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Research Paper

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COTTON ACREAGE RESPONSE TO PRICE IN DISTRICTS OF TAMILNADU – AN EMPIRICAL INVESTIGATION

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ABSTRACT

There is clearly the need for investigation into association between changes in prices and changes in area under cotton crop for testing of dynamic models of supply function. Cotton is considered to be the most profitable crop which increases as the size of the farm increases. It is a common knowledge that net income depends upon three factors i.e., the yield, the per acre cultivation expenditure and the price of the commodity. In any area changes in yield level can be expected to be comparatively of very small magnitude in relation to the wide fluctuations in the prices. In any case it will not be very wrong to expect that price is one of the most important variables affecting relative profitability position of farmers.

KEYWORDS: *Cotton, cotton crop, farmers, prices, yield*

INTRODUCTION

A vigorous debate has taken place among the economists on the issue of acreage response of a price change, under a specific crop. Some economists have pointed out that the acreage response for the region changes very little if at all with changes in the price level. On the other hand, many economists hold equally strong view that farmers are responsive to price changes and price is the most important single factor causing shifts in the acreage under crops. The findings of the economists however do not lead to the same conclusion. Therefore, at present one finds evidences in support of both positive and negative response hypotheses. In the face of conflicting views and evidences there is clearly the need for investigation into association between changes in prices and changes in area under specific crop for testing of dynamic models of supply function. It is in this context an attempt has been made to examine the acreage response of a single commodity namely Cotton, which is produced mainly for sale in the market. The general objective of the study is to analyse the strength of acreage and price relationship in districts of Tamil Nadu state.

SELECTION OF THE AREA

For the present study ten major districts of Tamil Nadu state have been identified with top ranking area figures under cotton over a period of time viz., South Arcot, Salem, Dharmapuri, Coimbatore, Erode, Tiruchirappalli, Madurai, Ramanathapuram, Tirunelveli and Thoothukudi have been selected for field investigation and primary data collection. The farmers in the study area were grouped into small (less than 2.5 acres), semi medium (2.5 to 5 acres) and medium (above 5 acres) and in each category 40 farmers were taken as sample farmers. It is with this background the study area selected has provided the right setting for the analysis of primary data collected from 120 sample farmers.

THE SELECTED VILLAGES FROM TEN DISTRICTS ARE

Districts	Villages
South Arcot	Agaram Chittamur
Salem	Panamarathupatti
Dharmapuri	Kuppur
Coimbatore	Pannimadai
Erode	Perode
Tiruchirappalli	Alambadi
Madurai – Dindigul	Kadavur
Ramanathapuram (Kamarajar, Pasumpon Muthuramalingam)	Chittrakkottai
Tirunelveli	Velarkulam
Thoothukudi	Ammanpuram

Four farmers were selected in a random manner from each of three categories viz., small, semi medium and medium. Four farmers from each of these three groups making a total sample size of twelve in each village. Thus in all 10 villages were selected from ten chosen districts and the data obtained from 120 farmers formed the effective sample. The field analysis was carried out for the year 2015.

FINDINGS

Cotton is stated to be the most profitable crop. Opinions were elicited from the sample farmers whether the cotton cultivation was really profitable. The responses registered with reference to profitability or non-profitability is tabulated in Table 1 which is shown below:

TABLE 1
NUMBER OF FARMERS BY COTTON CROP FOUND PROFITABLE OR OTHERWISE IN 2015

Sl. No	Size of Farm	P	N. P
1	Small	22	18
2	Semi Medium	27	13
3	Medium	31	9

P = Profitable N.P. = Non Profitable, Source : Field Investigation

For the year 2015, the number of farmers accepting cotton as a profitable crop is considerable in all the three size categories, that is nearly 80 in a sample of 120. Again, the number reporting profitability increased with the size of the farms during 2015. The largest number reporting profitability being in the large farms, substantiates the inference that cotton is more profitable as a rainfed crop. This is obviously the outcome of increase in prices.

It is a common knowledge that net income depends upon three factors i.e., the yield, the per acre cultivation expenditure and the price of the commodity. In any area changes in yield level can be expected to be comparatively of very small magnitude in relation to the wide fluctuations in the prices. In any case, it will not be very wrong to expect that price is one of the most important variables affecting relative profitability position of farmers.

TABLE 2
NUMBER OF FARMERS ANTICIPATING CHANGE IN PROFITABILITY LEVEL IN FAVOUR OF COTTON BY ANTICIPATION ABOUT CHANGES IN YIELD LEVELS AND PRICES

Sl. No	Size of Farm	No change in yield but expecting price to go up	No change in yield but expecting price to remain constant	Expecting yield to go up but price to remain constant	Expecting both price and yield to go up	Expecting both price and yield to go down	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Small	22	3	6	7	2	40
2	Semi Medium	17	5	7	10	1	40
3	Medium	23	4	2	11	-	40
		62	12	15	28	3	120

Source: Field Investigation

Table 2 gives the distribution of farmers by reasons for expecting changes in the profitability level in comparison with yield and price. Of the 120 sample farmers 43 farmers expected to change in yield. As many as 62 farmers expected the prices to go up with the constant yield while 12 farmers expected the prices to remain constant with constant yield. Another 28 farmers expected the price and yield to go up. Only 3 farmers expected both price and yield to go down. 15 farmers expected yield to go up but price to remain constant. If expectations of increase in price alone with no change in yield were to be accepted as the motivational factor for acreage response, only 62 farmers could be expected to show a positive acreage response on account of price expectation.

TABLE 3
NUMBER OF FARMERS BY THEIR MOST PROBABLE EXPECTED PRICE OF COTTON (PRICE IN Rs. PER QUINTAL)

Sl No	Most Probable Price	Frequency of Farmers
1	5325	30
2	5330	5
3	5400	2
4	5430	7
5	5470	4
6	5500	2
7	5630	5
8	5800	6
9	5815	2
10	5820	14
11	5900	10
12	5910	3
13	5926	18
14	5940	3
15	5960	5
16	6000	4

Source: Field Investigation

The selected farmers expressed their expected future prices for cotton in 16 probable prices. Table 3 gives the distribution of farmers by the most probable price in which the expected price was expressed by them. It can be seen that the lowest limit was Rs. 5325 per quintal of cotton while the upper limit was Rs. 6000 per quintal is 12.68 percent higher than the lowest expected price. The difference in expectation was on the whole modest. It could be observed that a very large number of farmers (30) anticipated the price of cotton to be Rs. 5325 per quintal. The number of farmers expecting the price to be lower than this was found to be nil. The remaining 90 or majority expected the price to be higher than the present level. The average expected price for the sample was Rs. 5697 and 55 respondents expected the price to be equal to or less than the average. The remaining 65 farmers had expectations far above the average.

The expected prices were further estimated in ranges of 10 percent difference above the minimum expected price of Rs. 5325 per quintal.

TABLE 4
NUMBER OF FARMERS BY RANGE OF EXPECTATIONS ABOUT THE MINIMUM PROBABLE PRICE

Sl. No	Range of Expectation	Number of Farmers
1	0 – 10	42
2	10 – 20	58
3	Above 20	20
Total		120

Source: Field Investigation

It can be seen from Table 4 that 42 farmers had expressed the price to be within 10 percent range of the minimum price expected while another 58 had expected it to be within the range of 10 to 20 percent higher than the minimum. Thus 100 farmers actually expected the price to be higher within a range of 20 percent. Only 20 farmers expected the price to be higher than 20 percent. From this view point also it may be concluded that the

expectations were very modest in the case of majority of the farmers.

A scrutiny of the detailed statements given by the farmers in reply to the queries suggested that farmers had based their expectations on different variables which have been grouped into eight as shown in Table 5. In this investigation, it was necessary to carry on discussion widely to get a clear information about price expectation. Five dimensions of price variables have to be considered as the influencing factor. The first is the last farm harvest price which pertained to 2015 and the current price referred to the price that prevailed at the time of field investigation namely 2015. To measure the influence of past prices three other prices were considered. If the current price is P_t, it is likely to be affected by two farm harvest prices P_{t-1} and P_{t-2}. All these five considerations have been given as items 1 to 5 in Table 5.

TABLE 5
VARIABLES CONSIDERED IMPORTANT FOR PRICE EXPECTATION PURPOSES BY DIFFERENT FARMERS

Sl. No	Variables	Small	Semi Medium	Medium
1	Last farm harvest price	12	9	15
2	Current price	1	3	2
3	Trend in the prices i.e. Change from the year before farm harvest period to last farm harvest period	8	6	9
4	Trend in the prices i.e. change from farm harvest period two years back to the year before farm harvest period	6	5	6
5	Change in prices from the last farm harvest period to view point period	4	7	2
6	Governmental action	3	2	1
7	Political change	2	1	2
8	Crop prospect	5	6	3

Source: Field Investigation

Taking the sample as a whole the last farm harvest price is taken to be the important variable by a large number of farmers (36) in all the three size categories in determining expectations. The difference between P_{t-1} and P_{t-2} emerges to be the second important variable reported by 23 farmers. The two year lag difference between the two farm harvest price is considered as the third important variable for 17 farmers. 13 farmers had taken into account the changes in prices between P_t and P_{t-1}. Only 6 farmers had based their expectations on the current prices. The table clearly indicates that mainly the prices of the past periods enter into the formulation of expected prices. Other considerations which enter into the formulation of expected prices included crop prospect (14), governmental action (6) and political change (5). Except for minor variations, these inferences hold good in the case of small, semi medium and medium farmers alike. Thus in the empirical investigation carried out in this study it has been found that farmers did anticipate future crisis.

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