

CHAPTER - 5

IS PHALTAN MARKET SHRINKING?

The structure and functioning of Phaltan Cotton Market before the Monopoly Purchase Scheme and through the period of the Scheme is outlined in the previous pages. One noticeable and rather a striking feature of late that came up in the course of the analysis was that the market arrivals of cotton since mid-seventies have exhibited a decreasing trend. It seems that this matter has escaped the attention of the policy-makers and all the concerned agencies. We do not know as yet whether this tendency will continue to persist in the near future. However, the trend as such has cast a shadow resulting into a biting question "Is Phaltan Cotton Market Shrinking?" Given a broadly satisfactory marketing system in the form of Monopoly Purchase by the state government, price guarantee and cash payments, one should expect that the system should provide due incentive to the producer to the market.

In fact, this is one of the objectives of the Monopoly Purchase Scheme of cotton. In spite of the best marketing arrangement available, what has led to the observed phenomenon? Exploration of this issue is the task of this chapter.

I

COTTON CULTIVATION THROUGH THE SEVENTIES

If decreasing marketing arrivals for some years in the immediate past is considered, the central issue of our

investigation, one of the most obvious reasons may be a decline in production of cotton within the taluka. Total volume of production is the result of area under the crop and yield. A decline in any one of these two grass root factors or in both of them would contribute to a decline in aggregate quantity put out on the market. We should, there, examine the trends in area and productivity of cotton in Phaltan taluka.

(A) Trend in area under cotton in Phaltan taluka

(1) Varieties grown

Varlaxmi, Nimbkar and Laxmi are the three varieties of cotton grown prominently in Phaltan taluka. Varlaxmi is a long staple variety and requires 180 days for harvesting. It takes longer duration compared to other varieties grown in this region and hence, cost of plant protection is more. Nimbkar is known as early maturing variety, which matures within 150 days and is considered the best disease resistant variety. Laxmi variety matures within 160 to 165 days. As per the information collected from the Nimbkar Agricultural Research Institute, Phaltan, the Nimbkar variety of cotton is very popular in Phaltan taluka as its yield is the highest of all the varieties grown in the locality. During 1971-75, the Nimbkar variety yielded 7 quintals of cotton per acre as against 5 quintals from Varlaxmi and 3 quintals from Laxmi varieties. Besides these three varieties, sporadic cultivation of RHR and Jarila varieties is also undertaken.

(2) Area under Cotton Crop

Cotton crop can be cultivated under conditions of moderate rainfall. Phaltan taluka is suitable for cotton cultivation from this point of view. It is taken as almost a summer crop extending a little early monsoon period and harvesting begins by end of July or early in August. With the availability of water sources, most of the cotton cultivators thereafter cultivate rabi wheat in the same plots of land. Thus, resort to cotton cultivation leads almost to double cropping system added to crop rotation.

Cotton is a short-duration cash crop that gives quick returns to the cultivators as compared to sugarcane, the production of which extends over a full year. Trend in cotton cultivation in Phaltan taluka can be studied with the help of Table-1.

Table - 1Area under Crop in Phaltan Taluka

Years	Area (Hectares)	Index No. of change in area
1971-72	4,025	100.00
1972-73	4,231	105.12
1973-74	2,108	52.37
1974-75	3,468	86.16
1975-76	3,995	99.00
1976-77	3,549	88.17
1977-78	4,182	103.90
1978-79	4,610	114.53
1979-80	3,992	96.94
Average	3,784	94.02

Source: Compiled on the basis of data collected from the office of Tahsildar, Phaltan; Namuna No.20.

Over the seventies, area under cotton in Phaltan taluka has fluctuated within the range of 2,108 and 4,610 hectares. Area was strikingly low at 2108 in 1973-74 mainly on account of drought conditions in the previous years. Barring this exception, minimum area was 3,468 acres. If this is taken into account the range of fluctuations is narrowed down between 3,468 and 4,610 hectares. Overall average for the seventies was 3,784 hectares, giving an average index number of change in area at 94.02.

We are interested in knowing the trend in ^{area}~~average~~. For this, we would be using the method of least squares, to fix up the trend values for all the years under reference.

Trend in area under cotton cultivation in Phaltan taluka
(Fitting of trend by Method of Least Square)

Years (n)	X	\bar{X} (Devia tion)	\bar{X}^2	Y (Area)	$\bar{X}Y$	Y(Trend Value)
1971-72	1	+4	16	4,025	- 16,100	3,324
1972-73	2	+3	9	4,231	- 12,693	3,439
1973-74	3	+2	4	2,108	- 4,216	3,554
1974-75	4	+1	1	3,468	- 3,468	3,669
1975-76	5	0	0	3,995	0	3,784
1976-77	6	+1	1	3,549	3,549	3,899
1977-78	7	+2	4	4,182	8,364	4,014
1978-79	8	+3	9	4,610	13,830	4,129
1979-80	9	+4	16	3,902	15,608	4,244
9 Years			60	34,060	6,874	

TREND IN AREA UNDER COTTON CULTIVATION IN PHALTAN TALUKA.

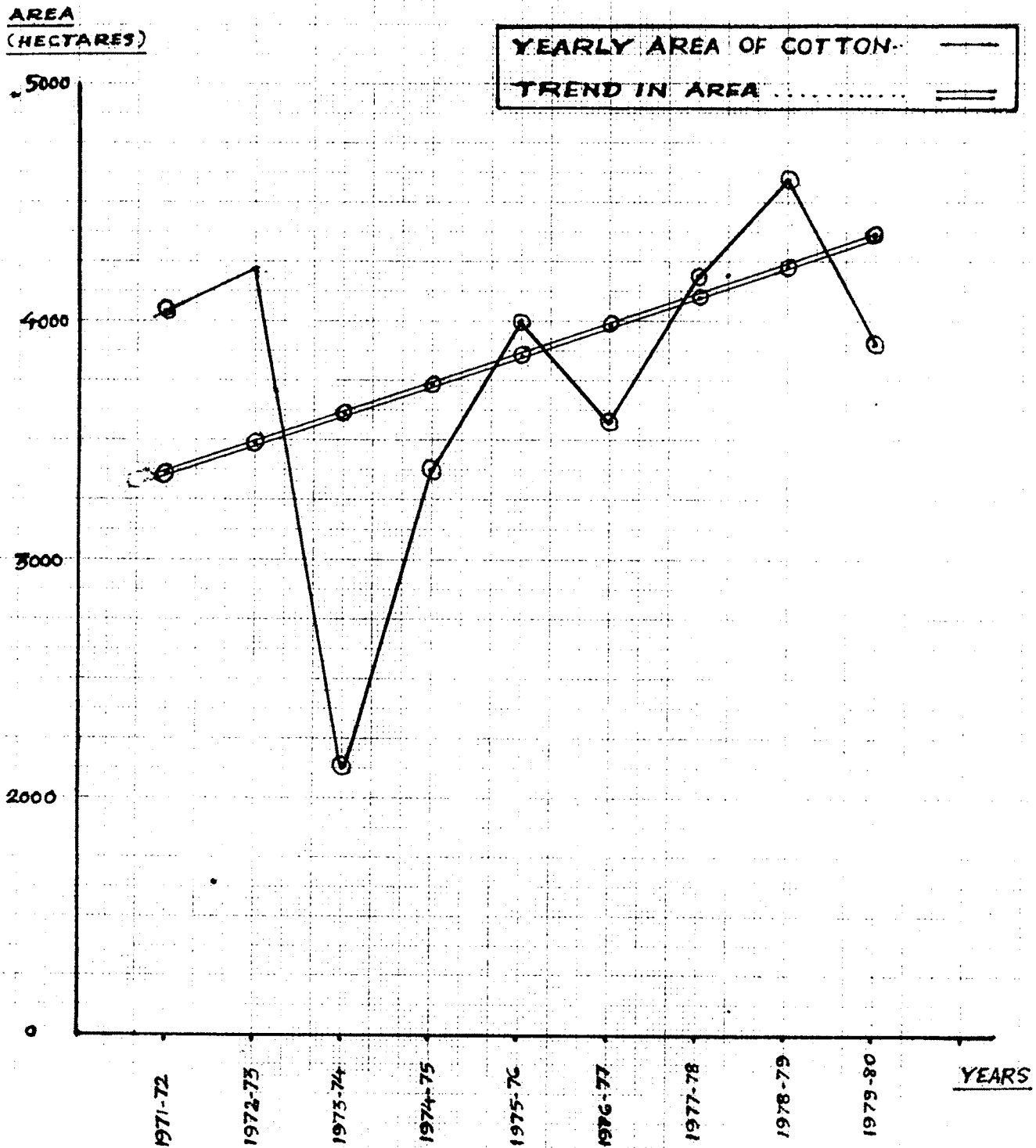


FIGURE 1

$$\frac{\sum Y}{N} = \frac{34,060}{9} = 3,784 \text{ (Mid-point of the trend -year 1975-76)}$$

$$\frac{\sum XY}{\sum X^2} = \frac{6,874}{60} = 115 \text{ (Average increase in the trend value from the mid year)}$$

$$\therefore \text{Value for 1974-75} = 3784 + (-1 \times 115) = 3,669$$

$$\text{Value for 1973-74} = 3784 + (-2 \times 115) = 3,554$$

$$\text{Value for 1976-77} = 3784 + (1 \times 115) = 3,899$$

$$\text{Value for 1977-78} = 3784 + (2 \times 115) = 4,014$$

and so on - - - -.

These calculations very plainly reveal that the area figures in the time series are indicating of an increasing trend. We have graphically shown the time series as well as trend in Fig.1. Thus we could establish one fact that during the seventies, area under cotton in Phaltan taluka was, on the whole, on increasing.

(B) Trend in Productivity of Cotton in Phaltan taluka

As per available statistical figures, we have the data for productivity of cotton expressed as quintals per acre. It is presented in Table-2.

Yield per acre of cotton has exhibited increasing trend initially upto 1974-75 from 5 quintals per acre in 1971-72 to 9 quintals in 1974-75 registering 80 percent increase.

Table - 2

Productivity of cotton in Phaltan Taluka

Years	Per acre Yield (Quintals)	Index No.of Yield varia- tion
1971-72	5	100.00
1972-73	5	100.00
1973-74	8	160.00
1974-75	9	180.00
1975-76	6	120.00
1976-77	4	80.00
1977-78	4	80.00
1978-79	3	60.00
1979-80	3	60.00

Source : Compiled on the basis of data collected from the Nimbkar Agricultural Research Institute, Phaltan.

For later years, unfortunately, the tempo in productivity could not be maintained; on the contrary productivity registered a speedy decline to 3 quintals in 1978-79. It was reduced to one-third. Decline was at an unexpectedly faster rate. Overall impact was a declining trend in productivity per acre. This can be well understood visually with a glance at Table-2. However, as we are interested in showing the trend graphically also, likewise for area under cotton herein also we have followed the method of least squares for working out the trend values for each year. Calculations are as under.

Trend in productivity per acre of cotton
in Phaltan taluka.

(Fitting of trend by method of least squares)

Years n	X	\bar{X} (Deviation)	\bar{X}^2	Y (Productivity)	$\bar{X}Y$	Y (Trend Value)
1971-72	1	- 4	16	5	- 20	6.30
1972-73	2	- 3	9	5	- 15	6.35
1973-74	3	- 2	4	8	- 16	5.90
1974-75	4	- 1	1	9	- 9	5.45
1975-76	5	0	0	6	0	5.00
1976-77	6	1	1	4	4	4.55
1977-78	7	1	4	4	8	4.10
1978-79	8	3	9	9	9	3.65
1979-80	9	4	16	16	12	3.20
9 years				60	- 27	

$$\frac{\sum Y}{N} = \frac{47}{9} = 5 \text{ (Mid-point of the trend = Year 1975-76)}$$

$$\frac{\sum XY}{\sum X^2} = \frac{-27}{60} = 0.45 \text{ (average increase in the trend value from the mid-year).}$$

$$\text{Value for 1974-75} = 5.00 + \underline{\underline{\{(-1) \times (-0.45)\}}} = 5.45$$

$$\text{Value for 1973-74} = 5.00 + \underline{\underline{\{(-2) \times (-0.45)\}}} = 5.90$$

$$\text{Value for 1976-77} = 5.00 + \underline{\underline{\{(1) \times (-0.45)\}}} = 4.55$$

$$\text{Value for 1977-78} = 5.00 + \underline{\underline{\{(2) \times (-0.45)\}}} = 4.10$$

and so on - - - .

PRODUCTIVITY OF COTTON IN PHALTAN TALUKA

[YIELD PER ACRE IN QUINTAL]

YIELD
QUINTAL)

- 1. YIELD PER ACRE - - -
- 2. TREND IN YIELD - - =

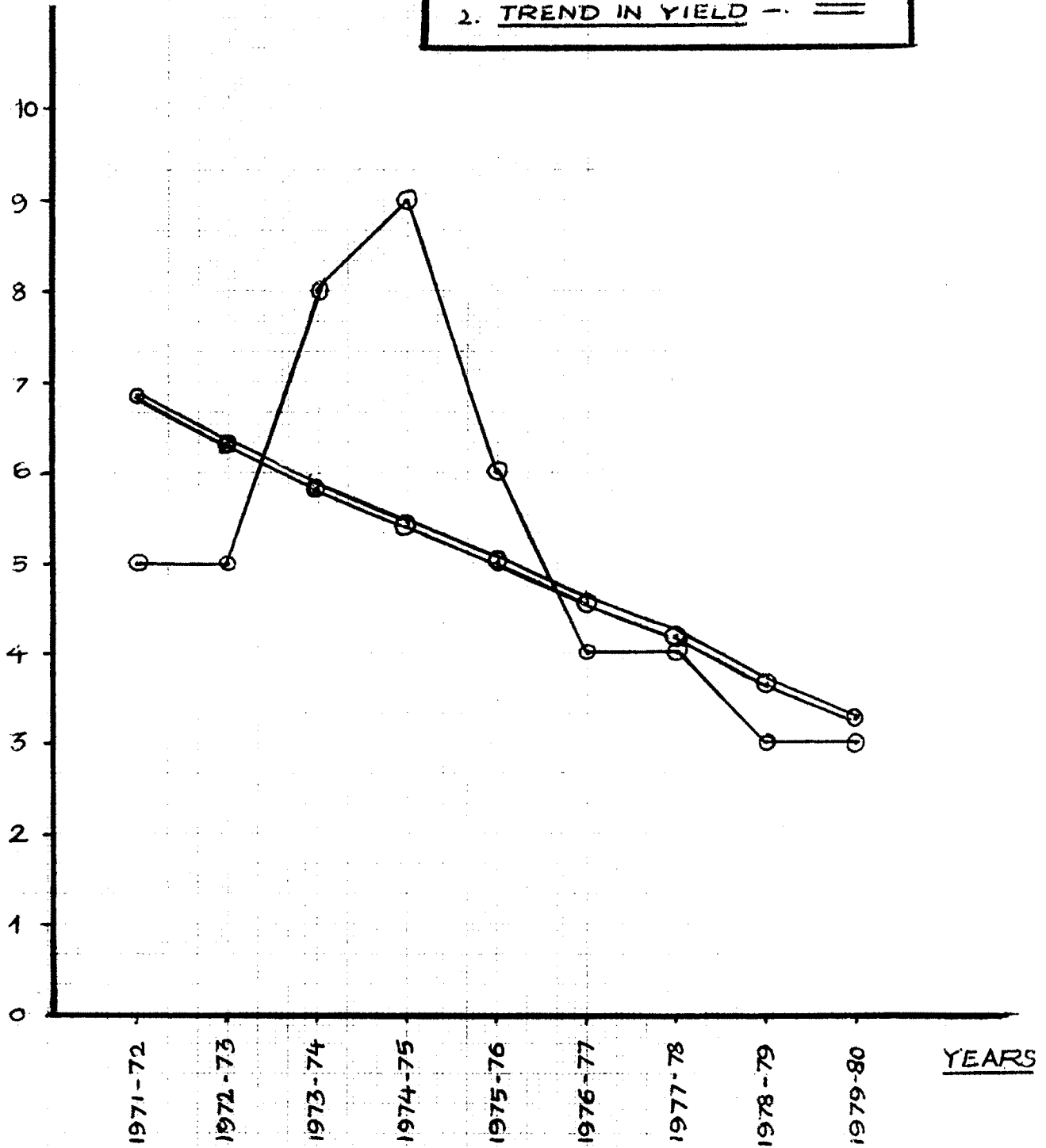


FIGURE 2

Yield per acre for the time series and the trend for the entire period are presented graphically in Figure-2.

This general feature of falling trend of yield per acre was a phenomenon common with all varieties of cotton grown in this area. As Nimbkar, Varlaxmi and Laxmi happened to be the main varieties grown in this region an extract of productivity change is presented in Table-3.

Table - 3

Period	Nimbkar	Varlaxmi	Laxmi
1971-75	7	5	3
1975-80	4(57.14)	3.5(70.00)	2.5(83.33)

Note: Figures in brackets indicate index number in relation to 1971-75 = 100.

Source: Compiled on the basis of data collected from the Nimbkar Agricultural Research Institute, Phaltn.

We find that the decrease in yield was inversely proportional to the yield capacity of each variety. Nimbkar, the highest yielding variety, lost more than others.

(C) Inter-action of area-productivity changes :

We have very vividly established two facts regarding production of cotton per acre and the area planted in taluka.

- (a) rising trend of land area, and
- (b) falling trend of productivity. How did these two opposite tendencies affect total output over the period? Table-4 would throw light on this issue.

Table - 4

• Annual Output of Cotton in Phaltan Taluka

Years	Area (Hectares)	Yield per hectares (Quintals)	Total Output (Quintals) (Area x Yield)
1971-72	4,025	12.00	48,300
1972-73	4,231	12.00	50,772
1973-74	2,108	19.20	40,474
1974-75	3,468	21.60	74,909
1974-75	3,995	14.40	57,528
1975-76	3,549	9.60	34,070
1977-78	4,182	9.60	40,147
1978-79	4,610	7.20	33,192
1979-80	3,902	7.20	28,094

Note: Original figures of yield per acre are converted into yield per hectare at 1 hectare = 2.4 acres.

Source: Compiled on the basis of Table 1 and 2.

In Table-4, the figures of total output are calculated in the light of average yield per hectare as estimated by the Nimbkar Research Institute, Phaltan. Hence, these figures may not actually tally with the figures of actual production if available anywhere. We are concerned with total output through the time series in question and note therefrom the trend on aggregate output as a result of interaction of trends in area and productivity.

By a visual scrutiny of Table-4, two phases of the tendencies in output became glaring; till 1974-75 it showed a tendency of increase and decrease thereafter. Though area was moving up since 1974-75, decline in productivity was faster leading to falling output almost consistently. For the entire period, the trend can be observed in the light of the trend values of area and productivity for the end-years of 1971-72 and 1979-80. Comparing these two we notice that as a difference between these two values, area increased by 27.68 percent and productivity decreased by 52.94 percent on an average between 1971-72 and 1979-80. As a result, output of cotton is bound to show an overall falling trend. Of course, on quantitative basis, actual declining process began with 1975-76.

We are interested in presenting the output trend graphically also for which following calculations are done with the help of the statistical method of least squares.

Trend in output of cotton in Phaltan Taluka
(Fitting of trend by method of least squares)

Years (n)	X	\bar{X} (devia tion)	X^2	Y (Output)	\bar{XY}	Y (Trend Value)
1971-72	1	- 4	16	48,300	- 1,93,200	56,948
1972-73	2	- 3	9	50,772	- 1,52,316	54,030
1973-74	3	- 2	4	40,474	- 80,948	51,112
1974-75	4	- 1	1	74,909	- 74,909	48,194
1975-76	5	0	0	57,528	0	45,276
1976-77	6	1	1	34,070	34,070	42,358
1977-78	7	2	4	40,147	80,294	39,440
1978-79	8	3	9	33,192	99,576	36,552
1979-80	9	4	16	28,094	1,12,376	33,604
9 Years			60	4,07,486	- 1,75,057	

TREND IN OUTPUT OF COTTON
IN PHALTAN TALUKA.

OUT-PUT (QUINTAL IN '000)

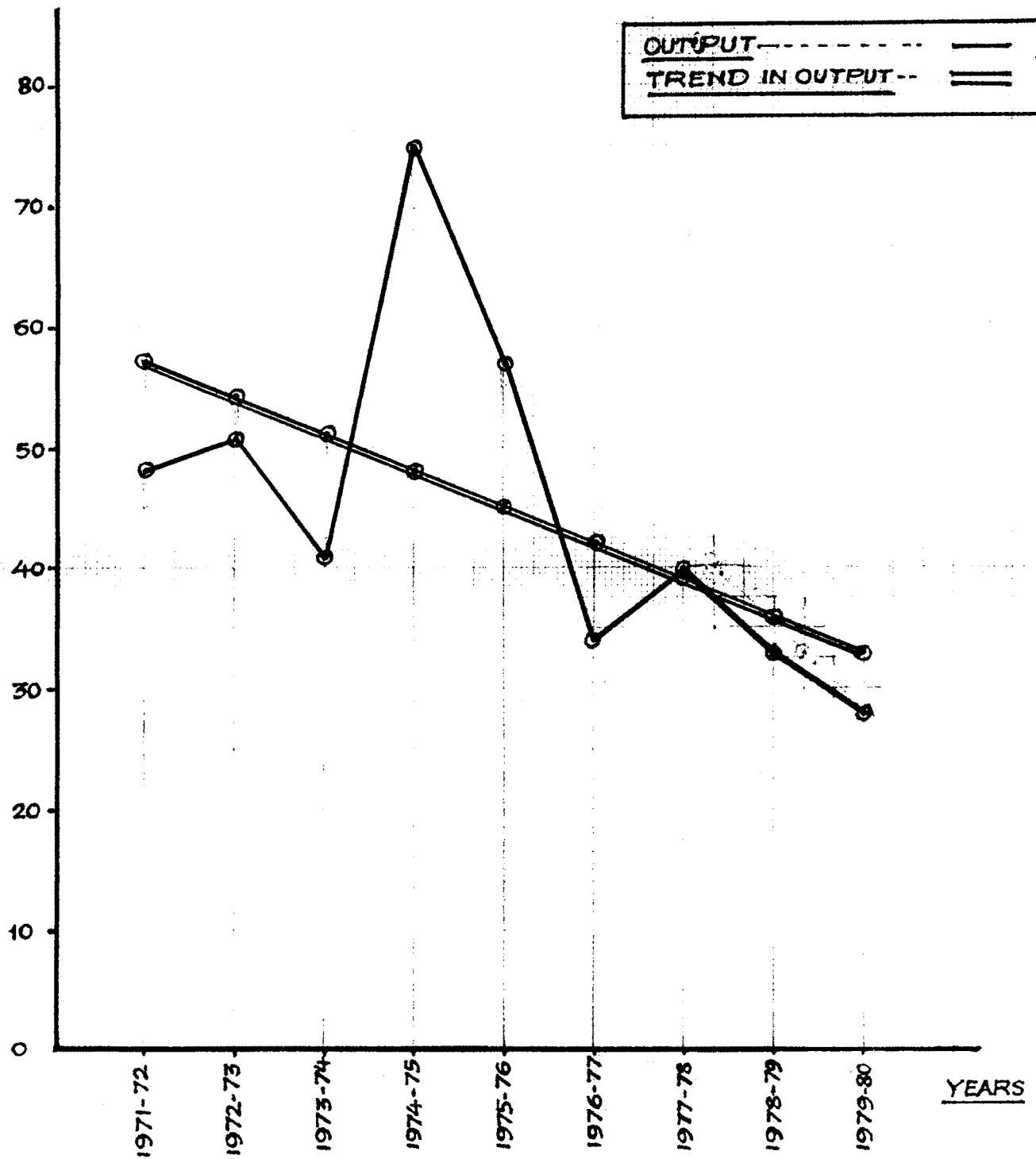


FIGURE 3

$$\frac{\sum Y}{N} = \frac{4,07,486}{9} = 45,276 \text{ (Mid-point of the trend Year = 1975-76)}$$

$$\frac{\sum XY}{\sum X^2} = \frac{1,75,057}{60} = 2,918 \text{ (Average increase in the trend value from the midpoint).}$$

Fig.-3 shows the estimated output every year and the trend therefor as revealed from the above calculations.

To sum up over conclusions, we noticed that over the period 1971-72 to 1979-80, overall trend in case of area of cotton was rising but in case of productivity was falling. As the fall in productivity was greater than rise in area, the output in aggregate manifested a falling trend. In particular however, the position was encouraging till 1974-75, but it deteriorated consistently after that. In short, rapidly falling productivity of cotton after 1974-75 was the major cause leading to falling market arrivals of cotton in Phaltnan market.

(D) Forces leading to declining productivity of cotton in Phaltnan taluka

A rapid decline in the productivity of cotton has been really a serious phenomenon developed in Phaltnan taluka, since the mid-seventies. Why should an encouraging trend in early seventies be reversed so sharply? A discussion with the officers of the Nimbkar Agricultural Research Institute, Phaltnan and number of progressive cultivators of cotton has led us to enumerate a few major factors contributing to the observed phenomenon.

(1) Seed deterioration: Reliability of the available seeds became an important problem. Adulteration in the seed packets of cotton available in the market has been common so that in the name of good quality seeds the farmer has very often to use inferior varieties. Consequently growth of the plant and yield from it suffered actually. This was experienced even in the case of Nimbkar seeds. Farmers are thus faced with a doubtful situation of the purity of seeds.

(2) Unfavourable climate : The rain before the plantation of cotton crop reduces much the soil erosion and heat in the atmosphere and helps to growth of the plant to a satisfactory stage on which subsequent stages of growth depend. Since the mid-seventies, extreme variations in the climate have impeded proper growth of cotton plants, ultimately affecting the quality and quantity of the yield. For example, in 1978-79, upto June, there was no rain for nearly three months and thereafter it rained almost continuously; both the extremes adversely affected crop productivity. Sometimes rain during picking period badly affected the bolls which were in immature stage.

(3) Fertility of the Soil : Since nineteen sixties, the cultivators have developed the practice of using their land for cotton-wheat and sugarcane by rotation. As far as cotton is concerned, it needs medium type of soil and different fertiliser applications compared to sugarcane particularly.

Rotation of cotton and sugarcane, thus, is not found to be congenial to the cotton crop. Extraction of soil fertility through over utilisation of land in sugarcane cultivation has gradually affected cotton productivity.

(4) Acute Labour Problems: As compared to sugarcane, cotton crop is labour intensive and in the nick of the time labour are attracted to the less pinching work and high wages in public works of the government. Shortage of labour disturbs very often the time-table of cultural operations of cotton crop. Proper care of the crop throughout its period of production could not, therefore, be ensured.

(5) Effects of Ujani Dam: On account of the Ujani Dam located to the east of Phaltan taluka, moisture in nearby regions has gradually increased. Moisture mixed climate has accelerated pathogenic infection on cotton crop. As the leaves and bolls are attacked by the pathogenic infection, output of the plant is less than the normal one.

II

ECONOMICS OF COTTON PRODUCTION IN PHALTAN TALUKA

There is another dimension to the problem of declining market arrivals of cotton. How have the area and productivity trends affected the farmers economically? What has made the farmers increase the area of land in face of declining crop productivity? Two aspects; viz. cost of production and market price, will be of direct significance for the purpose of scrutiny.

(A) Cost of cotton cultivation

- Details of cost of cotton cultivation during 1971-72 to 1979-80 are given in Table-5.

Table - 5Cost of Cotton cultivation per quintal in Phaltan Market

Years	Cost per quintal	Index No. of changes
1971-72	166	100
1972-73	174	105
1973-74	178	107
1974-75	189	114
1975-76	288	174
1976-77	352	212
1977-78	497	300
1978-79	525	316
1979-80	541	326

Source : Compiled on the basis of data collected from the Wimbkar Agricultural Research Institute, Phaltan.

Two distinct tendencies can be located from Table-5. Between 1971-72 and 1974-75 increase in the cost of cultivation was very moderate at 14 percent and hence must not have caused any concern to the growers. This was a period when cotton productivity was rising rapidly. Hence the moderate rise in the cost of production might have been caused by increase in the cost of inputs on the one hand and application of more inputs. But the years since 1975-76 have exhibited rise in costs by leaps and bound. Upto 1974-75

the index number of cost variation went up only by 14 whereas between 1975-76 and 1979-80, it shot up by 152 points. This period corresponds with much rise in the prices of inputs like seeds, fertilisers, pesticides, labour etc. alongwith a fast decline in a yield.

A break-up of major cost items in cotton cultivation as shown in Table-6 may help us in driving at a specific observation.

As can be seen from Table-6 that preparation of land for the crop, chemical fertilisers and plant protection pesticides commanded larger degree of change in the cost of production of cotton over the two sets of periods under reference. On the whole, per acre cost of cotton cultivation increased by 52 percent. But, at the same time, yield per acre on an average for the per acre for the period declined by about 41 percent. This resulted into 156 percent increase in the cost of cultivation per quintal pushing the average cost per quintal from Rs.193 in 1971-75 to Rs.494 in 1976-80. It is a tremendous increase indeed! Major factor responsible for this was rapidly falling land productivity. Had productivity been maintained at 1974-75 level or so, per quintal cost of production of cotton would not have soared up so much. In that case, rise in the cost would have resulted mainly from the hike in input costs.

Table - 6

Break-up of the cost of cultivation per acre
of irrigated cotton in Phaltan Taluka.

(Cost in Rs.)

Particulars	1971-75	1975-80	% Change
1. Preparation of land			
Ploughing	90	150	
Disharrowing	30	75	
Ridging	45	75	
Ridging Repairing	25	35	
Total (1)	190	335	76.32
2. Fertilisers			
Suphala - 100 kg.	100	150	
Urea - 50 kg.	50	90	
Total (2)	150	240	60.00
3. Seeds	50	75	50.00
4. Plant Protection	250	400	60.00
5. Irrigation Charges			
6. Labour :			
Planting	15	18	
Weeding	120	180	
Spraying	56	90	
Irrigation	40	56	
Harvesting	105	180	
	336	524	51.37
7. Packing & Marketing	75	75	-
8. Land & Educational Tax	36	36	-
9. Interest	106	155	45.28
10. Supervision Charges	50	75	50.00
Total Expenditure	1303	1975	(-) 51.57
Average Productivity	6.75	4	(-) 40.75

Source: Compiled on the basis of data collected from the Nimbkar Agricultural Research Institute, Phaltan.

(B) Income from cotton cultivation

• In the background of escalating cost of cotton cultivation, it will be interesting to note the position of the farmers so far as his income is concerned. Cost-price comparison would help up in this connection. Details are given in Table-7.

Table - 7Income from Cotton Cultivation in Phaltan Taluka

Years	Cost of Production (Rs.per quintal)	Price (Rs.per Quintal)	Income (Rs./Quintal)
1971-72	166	248	82
1972-73	174	266	92
1973-74	178	417	239
1974-75	189	307	118
1975-76	288	354	66
1976-77	352	514	162
1977-78	497	420	- 77
1978-79	525	351	-174
1979-80	541	446	- 95

Source: (1) Table-5
(2) "Sahakar Setu" Feb.1982; Page-106

During the period in question, cost as well as price of cotton show an increasing tendency; cost however, increased faster than the price. Increasing price must have kept up the incentive for continuation of cotton cultivation. But

● COST, PRICE AND INCOME PER QUINTAL OF COTTON IN PHALTAN TALUKA

PRICE, COST AND INCOME (RS)/ (PER QUINTAL)..

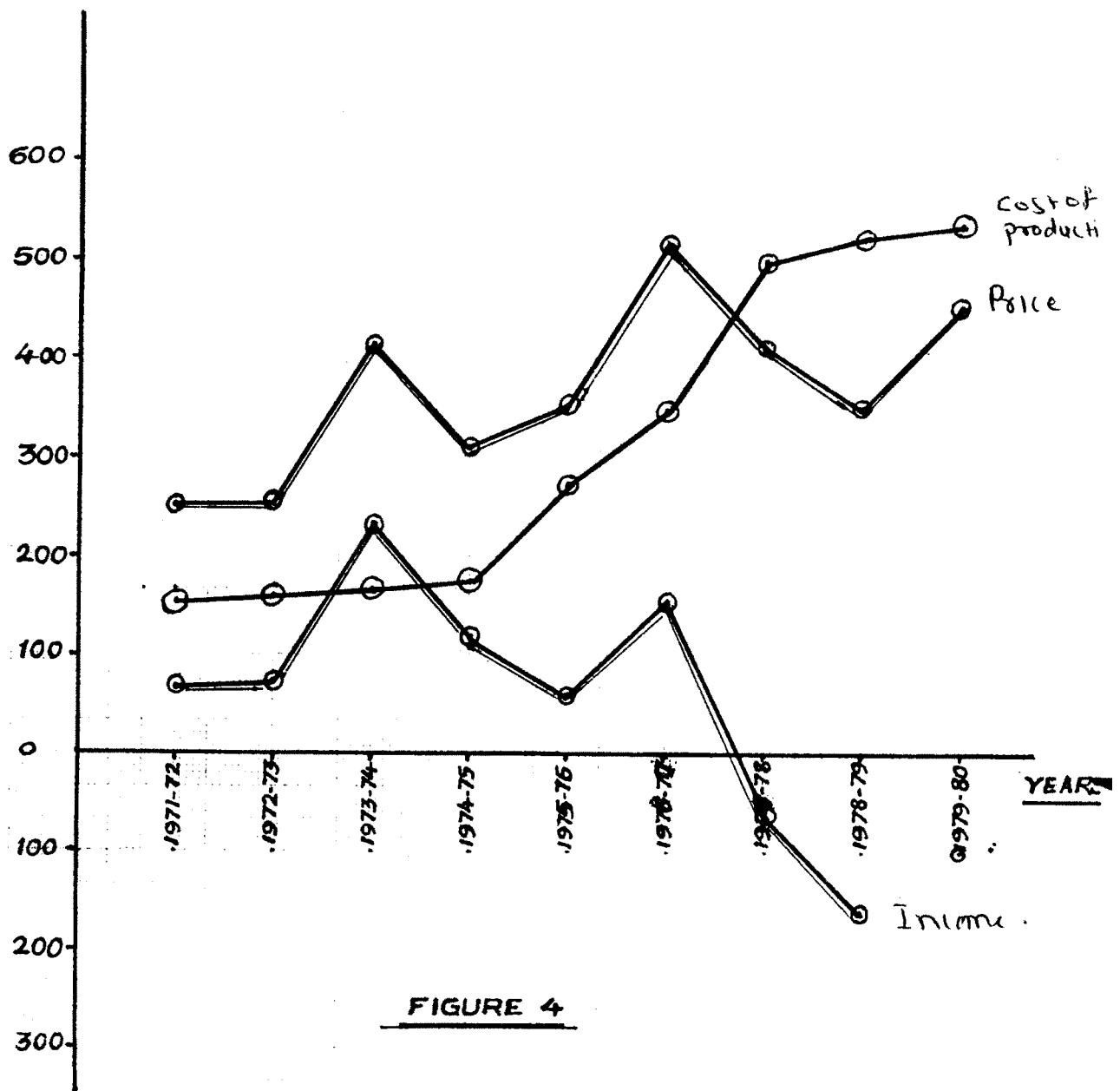
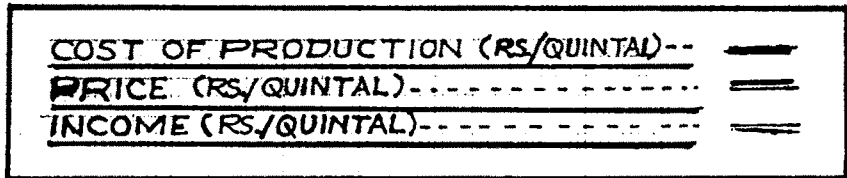


FIGURE 4

this brought the balance-sheet of the farmer into red in the later years, specifically, 1977-78 onwards when cost increase outweighed the price increase. The worst year was 1978-79 as loss per quintal of cotton produced was maximum. Perhaps, this must have been only the reasons why acreage in the succeeding year 1979-80 was reduced in Phaltan Taluka.

In sum, unremunerative prices of cotton vis-a-vis its cost be an important drag to the production and supply of cotton in addition to declining productivity beyond mid-seventies.

III

IS SUGARCANE COMPETITIVE WITH COTTON !

As we said earlier, sugarcane cultivation also is done on a substantial scale in Phaltan taluka. Hence, it can be treated as the nearest cashcrop competing with cotton in taluka. Is there any tendency among the cotton cultivator to shift over to sugarcane, and also is there a future possibility of shifting to sugarcane? Answer to these questions may enlighten us further on the attitude of the cotton grower and his future behaviour. For this, we should take into the cropping pattern in Phaltan taluka over the period in question. It is presented in Table-8. Our observations from the table can be noted down as below

(1) Aggregate area under cultivation in the taluka has increased over the period from 1971-72 to 1979-80. Hence, figures showing an absolute increase or decrease alone should not be considered to come to a specific conclusion. Percentage

Table - 8

Cropping Pattern for all crops in Phaltan Taluka from 1971-72 to 1979-80

Crops	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80
■ Cereals	57,727 (81.3)	56,627 (81.8)	59,869 (79.9)	41,895 (79.2)	36,972 (66.8)	54,277 (75.3)	56,625 (75.8)	55,210 (75.0)	57,524 (76.9)
■ Pulses	1,210 (1.7)	1,190 (1.6)	3,220 (4.3)	3,906 (6.5)	4,322 (7.1)	4,217 (5.9)	4,018 (5.4)	3,613 (5.0)	3,254 (4.4)
■ Roots	780 (1.1)	512 (0.8)	595 (0.8)	766 (1.2)	679 (0.4)	551 (0.8)	450 (0.6)	280 (0.4)	614 (0.8)
■ Vegetables	220 (0.3)	180 (0.3)	301 (0.4)	331 (0.5)	291 (0.5)	327 (0.5)	325 (0.5)	251 (0.3)	250 (0.3)
■ Fodder	510 (0.7)	402 (0.6)	538 (0.6)	572 (0.8)	524 (0.4)	514 (0.7)	610 (0.8)	512 (0.7)	520 (0.7)
■ Fruits	70 (0.1)	73 (0.1)	71 (0.1)	64 (0.1)	53 (0.1)	67 (0.09)	74 (0.1)	76 (0.1)	90 (0.1)
■ Juices	85 (0.1)	65 (0.1)	84 (0.1)	99 (0.2)	104 (0.2)	108 (0.1)	89 (0.1)	85 (0.1)	78 (0.1)
■ Sugarcane	4,446 (6.3)	4,685 (6.8)	5,597 (0.4)	5,669 (9.5)	5,771 (10.6)	5,833 (8.1)	5,456 (7.4)	5,726 (7.9)	5,049 (6.5)
■ Cotton	4,025 (5.7)	4,231 (6.1)	2,108 (2.8)	3,468 (6.7)	3,985 (7.2)	3,549 (4.9)	4,182 (5.6)	4,610 (6.3)	3,902 (5.2)
■ Oilseeds	1,825 (2.5)	1,999 (1.6)	2,341 (3.1)	2,242 (3.7)	2,518 (4.6)	2,540 (3.5)	2,350 (3.1)	2,260 (3.1)	2,382 (3.2)
■ Jute	88 (0.1)	101 (0.2)	128 (0.2)	134 (0.2)	128 (0.2)	77 (0.1)	76 (0.1)	82 (0.1)	123 (0.2)
■ Total :-	70,985	70,065	74,852	59,146	55,347	72,060	74,255	72,705	77,286

of area under each crop to the aggregate area in that year would be more realistic to note the behavioural changes in the cropping pattern. Comparison of these percentages and computation of trend values for each crop on the basis of these percentage figures would be more meaningful.

(2) On attempting to measure trend values for cotton and sugarcane on the basis of their percentage figures with the help of the method of least squares, the incremental values for cotton and sugarcane ($\frac{\Sigma XY}{\Sigma X^2}$) were 0.04 and 0.05 respectively. Both are only marginal increments and so, by and large, indicative of almost a constant trend in area. Trend slope of sugarcane was less pronounced than that of cotton as $0.05 < 0.04$. So, we can say that sugarcane and cotton cultivation in Phaltan taluka went hand-in-hand. This fact is supported by another relationship except for two years, viz. 1973-74 and 1977-78, in the remaining seven years area under sugarcane and cotton moved up or down in conformity. Thus, the possibility of a competitive co-existence of these two major crops over the period under study is straightway ruled out. Future possibility depends on many factors, we may touch to this point at the end.

(3) The cropping of the taluka has revealed almost a study picture through the seventies. Cereals, cotton and sugarcane had occupied about 6 to 8 percent while cotton 5 to 7 percent of the land. The cereals area, on the basis of percentage of area in the aggregate, showed a declining trend. As against

this, pulses and oilseeds were gradually picking up towards a rising trend. On this background, we can very well see from Table-8, that a change in the area under cotton in any year corresponded with an inverse change in the area of cereals, pulses and/or oilseeds. Pulses and oilseeds have been enjoying good prices in the market and presently deliberate efforts are being made to encourage their production. Adding this position to present time to the trend of subsituation noted and considering the agro-climatic conditions of the region, if it comes to discard cotton cultivation, farmers may prefer to go for pulses and oilseeds as against sugarcane. Hence, we are presuming that the conditions of sugarcane cultivation and sugarcane price do not change so as to become more favourable to the farmers.

IV

ANSWER TO THE TITLE ISSUE

On the basis of our findings in the previous pages, we could say that major factor responsible for falling market arrivals of cotton in the Phaltan market is a rapid decline in the productivity of cotton especially after mid-seventies. Fast increasing cost of production vis-a-vis price received at the fag end of the period is making cotton cultivation unremunerative.cotton growing. If the trend of declining productivity is not checked, sooner cotton production would go down considerably leading to shrinkage of the traditional market.

The present position subscribes to the beginning of the shrinking process.

One point needs attention at this juncture. In case of marketing of agricultural commodities, very often it is recommended by the experts that for assuring due rewards to the grower, we should have a disciplined market and price guarantee. Various measures in this direction have been taken all over the country. Regulated markets, guaranteed prices, monopoly procurement, etc. are the manifestations of the measures taken. It is, perhaps, an impression so far among all that once these arrangements are made, every thing would be over and we would be near our goal of welfare of the growers. The study of Phaltan Cotton Market has posed new issue. For cotton, the state government has provided the needed infrastructure of marketing with assured prices. This should provide all the safety to the grower in the production and marketing of cotton. The monopoly scheme is like an insurance to the grower in both these activities. The government is almost content with the introduction of the monopoly scheme. Indeed, this has provided a good environment to the cotton grower. But, it is observed that nobody at present is worried of falling market arrivals. At the official level no cognizance of this phenomenon is taken as yet. This is the most wanting aspect of Monopoly Scheme of cotton. Incentive to production should not be looked in terms of area under the crop alone. We have seen that trend of cotton area is almost

constant or slightly slanting upwards. The authorities have to go beyond this to know the actual output. As most of the cotton production comes to the market, market arrivals would be a good indicator of output in the particular year. The need is to study the productivity aspect of every agricultural commodity for which some new arrangement is provided. This is a must in Phaltan Market, if it is to be stopped from shrinking. There is thus an urgent need to improve the cotton productivity with the help of agronomists to improve the production and market arrivals of cotton in Phaltan market and to make the Monopoly Scheme of long term benefit to the growers of cotton.
