CROP PATTERN AND SIZE OF CULTIVATED HOLDINGS

ABDUL MAJID

Research Analyst
Agricultural Economics Research Centre
University of Delhi, Delhi

This paper is based on the data collected from a few selected producers in four villages of district Deoria in Eastern U.P. It is a densely populated area where cultivation is generally carried on in tiny holdings. The district is chronically deficit in foodgrains and the U.P. Government is supplying rice and wheat through its fair price shops which are mostly located in the rural areas of the district.

Sugarcane and paddy are the most important crops sown in these villages. Since they account for more than 60 per cent of the gross cropped area, attention has been mainly focussed on an analysis of variations in area under these crops. Other crops sown in these villages are wheat, pea, barley and kodon. Sugarcane is the only cash crop, and about 80 per cent of its output is usually sold by the producers of these villages to a sugar mill. All the other crops are grown for subsistence. The output of these crops is generally not sufficient for the consumption requirement of the producers. They were found purchasing rice and wheat from the market for consumption.

Table I presents the crop pattern data collected from 54 producers for the agricultural years 1959-60, 1960-61 and 1961-62.

Let us first discuss the position in the year 1961-62. The important thing to note is that the proportion of area under sugarcane is significantly higher in the size group of holdings of 5 acres and above as compared to all the lower size groups. The reason is obvious. Mainly because of larger size of their holdings these cultivators can afford to have relatively larger area under a cash crop over and above the area sown for their subsistence.

What is perhaps equally important as a factor affecting sugarcane production is its relative profitability. As may be seen from Table II, the production of sugarcane is much more profitable on holdings of 5 acres and above as compared to comparatively smaller holdings. The variations in the net profitability of sugarcane production also explain the variations in the proportion of area under sugarcane in the three lower size groups.

Among the subsistence crops, the proportion of area under paddy is slightly higher in the two larger size groups of holdings than in the two smaller size groups. Both sugarcane and paddy are sown during kharif and compete directly with each other.

1. The data relating to 54 producers in villages Horilapur, Sahrauna, Chora Khas and Mathania Buzurg, were collected by the Agricultural Economics Research Centre, Delhi, in connection with a F.A.O. study conducted under the guidance of Dr. S. C. Gupta. The author is grateful to Mr. Ahmad Raza for his valuable comments on an earlier draft and to Mr. S. K. Kapoor for his assistance in the tabulation of data.

2. Crops grown mainly for sale are regarded as cash crops. Similarly, crops produced mainly for self-consumption by the producer households are considered as subsistence crops.
\begin{table}
\centering
\begin{tabular}{lcccccccc}
\hline
Size group (in acres) & Number of producers in each group & Average size of holding in the group in 1961-62 & Years & Gross cropped area (acres) & Area under sugarcane & Area under paddy & Area under other crops & As proportion to gross cropped area \\
\hline

Below 1.00 & 12 & 0.67 & 1959-60 & 12.44 & 1.80 & 14.5 & 4.58 & 36.8 & 6.06 & 48.7 \\
& & & 1960-61 & 11.74 & 2.56 & 21.8 & 4.36 & 32.7 & 4.82 & 41.0 \\
& & & 1961-62 & 12.32 & 2.80 & 22.7 & 4.16 & 33.8 & 5.36 & 43.5 \\

1.00-2.50 & 29 & 1.78 & 1959-60 & 60.96 & 10.06 & 16.5 & 22.58 & 37.0 & 28.32 & 46.5 \\
& & & 1960-61 & 65.62 & 12.62 & 19.2 & 24.16 & 36.8 & 28.84 & 44.0 \\
& & & 1961-62 & 65.66 & 14.58 & 22.2 & 22.22 & 33.9 & 28.86 & 43.9 \\

2.50-5.00 & 6 & 3.88 & 1959-60 & 29.44 & 4.24 & 14.4 & 12.00 & 40.8 & 13.20 & 44.8 \\
& & & 1960-61 & 28.84 & 4.80 & 16.6 & 11.64 & 40.4 & 12.40 & 43.0 \\
& & & 1961-62 & 31.56 & 6.40 & 20.3 & 11.32 & 36.5 & 13.46 & 43.2 \\

5.00 and above & 7 & 11.87 & 1959-60 & 92.24 & 26.04 & 28.2 & 36.88 & 40.0 & 29.32 & 31.8 \\
& & & 1960-61 & 95.12 & 28.84 & 30.3 & 36.36 & 38.2 & 29.92 & 31.5 \\
& & & 1961-62 & 99.68 & 27.04 & 27.1 & 36.36 & 36.5 & 36.38 & 36.4 \\

Total & 54 & 3.08 & 1959-60 & 195.08 & 42.14 & 21.6 & 76.04 & 39.0 & 76.90 & 39.4 \\
& & & 1960-61 & 201.32 & 48.82 & 24.3 & 76.52 & 38.0 & 75.98 & 37.7 \\
& & & 1961-62 & 209.22 & 50.82 & 24.3 & 74.26 & 35.5 & 84.14 & 40.2 \\
\hline
\end{tabular}
\end{table}
TABLE II

<table>
<thead>
<tr>
<th>Size group (in acres)</th>
<th>Area under sugarcane (acres)</th>
<th>Output (mds.)</th>
<th>Yield per acre (mds.)</th>
<th>Value* of output per acre (Rs.)</th>
<th>Value** of input per acre (Rs.)</th>
<th>Net value of output per acre (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 1.00</td>
<td>2.80</td>
<td>1019</td>
<td>363.93</td>
<td>598.57</td>
<td>188.88</td>
<td>400.69</td>
</tr>
<tr>
<td>1.00-2.50</td>
<td>14.58</td>
<td>4699</td>
<td>322.29</td>
<td>522.11</td>
<td>171.13</td>
<td>350.98</td>
</tr>
<tr>
<td>2.50-5.00</td>
<td>6.40</td>
<td>2093</td>
<td>327.03</td>
<td>329.79</td>
<td>232.01</td>
<td>297.78</td>
</tr>
<tr>
<td>5.00 and above</td>
<td>27.04</td>
<td>17236</td>
<td>637.43</td>
<td>1032.64</td>
<td>310.10</td>
<td>722.54</td>
</tr>
<tr>
<td>Total</td>
<td>50.82</td>
<td>25047</td>
<td>492.86</td>
<td>798.43</td>
<td>254.02</td>
<td>544.41</td>
</tr>
</tbody>
</table>

* The price used is the guaranteed minimum price (Rs. 1.62 nP. per maund) paid to the producer by the mill.
** The inputs include expenditure on hired labour, value of seeds, manures and fertilizers, expenditure on irrigation and other cash expenses. The imputed value of family labour is not included in inputs. If that is done, the relative profitability in the highest size group will be still higher.

other for the land of the cultivator. The producers in the size group of holdings of 5 acres and above as compared to the small producers are in a position to devote a proportionately larger area to this important subsistence crop, in spite of a relatively larger area of their land under sugarcane. This is the reason why they were purchasing much smaller quantities of rice from the market for self-consumption than the small producers. The data relating to rice purchases during 1961-62 show that the purchases of rice by producers in the size group 5 acres and above constituted only about 11 per cent of their rice output as compared to about 75 per cent in the case of the lowest size group.

The producers in the size group of holdings 2.50-5.00 acres had under paddy area proportionately equal to that of producers in the size group 5 acres and above mainly because the proportion of sugarcane area in their case was much lower.

It may be noted that the proportion of area under ‘other crops’ to gross cropped area is lowest in the highest size group, whereas it is more or less equal in the three lower size groups. The higher proportion of area under sugarcane in the highest size group thus seems mainly at the cost of area under ‘other crops.’

To sum up, it can be seen that the proportion of sugarcane area is significantly higher in the size group 5 acres and above than in all the smaller size groups. The profitability of sugarcane on holdings in this size group is also comparatively much higher. Further, there is some evidence to indicate variations in the pattern of production of subsistence crops as between cultivators in the size group 5 acres and above and those in the size groups below 5 acres.

Coming next to the changes in the crop pattern in 1961-62 over 1959-60, it may be noted that the area under sugarcane has increased in all the size groups during this period. But the extent of increase is much higher in the three smaller

3. The F.A.O. study has shown that the sugarcane area in the district increased tremendously during last few years mainly because of its greater profitability over other crops. The increase in area under sugarcane has led to its over-production in the area.
size groups. Even in absolute terms almost all the increase in sugarcane area has occurred in the three lower size groups as shown below:

<table>
<thead>
<tr>
<th>Size group (in acres)</th>
<th>Absolute increase in sugarcane area in 1961-62 over 1959-60 (acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>1.00—2.50</td>
<td>4.52</td>
</tr>
<tr>
<td>2.50—5.00</td>
<td>2.16</td>
</tr>
<tr>
<td>5.00 and above</td>
<td>1.00</td>
</tr>
<tr>
<td>Total</td>
<td>8.68</td>
</tr>
</tbody>
</table>

It seems paradoxical that, in spite of its greater profitability the bigger producers are not expanding the area under sugarcane. This may be due to a variety of reasons. Firstly, they may be relatively more conscious of the risks of overproduction of sugarcane in the area. Secondly, they already have relatively larger acreage under this crop than the smaller producers. And thirdly, their desire to grow crops for meeting their consumption requirements rather than purchase them from the market may also have served as a check on further expansion of area under sugarcane.

The smaller producers, on the other hand, have been continuously expanding the acreage under sugarcane. This may be because the above mentioned factors which are inhibitive in the case of larger producers are not so operative in the decision-making process of the small producers. Further, sugarcane being a cash crop enables the small farmer to reduce the burden of his indebtedness which is likely to be very heavy in this backward and poverty-stricken area.

As regards the paddy area (though it remained more or less constant in absolute terms) as a proportion of the gross cropped area, it has shown a general decline in all size groups during the last three years. This seems to be mainly due to a general increase in the area under sugarcane—the directly competing crop. Climatic conditions, particularly frequency of drought and flood, are also discouraging the cultivation of paddy in the area, since it is liable to complete failure in these conditions. The area under ‘other crops’ has shown a general decline in all the size groups with the exception of the size group 5 acres and above where it has increased significantly.

The gross cropped area in absolute terms in 1961-62 over 1959-60 in these size groups has changed as follows:

<table>
<thead>
<tr>
<th>Size group (in acres)</th>
<th>Increase or decrease in gross cropped area (acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 1.00</td>
<td>-0.12</td>
</tr>
<tr>
<td>1.00—2.50</td>
<td>+4.12</td>
</tr>
<tr>
<td>2.50—5.00</td>
<td>+2.12</td>
</tr>
<tr>
<td>5.00 and above</td>
<td>+7.14</td>
</tr>
</tbody>
</table>
The gross cropped area in the smallest size group of holdings has slightly decreased. The increase in sugarcane area by 1.00 acre in this size group appears at the cost of area both under paddy as well as ‘other crops’. It seems that the increases in the gross cropped area of size groups 1.00—2.50 and 2.50—5.00 acres have mainly been devoted to sugarcane. On the other hand, the increase in the gross cropped area in size group 5 acres and above appears to underlie the increase under ‘other crops’. The changes in absolute terms are broadly in conformity with the observations made earlier.

It may be concluded that the size of cultivated holding seems to be an important factor influencing the pattern of crop-production, particularly in the allocation of area between cash and subsistence crops.

Secondly, the proportion of area under cash crops is higher on holdings of bigger as compared to the small producers.

Thirdly, the proportion of area allocated to different subsistence crops also appears to be affected by size of cultivated holdings.

And lastly, under certain circumstances the smaller producers contribute more to the increase in area under cash crops than the bigger producers.

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ECONOMICS OF CROPPING PATTERN

M. BALASUBRAMANIAN

Reader in Economics
Annamalai University, Annalainagar

The crop pattern is, in general, determined by regional and economic factors. Farmers, sometimes, switch over production programmes from food crops to non-food crops on account of profit margins. Even though there is growing awareness on the part of farmers about higher incomes that cash crops are likely to fetch, food crops still account for 80 per cent of the total sown area in the country. Rice is relatively an important crop in the Southern States and in Bihar, Orissa, West Bengal, Assam and Madhya Pradesh. Wheat is likewise a staple cereal in Punjab, Rajasthan, Uttar Pradesh and Madhya Pradesh. Jowar appears to be an important crop in Andhra Pradesh, Bombay and Mysore. Bajra is a staple millet in Rajasthan and is also grown on a sizable scale in Bombay and Punjab. With regard to non-food crops, sugarcane is grown mainly in Uttar Pradesh, Bihar, and Punjab, cotton in Madhya Pradesh, Madras, Bombay, Mysore and Punjab and Jute in Assam, West Bengal and Bihar.