropped area under cereals has decreased by 18.3 per cent, from 58.2 per cent of the gross cropped area (1970-71) to 39.9 per cent of the gross cropped area (2002-03). The absolute area under cereals has also been decreased by about 17.6 per cent during the period, from 88.1 lakh hectares in 1970-71 to 72.6 lakh hectares in 2002-03.

9. On the other hand, the area under pulses has increased by about 2 per cent, from 20.8 % of TCA in the year 1970-71 to 22.74 % of TCA) during in the year 2002-03. The absolute area under pulses has been increased by 31.6 per cent, from 31.43 lakh hectares to 41.36 lakh hectares during the period.
10. Similarly, the area and percentage of gross cropped area under oilseeds has been increased during last forty-five years, from 12.02 lakh hectares (9.49% of TCA) to 51.5 million hectares (28.3% of TCA) during the year 1956-57 to 2002-03. The proportion of some other cash crops has also increased in the state.

11. Among food grains, cereals have occupied major part of the total area. The main cereals in the state are wheat, rice, maize, jowar, bajra and barley. These six cereals have about 60 per cent of the total food grains and nearly 38 per cent of total cropped area.

12. Wheat is the first important crop in terms of area in the state. Now, rice is the second important crop in terms of area in the state. Gram has first position among all the pulses in the state.

13. The area under vegetables and fruits was 1.1 per cent of the total cropped area of the state in the year 2002-03. The area under vegetables and fruits has registered an increasing trend since 1970-71. Area under vegetables and fruits has recorded 2.7 times increase during last thirty years, from 79 thousand hectares in 1970-71 to 192 thousand hectares in the year 2002-03.

References


