### CHAPTER-III

### COST OF SUGARCANE CULTIVATION

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CHAPTER-III

COST OF SUCARCANE CULTIVATION Analysis of Sample Data

3.1 Objectives of the Sample Survey :

The objectives of this study and hence the sample survey, are mainly the following :

- To ascertain the nature, actual level and structure of the cost of cultivation of sugarcane in the sample area.
- 11) To examine the correlationship, if any, between size of land holdings under sugarcane and variations in the cost of sugarcane cultivation.
- iii) To ascertain the cost of cultivation of sugarcane per tonne.
  - iv) To make suggestions in the light of conclusions reached in the process of this study - regarding a more pragmatic pricing of sugarcane.

### 3.2 Selection of the Sample :

We present below, a detailed analysis of the cost data on the basis of sample survey and interviews of the farmers from the sugarcane area coming under Shri Warana Sahakari Sakhar Karkhana, Warananagar, S.W.S.S.K. is one of the leading sugar factories in Maharashtra. It is located on the river Warana in Panhala Taluka in Kolhapur District. 62 villages provide cane to the said factory. The villages belong to Hatkanangale and Karveer Tahasils of Kolhapur District and Shirala and Walawa Tahasils of Sangli District.

These 62 villages are divided into 5 blocks for the purpose of effective edministration by the Warana Sugar Factory. Block No. 1 consists of 10 villages from Panhala Tahsil, Block No. 2 includes 14 villages from Panhala and Hatkanangale Tahsils, Block No. 3 is of 14 villages from Hatkanangale and Karveer Tahsils, 12 villages of Warana Tahsil are in Block No. 4 and remaining 12 villages from Shirala and Walawa Tahasils are in Block No. 5.

Although most of the villages which come under S.W.S.S.K. are located in between and on the sides of the rivers Warana and Panchaganga, they do not fully rely on the river water for irrigation. As a matter of fact almost 73% of the farmers make use of their wells partially or fully for the cultivation of came.

As for the selection of elements of the sample information was sought from the aforesaid Karakhana. After procuring the list of members and villages under the factory, sample elements were selected. To have a better data, two villages from each Block have been selected, out of which E

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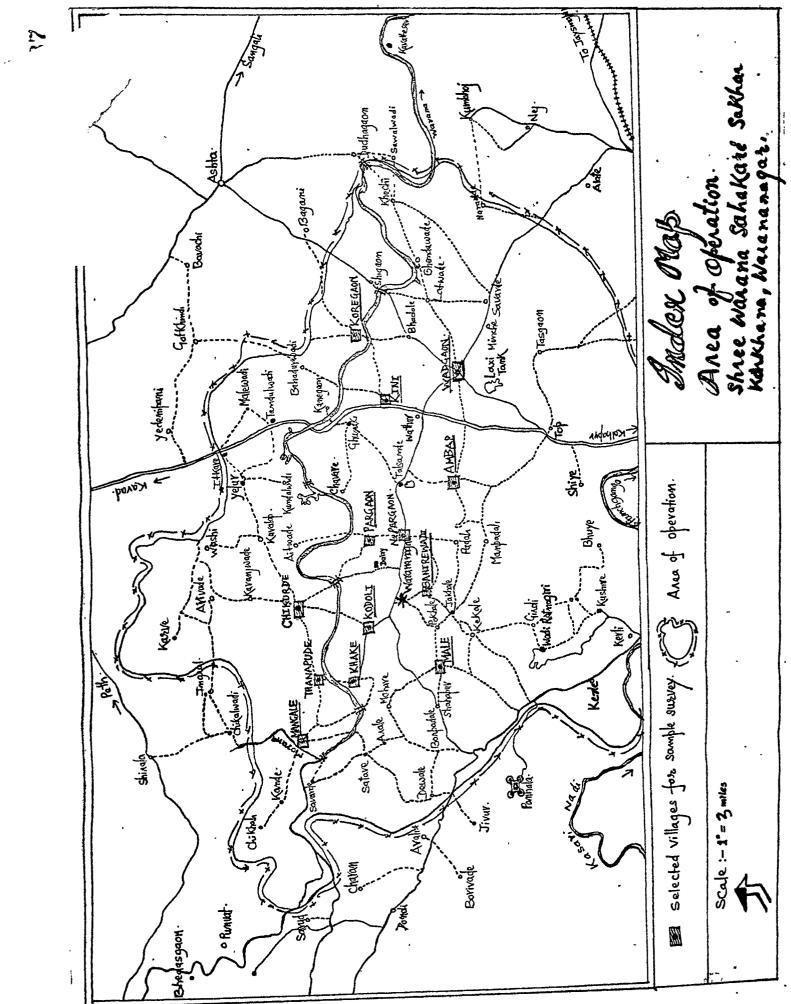
one is dependent on the river water and the other on the well water for cane irrigation.

The villages selected for sampling the cane cultivators are as follows :

Block No. 1 : Kodoli, Kakhe.
Block No. 2 : Pargeon, Bahirewadi.
Block No. 3 : Kini, Vadgeon, Bhadole.
Block No. 4 : Mangle, Thenapude.
Block No. 5 : Tandulwadi, Koregeon.

In Block No. 3, we have selected three villages, Vadagaon, is the only village under S.W.S.S.K., which receives water facility from a tank.

From the records maintained by the Marana Karkhana, it appears that 85% members have less than 2 acres under cane cultivation. 12% members have 2 to 5 acres under cane cultivation, 2% members have 5 to 10 acres under cane cultivation and the percentage of members cultivating more than 10 acres is only 0.4%. While selecting the sample cane cultivators the above information procured from the Karkhana was taken as the basis. Ten farmers from each of the above mentioned villages are selected of which 7 farmers cultivate less than 2 acres, 2 farmers cultivate 2 to 5 acres. One farmer 5 to 10 acres, farmers with holdings more than 10 acres were dropped for lack of response.



3.3 Conduct of the Survey :

After selecting the villages and farmers, researcher started visiting these villages to collect the required information. Some of the farmers contacted were rather reluctant to furnish the required information while others could not be contacted inspite of repeated attempts to meet them. Due to the hesitation of farmers to supply the information, inadequate records maintained by the farmers, reluctance on the part of farmers, and illiteracy, adequate data could not be obtained from the selected sample.

Since the required information from the selected sample elements could not be collected, information from other farmers of nearby villages was gathered. This resulted in a difference in the sample selected initially and actual sample from which information was gathered subsequently. The following villages were actually visited and the data was gathered.

Block	NO.	1	1	Kodoli, Khake.
Block	No.	2	-	Ambap, Pargaon, Bahirewadi, Male
Block	No.	З	: 2	Kini, Vadagaon.
Block	No.	4	\$	Mangle, Thanapude, Chikurde.
Block	No.	5	1	Koregaon.

It took approximately 6 months to collect the required data. The sample does not represent the farmers

cultivating more than 10 acres of land under cane crop. This is so because the big farmers did not give any information in respect of their cost, output, income etc. We tried to overcome this difficulty by approaching the factory. But it was observed that these big farmers supplied the cane in the name of their family members. Besides some farmers supplied cane in the name of others not belonging to the family relations closely. It is also surprising to note that, the land under cane crop of some farmers according to factory records and the actual land under cane crop do not tally.

The farmers from above mentioned villages were visited personally and interviewed with the help of questionnaire (Appendix-1). The questionnaire was filled in in their presence. While collecting the information with the help of questionnaire, discussions were made with farmers as to the greater details of cost of cultivation.

We met 108 farmers living in above mentioned 12 villages. Out of which, 77 farmers had less than 2 acres of land under cane crop, 26 farmers had 2 to 5 acres of land under cane cultivation and 5 farmers in the range of 5 to 10 acres. The sample represents 71.4% farmers having cane crop under less than 2 acres, 24.08% farmers having cane crop under 2 to 5 acres and 4.62% farmers having cane crop under 5 to 10 acres. Moreover, those farmers having land under cane crop less than 2 acres\_are divided into two groups - (1) farmers having less than one acre of land and (11) farmers having 1 to 2 acres of land under cane crop. The first group covered 37 farmers and the second 40 farmers. Their percentage to total sample is 34.4% and 37% respectively.

For the purpose of easy understanding the farmers of the sample are divided or grouped into four district categories. These are :

- 1) Category-I : Farmers having less than 1 acre cane crop.
- 2) Category-II : Farmers having more than 1 but less than 2 acre crop.
- 3) Category-III : Farmers having more than 2 but less than 5 acres crop.
- 4) Category-IV : Farmers having more than 5 but less than 10 acres crop.

This grouping is intended to test the hypothesis which says, "The cost of cultivation varies with the change in the size of land under cane cultivation."

The information relates to the cane season 1980-81 and was collected during May 1982 to December, 1982. 3.4 Analysis of Sample Data :

Here we give the analysis of data in respect of 108 farmers (i.e. sample), who are members of Shri Warana Sahakari Sakhar Karkhana, Marananagar, and are supplying their cane to the sugar factory.

### 3.4.1 Size of the Land Holdings :

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The total land holding of each farmer is shown in Table No. 1.

### TABLE NO. 1

Size of the land Holding	Farmers	% to Total Sample Units
Less than 2 acres	9	8.34
2 to 5 acres	48	44. 44
5 to 10 acres	38	35.18
ló tó 20 acres	9	8.34
Above 20 acres	4.	3.7
Total:		100.00

Classification According to Land Holding

This table shows that 9 farmers possess less than 2 acres land, and 48 farmers hold 2 to 5 acres each. It also shows that 38 farmers have 5 to 10 acres each, whereas 9 farmers possess in between 10 to 20 acres of land. The farmers who possess more than 20 acres of land are only 4 in number. Out of the total sample, 44% units lie in the range of 2 to 5 acres and 35% in the range of 5 to 10 acres of land holding. It means, most of the farmer's (79% of sample) land holding is more than 2 acres but less than 10 acres.

### 3.4.2 <u>Size of the Holding under</u> <u>Cane Cultivation</u> :

Table No. 2, shows the land cultivated under the cane crop of each category of farmers out of their total land holdings.

### TABLE NO. 2

Classification of Farmers according to holding under Cane Cultivation.

<b></b>	Size of the Holding	No. of Farmers	
I	Less then 1 acre	37	34.36
II	More than 1 but less than 2 acres	40	37.04
III	More than 2 acres but less than 5 acres	<b>26</b> · ·	24.08
IV	More than 5 acres but less than 10 . acres	5	4.62
V	Above 10 acres		~
	Total *	108	100.00

We can say that, the farmers do not bring under cane cultivation their entire holdings.

As pointed out earlier, the units of sample are divided into 4 categories i.e. the farmers having land under cane crop less than one acre grouped in I category, One to two acres, grouped in II category, two to five acres grouped in III category, five to ten acres grouped in IV category.

According to Table No. 2, it is seen that 37 farmers i.e. 34.4% of the sample, are included in category No. I. In the category No. II, there are 40 farmers, which account for 37% of the sample. It means that about 71.5% of total sample units have less than 2 acres land under cane crop. 26 farmers are grouped in category III and 5 farmers are in IVth category. It also means that 24% of total sample is in the category III and 4.6% in category No. IV.

### 3.4.3 <u>Classification on the basis</u> of Irrigation Facilities :

Table No. 3 shows the classification of cane cultivators by sources of irrigation.

### TABLE No. 3

Classification on the Basis of Irrigation Facilities utilised

	No. of Farmers	
l) Wells :		
a) Owned	72	66 .67
b) Hired	6	5,55
2) River :		,
a) Private Schemes	34	31,49
b) Cooperative Schemes	<b>. 7</b>	6,48
3) Tanks	1	0.09

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As per Table No. 3, nearly 78 farmers utilize well water and 41 farmers are dependent on the river water. Due to the scattered fragments of land, 20% farmers rely on wells as well as river water.

It can also be seen from Table NO. 3, that 72% farmers are dependent for their water need on wells. Moreover, of the farmers who utilised water from river. 31% of them have their own irrigation schemes and 6% are receiving water

from cooperative irrigation schemes. Some farmers get water facility on rental basis also.

Most of the farmers depend on well water because -(i) cost of lift irrigation is compatively more expensive especially as the distance of the farm from the river increases. (ii) Warana river bed go dry in the summer season. (iii) The farmer independently and comparatively more easily, can dig the well and use water according to his convenience.

### 3.4.4 <u>Classification According to</u> <u>Plantation or Ratcon</u>:

The cane is planted every year to take maximum yield per acre. When the new plantation of cane is grown, for 18 months - it is called 'Adasali'. Whe reas the cane grop grown upto 14 to 16 months, is called 'Aksali'. Some farmers resort to 'Ratoon', in order to avoid primary tillage cost, plantation cost and to take the crop earlier.

Table No. 4, shows the number of farmers who take the crops by plantation, rateon or both. From this table we can see that only 7% farmers take cane crop in the form of rateon. This is mainly due to the extremely low yield per acre in case of rateon.

### TABLE No. 4

Classification According to Plantation or Ratoon

Kind	No. of	Perce-
	Farmers	ntage
診る目を目を目を目を目を目を目を目を目の		
Plantation	69	63.88
(Adasali/Aksali)		
Ratoon (First or	8	7.4
Second)		
Plantation and	31	28.72
Ratoon		
	مېرى دارى دارى مېرى تېرىپان تارىخ	دوری بدی میں خود میں کر اور اور اور اور اور اور اور اور اور او
Total :	108	100.00
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### 3.4.5 Average Yield per hore :

The yield of cane per acre is the most important factor because the factories pay the cane price in relation to the per tonne and not in relation to per acre. Naturally, those who have higher yield or tonnage per acre, earn much more than those who have lower production of cane per acre in tonnage. Normally, the farmers do not have an accurate information about their production, so it has to be taken from the 'Tonnage Slips', given by the sugar factory. But in few cases there is one difficulty i.e. of counting the actual production of each farmer, because some small cultivators give their cane crop to the factory in the name of some other farmers. Therefore, the data of cane yield of each farmer is confirmed by paying personal visits to each farmer.

Table No. 5, shows the actual average of cane yield of the farmers belonging to four categories.

of the sample, a little more than 12% farmers have the average cane yield of less than 20 tonnes per acre. This is supposed to be not viable. In relation to the cost of production the yield per acre must be atleast 25 to 30 tonnes so that they can cover atleast variable cost. 30% farmers of the sample produce 31 to 40 tonnes on an average. Moreover, 24% farmers' yield is between 21 to 30 tonnes and 20% farmers between 41 to 50 tonnes per acre. Nearly 65% farmers produce more than 31 tonnes per acre. From this table it can be seen that most of the farmers (72% farmers) come in the range of 21 to 50 tonnes per acre. The average per acre yield of the sample is 37 tonnes.

If we consider the cane yield by groups, most of the farmers of the 1st group come in the range of 21 to 50 tonnes of production per acre. Some marginal farmers of I,II and III groups produced more than 60 tonnes cane per acre but such farmers are not found in the IVth category. The farmers, who produce less than 30 tonnes of cane per acre are large in number in the II and IIIrd category. According to most of the cane cultivators, following are the reasons of variation in cane yield per acre :

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		Perce- ntage	II	Perce- ntage			TV	kerce ntage	Total	Total Per- centage
Upto 20 tonnes	~	50°	Ø	D. C	ო	2.77	ŧ	1	13	12.1
21 to 30 tonnes	0	8.33	C	6.48	¢)	8,33	ri	6•0	26	24.1
31 to 40 tonnes	5	9,25	C T	12.03	Q	5,56	ርሳን'	2.77	32	29-6
al to 50 tonnes	10	9.25	Ó	5.56	ŝ	4.62	<i>₽</i> -4	6•0	22	20.3
51 to 60 tonnes	4	3.7	N	7•8	Ч	6 <b>°0</b>	ì	ł	i-	6 <b>.</b> 5
61 to 80 tonnes	2	3°T	m	2.37	N	<b>1</b> ,0	ť	•	5	6.5
Above 90 connes	f	ł	r-l	6•0	ş	1 -	t	Ì	ri	<b>6.</b> 0
Total of each category	37	riges and traditional states of	8	and and the second s	26	an state and the second state of the second	(L)	Total No.of	108	00

- 1) Inadequate water supply reduces cane yield.
- 2) Quality of land affects production.
- 3) Farmers may use more fertilizers if there is adequate water supply. Application of more fertilizers may increase yield of cane.
- 4) Personal attention to cane crop regarding weeding, watering, use of fertilizers, protecting crop from pests and diseases, increases cane yield per acre.

### 3.4.6 Analysis of cost of Cane Cultivation :

In Chapter No. 2 we have fully discussed various items of cost of cultivation in an explanatory way. The cost of sugarcane can be broadly classified into two heads. The first is 'Fixed cost' and the other is 'Variable or Crop Cost'. Here these cost items are examined on the basis of actual cost data.

### 3.4.7 Fixed Cost :

The case growers need to spend a large amount in the form of 'fixed capital investment'. The term fixed capital includes permanent and long term asset facilities such as - buying a land, digging a well, purchasing an electric motor or oil engine, pump sets, pipe lines, bullocks, carts, plough, harrow, tractor, cost of soil conservation etc.

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### Term Equipments Utilised

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-	1) Oil Engine	ហ	4.6	5005	6.0	-1	6.0	L	6.48
2)	Electroc Notor	10	56.5	23	21.3	м	2.77	63	80.56
ଚ	Larthed Plye Line	83	6*88	18	16.7	(7)	2.77	0 0	58.33
	4) Tractor, Trailer	ო	2.77	~	Q T	<b>r4</b>		Ŵ	5.56
6	5) Bullocks, Carts	м М		er T	12,3	Ŵ	8.1	38	35,18

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3.4.7-A. Farm Equipments Utilised :

Table No. 6 indicates various types of farm equipments possessed by the farmers. 80% farmers have motor pump sets and 6% farmers possess oil engines. The motor pump sets are comparatively less costly than the oil engines. So most of the farmers prefer electric motor pump sets. 58% farmers have underground pipe lines. Most of the farmers carry out the tillage activities (operation) with the help of bullocks. Nearly 35% farmers own their bullocks, carts, plough, harrow etc. Only 6% farmers have their own tractors, trailers and other modern farm equipments. Besides above equipments all farmers have their own ancillary and sundry farm equipments.

The farmers, who possess farm equipments such as bullocks, cart, tractor, trailers, plough etc., do not strictly use them for themselves. They may hire these equipments to other farmers also. In such circumstances, it is difficult to measure the cost of such equipments for sugarcane cultivation. So we have assumed that (eventhough farmers have invested some amount in such farm equipments), farmers used such equipment services on hire basis.

### 3.4.7-B <u>Fixed Capital Investment</u> <u>Per Acre</u>:

The fixed capital investment is calculated in the following manner. First, we consider, the cost incurred on various capital assets - like digging well, pipe line, motor pump, oil engine, bunding, levelling etc. Then we divide this cost on the basis of actual area of land covered by each capital asset. For example, a motor pump, costs Rs. 5000/-. Using that motor pump a farmer irrigate 5 acres. It means cost of motor pump per acre is Rs.1000/-.

Here in fixed capital investment, the expenditure incurred on well digging before 1965 has not been considered. Moreover, as mentioned above we do not consider investment on bullocks, carts, tractor and its farm equipments.

The fixed capital investment (excluding land investment) of different farmers belonging to the different categories is shown in the Table No. 7.

From Table No. 7 We know that 48% of farmers have invested in the range of Rs. 300/- to Rs. 2000/- per acre 25% farmers have invested Rs. 2000/- to Rs. 6000/-. Of the sample, 26% farmers invested Rs. 6000/- to Rs. 10000/- per acre. This is a considerably heavy investment as they have dug their own wells or expanded large sums on laying pipe lines. The farmers who have spert upto Rs. 1000/- per acre, TABLE No. 7

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Fixed Capital Investment per Acre (Excluding Land Investment)

				0	atego	Category of Farmers	Derg		Tot-	Perce.
	H 1	Jerce ntage	H I	Perce- ntage	HII I	Ferce- ntage	IV.	Perce- ntage	el	ntage
Less than 300/-	0	<b>1</b>	2	со <b>,</b> г1	ł	ł	ŧ	ŝ	4	3.7
500/- to 1000/-	Ø	7.4	ហ	4.6	4	0°1	1	6•0	18	<b>16.</b> 8
1001/- to 2000/-	er T	12*0	្ព	9.25	Ø	5.50	~1	G∙Ó	30	27.8
2001/- to 3000/-	Q	5.56	4	3.7	٢	6.48	-1	6°0	18	16 .7
3001/- to 4000/-	r-i	6.0	1	6•0	~-)	6.0	;	I	ŝ	2.7
4001/- to 500/-	ŝ	ŝ	4	<b>i</b>	24	6* Q	ł	I	ri	0. 0
5001/- to 6000/-	rsi	6*0	¢†	3.7	m	6.0	Į	ł	Q	ហ ហ
6001/- to 10000/-	Ŷ	5.56	41	19.96	Q	5.56	ſV	1.8	28	25.9
Total of each category	37	an con and an an an an an	<b>6</b>		26	a a anti-anti-anti-anti-anti-anti-anti-anti-	ß	Total No.of Farmers	108	001

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have only ancillary and sundry farm equipments. Here, we do not add the investment made in the form of land, in the capital investment.

The cone crop requires 15 to 18 months for full growth. So, the interest on the fixed investment is calculated for 18 months at the prevailing rate of interest i.e. 15% per annum. Besides, the depreciation of capital assets is calculated by assuming their estimated life to be 10 years (in case of motor pump, oil engines, pipe lines). Thus interest on fixed capital investment and depreciation on capital assets have both been added to the fixed cost.

From Table No. 8 it is clear that the total fixed cost of cane cultivation is in the range of Rs. 50/- to Rs. 5000/- per acre. Of the total sample, 63% farmers have incurred fixed cost Rs. 100/- to Rs. 1100/-, 4% farmers incurred fixed cost of Rs. 1100/- to Rs. 1500/-, 18% farmers incurred fixed cost of Rs. 1500/- to Rs. 2500/- and in case of 11% farmers' this range is Rs. 2500/- to Rs. 5000/- per acre.

In this calculation we did not include interest on land investment. Here the land investment is equal to imputed value of land at the current generally quoted price of the land. TABLE NO. 8

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Total Fixed Cost Per Acre (Excluding Interest on Land Investment)

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Fixed Cost in	i I	•		0	ateco	Catecorv of Fa	Farmers		Total	Perce
Rs.	н	I Perce- ntage	IT	Perce- ntage	III		ΛŢ	Perce- ntage		ntage
50/- to 100/- 4 3.7	5	3.7	S	4.6	m	S. S	-	6*0	n n n	12.03
300/- to 500/-	7	10.18	Ô	7.4	5	ណ្ ខ្	ł	\$	26	24.08
501 to 700/-	8-	່ <b>ດ</b> ບ	Q	5.55	m	2.8	<b>f=1</b>	6°0	CT FT	15.8
01/- to 900/-	N	<b>7•</b> 8	Ŵ	2.8	ហ	4 ¢	r-1	6•0	11	10.1
901/- to 1100/-	ri	6*0	~	6*0	\$	ł	ł	•	N	1.8
101/- to 1300/-	57	2.8	ļ	:	*		ï	1	m	3 <b>-</b> 8
1301/- to 1500/-	1	8	¢Ì,	8•1	N	00 ###	ŧ	•	7	() ()
1501/- to 1700/-	M	2.8	~	6.0	ŧ	ţ	ŧ	ł	বা	<b>L</b> * 0
1701/- to 1900/-	\$	4	4	3.7	mi	6.0	8	ł	រោ	4.6
1901/- to 2100/-	N	<b>0</b> •1	ei	6•0	ŝ		rri	6•Q	Ą	а.ч
2101/- to 2300/-	m	6•0	ო	8.2	1	1	\$		4	3.7
2301/- to 2500/-	r-i	0.9	-1	6•0	I	ţ	1	t	N	1.8
2501/- to 3000/-	ł	\$	<b>N</b>	7•8 7	N	1.8	1		7	3.7
3001/- to 4000/-	£)	6.0	ł	1	2	1.8	rl	6•0	ų	3.7
4001/- to 5000/-	2	0 0	ო	2.8	ы	6*0	ł	*	ស	4.0
Total of each catemery	16		\$	and the same state of the same	26		5 IS	a aji tarata ita 111. E.T. A. A.	108	100.00
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Following are the causes of varying total cost per acre - (i) Differences in the quantity and quality of farm equipment. (ii) Those farmer's who do not have their own well or underground pipe line or motor pump sets, have lower total fixed cost. (iii) In case of farmers who dig wells, having inadequate water, per acre fixed cost is high. (iv) Total fixed cost tends to be higher in case of farmers who spend money on soil conservation.

### 3.4.7-D. Total Fixed Cost - Per Acre (Including Interest on Land Investment)

Like other industry, agriculture is also an industry. So, while measuring total cost of production, we must count cost incurred on land investment. This is one of the major demands of the farmers' agitation. It means we must count interest on investment in acquiring the land. Therefore, it is suggested that the reasonable amount of interest on land value under cane crop be added in the fixed cost.

While collecting the data concerning the value of land holdings the following information was gathered :

1	No. of Farmers	Estimated Value of Land (Per Acre)
,	17	Rs. 20,000/~
	53	Rs. 30,000/-
	<b>.</b> 39	Rs. 40,000/-

The farmers who furnished this information strongly felt that interest on the investment in land should be included in the total cost.

Table No. 9 helps to reveal the total fixed cost of cane production by considering all the ingredients of the fixed cost. These are (i) reasonable interest (15%) on land investment (ii) interest (15%) on fixed capital investment (iii) depreciation on capital assets, (iv) interest on cost of soil conservation.

From Table No. 9 we can see that the total fixed cost is between the range of minimum Rs. 4000/- and maximum Rs. 14000/- per acre. 7% farmers have incurred total fixed cost upto Rs. 6000/-. 40% formers in the range of Rs. 6000/- to Rs. 8000/- and 54% farmers in the range of Rs. 8000/- to Rs. 10000/- cost per acre.

Those farmers, who incurred more than Rs. 10000/per acre as total fixed cost show very high fixed cost because of large sums being spent on vells, motor pumps or engines, pipe lines etc. But because of inadequate water supply in both cases, average per acre investment cost seems to have increased.

3.4.8 Variable Cost (Crop cost) :

The variable cost of cane crop is that cost which is required to be incurred during the period of cultivating TABLE No. 9

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# Total Fixed Cost Per Acre (Including Interest on Land Investment, Interest on Capital Investment and Depreciation)

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Mixed cost in		Mixed cost in Cetegories of Farmers Total Perce-		Cetegories of	es of	Farmers			Total	Terce-
Rs. I Porce- ntage	H 1		LI I	Perce-	III-	II Ferce- III Ferce IV Ferce- ntage ntage ntage	A T	Perce ntage	1	ntage manuellense
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4001/- to 6000/-	ഹ	4.6	ŧ	1	Ŵ	0 0	ŧ	3	Ŏ	7.4
6001/- to 8000/-	51	12.0	19	13.9	75	17.1	ri	0.0	41	37.9
8001/- to 10000/-	12	11.1	15	6°et	ထ	7.4	Ť	8 <b>.</b> 8	68	36,2
10001/- to 12000/-	ţ.	6.48	5-	648	ŝ	1.8	ł	ŝ	91	14.8
12001/- to 14000/-	1	ŧ	~	80 • 1	r-1	6.0	1	1	-M	2° 2
Total of each category	-	37	\$	· 아이	26	a an	ത	and the set of the set of the set	108	100

the crop. Descriptive explanation of all these variable cost items has been given in Chapter-II. Now, the actual variable costs incurred by the farmers are analysed in detail in the following paragraphs :

3.4.8 (A) Primary Tillage :

Before planting the cane crop, the farmers have to carry out the primary tillage operation. Sugarcane crop requires a thorough and clean preparation of land. Ploughing, cross ploughing and harrowing operations are done for this purpose. It was found that ploughing by tractor cost Rs. 150/- to Rs. 200/- and by bullocks upto Rs. 100/- per acre. For the year 1980-81, the bullock ploughing charges were assumed to be Rs. 20/- for a pair per day.

For the cane cultivation labour service is necessary. We assumed that farmers paid Rs. 5/- to a labour per day. It is assumed that the labour required for all the activities of cane cultivation is hired. Naturally, cost of self labour of the cultivators is included in the labour cost. Labourers are put to work for removing the waste materials, making ridges and furrows, cross furrows, weeding, watering etc.

The cost of making ridges and furrows per acre is Rs. 50/- to Rs. 100/-. If farmers use bullocks for this work they incur a cost of Rs. 50/- to Rs. 70/- and if they use tractor, the cost comes to Rs. 100/- per acre.

In case of ration, the farmers need not go through the primary tillage operation. It saves the expenditure on the ploughing, harrowing, making ridges and furrows, plantation etc. But other operations such as collecting the stripped out old leaves of cane, wastage of previous cane crop, earthing up, making cross furrows are required.

Out of the total sample, 8 farmers have ration crop, 69 farmers have new plantation and 31 farmers have ration as well as new plantation crop. In case of farmers who have taken ration crop, primary tillage cost and plantation cost are not taken into consideration.

Table No. 10 shows the expenditure incurred on primary tillage by 100 farmers. 26% farmers have incurred this cost in the range of Rs. 150/- to Rs. 200/-, 35% farmers, in the range of Rs. 200/- to Rs. 300/-. These cultivators incurred much less primary tillage cost, because the cane crop was taken in the land which was used previously for paddy crop.

In case of remaining 39% farmers, cost on primary tillage was in the range of Rs. 300/- to Rs. 700/-. It means they had to spend more on this item, because they performed all the primary operations such as - ploughing, cross ploughing, harrowing, clod-crushing, removing the TABLE NO. 10

# Cost of Primary Tillage Per Acre

certingererererererererererererererererererer			Catégories	es of	Farmers		Total Perces	Perce
-	H	Perce- ntage	II Perce- ntage	H I	Perce- ntage			
150/- to 200/- 13	13		Ø	4			26	26
201/- to 250/-	Q		4.	10		r.	21	12
251/- to 300/-	4		ß	ず		-1	14	た
301/- to 350/-	ณ		ñ	~			0	0
351/- to 400/-	ហ		4	н		Ч	11	
401/- to 450/-	ίN		m	M		ł	හ	ø
451/- to 500/-	1		ო	ł		ŧ	n	м
501/- to 550/-	ł		т	Ч		н	S	6
551/- to 600/-	1		1	Ч		1	~	Ч
601/+ to 700/-	Ч		e1	•		ł	Ņ	2
. Total :	33		36	26	th th as do th an to the	ŝ	100	001

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wastage of previous crop etc. in the land, where previous crop was fatoon or jawar etc.

The average primary tillage cost of the sample is Rs. 353/-. In case of nearly 69% farmers, this cost is less than the average tillage cost.

### 3.4.8 (B) <u>Cost of Cane Seeds</u> -<u>Per Acre</u> :

After completion of the tillage, the cane crop is planted. Most of the farmers use their own earlier cane crop as cane seed. Some farmers use seeds from sugar factory or cane seed farms. Those who use external seeds have to pay more because transportation cost becomes the additional cost item. Moreover, prices of such seeds are higher because they are commercially cultivated.

The traditional method of planting (2 to 3 buds seeding method) requires 10 to 12 thousand cane pieces (seeds) or 2 to 2.5 tonnes of cane. Single bud seeding method of plantation requires 6000 to 65000 cane pieces (seeds) or 1 to 1.5 tonnes of cane.

Table No. 11 indicates that cost of cane seeds per acre varies between Rs. 100/- to Rs. 600/-. Only 5% of fermers' cost on this item was between Rs. 101/- to Rs.200/-. Nearly 70% of farmers' cost on this item is less than Rs. 400/- but in case of 30% of farmers, this cost is in the range of Rs. 400/- to Rs. 700/-. TABLE No. 11

Cost of Cane Seeds Per Acre

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Cost in Rupees			Categories of Ferners	90 OF	Ferners			Total	PORCOL
	н	Perce- I ntage	II Perce- ntage	TII	Perce- ntage	T AT			ntage
经常销量结查过金过金过多过多过多过多过多过多过多过多过多过多过多过多过多过多过多过多过多过		n an	호터로 탄료 탄료 <b>진도</b> 1				Ĩ.	태도타 = 아프라 = 아프라 = 아프라 =	
lol/- to 200/-	r-i	Ч		ო		ł		ស	٢
201/- to 300/-	51 J.3	16		Ø		n		39	39
301/- to 400/-	Q	F		9		m		23	23
401/- to 200/-	Ø	Q		<u></u> m ,		ы		61	19
501/- to 600/-	щ	4		4		03		11	2
Above 600/-	t	N		ल		ł		n	M
Total :	33	36	i chy new taith and main main state con	26	الركبة بليان فتبة إنتنا المراد منه ولم خاريا	۵,		100	100

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The farmers who use internal seeds (their own farm seeds) single bud seeding method or seeds from top shoots, require less cost, but those farmers, who used traditional plantation method, or seeds purchased from sugar factory, or whose plantation germinated incompletely have to incur much more cost on seeds.

### 3.4.8 (C) <u>Lebour cost of Plantation</u> <u>Per Acre</u> :

Cane plantation requires large number of labourers. This operation includes the cutting of cane, stripping of cane leaves, recutting the cane into small pieces, carrying the seeds to the place of plantation, spreading the pieces all over the field, earthing seeds in trenches, making proper ridges, mixing the fertilizers in soil, making cross furrows etc.

Data from Table 12 reveals the labour cost of plantation of the various farmers of the sample. From this table it can be observed that 32% farmers spend upto Rs.100/-, 30% farmers Rs. 100/- to Rs. 150/- and 26% farmers spend in between Rs. 151/- to Rs. 200/- on plantation labour cost. Alternatively we can say that 88% farmers spend upto Rs.200/for plantation.

Some farmers face certain difficulties such as inadequate water supply, fluctuating power supply, carrying seeds from long distance etc. In such cases, they have to spend more on labour services. TABLE No. 12

Labour Cost of Plantation Per Acre

Cost in Rupees			(Lang	categories of varmers		81001		,	Teror.	-00102
I Perce II Perce III Ferce IV Perce ntage ntage ntage ntage ntage ntage		Ferce- ntage		Perce- ntage	III	Ferce- intage	AT I	Perce- ntage		ntage
80 <b>/-</b> to 100/-	TT	<b>F</b> -1	or		or		m		32	32
101/- to 150/-	Ø	8-13	12		Ø		Ч		8	30
151/- to 200/-	ri Li		Ø		r		ł		26	26
201/- to 250/-	ŧ		m		Ł		ы		4	4
251/- to 300/-	Ч				ы		н		Ţ	4
Above 301/-	m		~		ł		Ч		4	4
Total :	33		36		26	l set an experiment of the set of	۱ س	. الله عبد الله "كلي الله جد الله ي	100	100

### 3.4.8 (D) <u>Cost of Weeding</u> <u>Per Acre</u>:

Weeding out is necessary because weeds hamper the healthy growth of cane crop. Weeds are the plants, which grow where they are not wanted. They grow in the fields where they compete with crops for water, soil, nutrients, light and space and thus reduce crop yields.

In case of lands where growth of weld plants is scarce and scanty, weeding cost is less, but where the weed plants are thick and are germinated again and again, weeding out operation costs increase. Most of the farmers undertake weeding out 3 to 4 times during the crop's life span.

From Table No. 13 it can be observed that cost of weeding per acre is, minimum Rs. 150/- and maximum Rs.600/-. It is generally observed that expenditure on weeding varies directly with the frequent growth and thickness of weeds in the sugarcane farms. In our sample, 56% farmers spent Rs. 150/- to Rs. 300/- and remaining 44% farmers spent in the range of Rs. 301/- to Rs. 600/- on weeding out operations during the sugar cane crop.

### 3.4.8 (E) <u>Cost of Earthing-up and Making</u> <u>Cross Furrows - Per Acre</u> :

The earthing-up operation is essential for cane crop for following reasons. (i) It helps in steady growth. (ii) It assists the firm rooting of the crop. (iii) It make

### TABLE No.13

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## Cost of Weeding Per Acre

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Cost in Rupses		Cost in Runces Categories of Farmers Total Perce-	-	Categories of	es of	Farmers			Total	Perce
I Perce II Perce III Percentrage ntage	1-1	Perce- ntage	H	Perce- ntage	TII		JL	IV Perco- ntage ntage		ntage
150/- to 200/-	ហ	4.6	С С	6.9	ង		1		19	17.6
201/- to 250/-	v	5°50	4	3.7	Ÿ	3.7	<b>\$</b> ,	1	77	12.9
251/- to 300/-	12	11.1	6	ຕ• ຕ	Q	s. 50		6•0	28	25*9
301/- to 350/-	ŝ	8° 8	n	<b>4</b> .6	ጠ	5°0	1	ł	1-1 1-1	10.1
351/- to 400/-	Q	5 <b>*</b> 50	ហ	4.6	ф	3.7	ო	ŧ	୍ମ	Ф С
401/- to 450/-	ri	6•0	ហ	4.6	বা	3.7	t	ł	Ŷ	6
451 to 500/-	m	6°0	n	<b>2.</b> 0	ł	ŧ		6*0	ທີ	4.6
501/- to 600/-	ũ	2°8	ł	ŧ	I	ŧ	ŧ	ł	ŝ	2.8
Total of each category	37	ing the set of the set of the set of the set	6		26		ĥ	fithe structure of a pay. He sets and	108	100

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watering of the crop easier whether the crop is plantation or ratoon, the earthing up is necessary. The soil between two for the earthing up is necessary. This is called earthing up operation. This operation is done 3 or 3.5 months after plantation. If the area of cane farm is less, then this operation is done by manual labour and if the holding is large it is done by bullocks using the ridger. Manual labour is costlier than use of bullocks. After earthing up operation, cross furrows are made by using manual labour. Cross furrows are essential for effective and easy watering. Generally, farmers give large doses of fertilizers at the time of earthing up.

In Table No. 14, the cost of earthing up and making cross furrows is shown. This cost ranges from Rs. 40/- to Rs. 230/- per acre. Nearly 76% farmers incurred this cost between Rs. 51/- to Rs. 150/-. Average cost of earthing up and cross furrowing of the sample is Rs. 130/-.

We must note here one important thing that the efficiency of hired labour or bullocks is less than self labour and owned bullocks. Those farmers who rely on hired labour or bullocks have to spend more money.

### 3.4.8 (F) Farmyard Manure Cost -Per Acre :

Manure and fertilizers from a very important cost factor in sugarcane cultivation. Use of manures and TABLE NO. 14

Cost of Earthing up and Making Cross Furrows Per Acre (Cost Per Acre)

40 Cost in Rupees			ē	Categories of Farmers Total Perce-	of Fe	umers			Total	Perce-
I Perce II Perce III Perce IV Perce- ntage ntage ntage ntage	н	Perce ntage	, H	Perce- ntage	TTT	Perce- ntage	τv	Perce- ntage		ntage
40/- to 50/-		6*0	<b>,</b>	6°0	<b>6-1</b>	- 6•0		l l	ň	3.1.8
51/- to 100/-	13	12.0	24	22 - 2	16	14.8	N	1°0	្លួះ	6° 03
101/- to 150/-	10	9.25	Ø	0°*0	O	5.56	'n	2.7	28	25.9
151/- to 200/-	12	1.11	ົທ	4.6	н	6•0	` <b>\$</b>	ł	18	16.7
Above 200/-	, et	<b>6</b> °0	ri	6•0	2	1.8	ĩ	¥	4	3.7
Total of each category	37	nie der ein nie für mit der für die	40	40	56	nê vin en de vrîvin diren s	In		108 100	100

fertilizers increases the yield of cane. It is found that the farmers use different types of farmyard manures such as compost, green manure, press mud, cattle dung, sheep dung, poultry manure, tobacco dust etc. Very few farmers viz., 2% farmers use green manures like - dhancha hulagi and jut.

Almost all the farmers use compost and cattle dung for cane crop. A cart of compost is assumed to cost Rs. 20/-. In the cost of farmyard manure, the following costs are included - the cost incurred on compost, cattle dung, sheep dung, press mud, poultry manure, tobacco dust etc. which are used by farmers.

Table No. 15 shows the farmyard manure cost of the sample. From this table it can be observed that, farmers incurred a minimum cost of Rs. 50/- and maximum Rs. 1000/-. Out of the sample, 70% farmers spent on this item in the range of Rs. 300/- to Rs. 600/-. The average farmyard manure cost of the sample is Rs. 500/-.

How much farmyard manure is used by the farmers depends on the availability of it. But if the farmers use more quantity of farmyard manure, less quantity of chemical fertilizers is used. Generally, farmers use more farmyard manure for cane grops and less for other crops.

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## Farmyard Manure Cost Fer Acre

Cost in Rupces			Cat	Categories of Farmers Total Berge	Of Fa	Farmers			Total	Berce
	H	Perce- ntage	II	Perce- II Perce- III Perce- IV Perce- ntage ntage ntage ntage ntage	LII	Perce ntage	PL I	Perce- ntage		ntage
50/- to 100/-	ţ	ł	~	6•0	Ы	6°0	İ	ŧ	N	1.80 1
101/- to 200/-	m	2.3	9	5.56	ស	4.6	N	0. T	<b>J</b> 6	14.8
201/- to 300/-	Ø	e.a	5T	12.0	ý	5,56	ଟ୍ୟ	<b>1.</b> 8	30	27.8
301/- to 403/-	13	10.1	9	5.56	ഹ	4.6	rd	6 <b>•</b> 0	23	21.3
401/- to 600/-	ಣ	2.00	5	6 •4	5	6 • 4	Ł	<b>2</b>	22	20.4
601/ <b>-</b> to 300	ហ	4.6	4	3.7	2	9° <b>1</b>	t	ŧ	TT	10.1
801/- to 1000/-	r-1	6•0	ന	2°0	ł	ş	ł	<b>3</b> 3	4	5
Total of each Ortegory	37		<b>Q</b>	Party with the thirty day that the set	36	and and and an an an an an	5 LO	fage 🗢 stage co un né	108	ool

## 3.4.8 (G) <u>Cost of Chemical Fertilizers</u> - <u>Per Acre</u> :

Farmyard manure helps the rich growth of the crop at its different stages of growth but chemical fertilizers have an instant effect which is rather short lived. Chemical fertilizers contain nitrogen, phosphorous and potash. Farmers buy fertilizers in the form of urea, super phosphet, potash, amonium sulphate and other mixed fertilizers.

Table No. 16 shows cost incurred by the farmers on buying chemical fertilizers. Eventhough farmers use farmyard manure, they also buy chemical fertilizers. From this table, we can say that farmers spend on fertilizers Rs. 450/- to Rs. 3000/-. Out of the sample 50% farmers spent on fertilizers upto Rs. 1000/- and remaining 50% farmers spent in the range of Rs. 1000/- to Rs. 3000/-.

Generally, if the farmers use greater quantity of farmyard manure, they use less quantity of chemical fertilizers. With adequate supply of water the use of chemical fertilisers increases.

### 3.4.8 (H) Total Cost of Fertilizers -Per Acre :

In the total cost of fertilizers we included (1) cost of farmyard manure, (11) cost of chemical

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## Cost of Chemical Fertilizers - Per Acre

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callerations are and the content of			Cat	Categories	of Fa	of Famers	8 1 13 14 14		Total	Perce.
	н	Perce- ntage	II.		II.	Perco- ntage	IV	Perce- ntage		ntage
450/- to 500/- 2	0	1.8			e ~~]	6.0				5 B
501/- to 500/-	174	6*0		6*0	¢1	7 <b>.</b> 0	ŧ	¥	4	3.7
601/- to 700/-	ŧ.	3.7	\$	3.7	r-1	<b>6</b> • 0	1	ł	Ø	8 <b>•</b> 3
701/- to 800/-	ណ	<b>4</b>	'n	2.8	3	1.8	ł	ŧ	01	9,25
801/- to 900/-	m	2*8	n	2.8	ហ	<b>4</b> •6	ri	0. H	73	11.1
901/- to 1000/-	ŧ	1	9	5.56	Ņ	7•8	N	1.8	10	9.25
1001/- to 1100/-	ហ	<b>4.6</b>	N	<b>1</b> ,8	ų	2•8	ł	ŧ	10	9.25
1101/- to 1200/-	ო	2,8	ភ	<b>đ "</b> 6	r-t	6.0	ŧ	ŧ	<b>0</b>	8 <b>.</b> 3
1201/- to 1300	ល	4.6	4	1. 1.	Ω,	2°3	ŧ	E	2	11.1
1401/- to 1600/-	CVj	<b>3</b> •2	~	1.8	ო	2 <b>.</b> 8	. #	ţ	4	0 5
1601/- to 3000/-	5	6 <b>.</b> 5	10	9 *25	ന	3 <b>*</b> 0	~	<b>1.</b> 8	32	20.4
Total of each category	37		â	and the second second second	26	and and the state of the state	ŝ		108	001

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, , fertilizers, (iii) cost of transport of fertilizer,

(iv) cost of application of fertilizer in the field.

The total cost of fertilizer is presented in the Table No. 17.

From this table we can see that farmers spend on this item in the range of minimum Rs. 750/- and maximum Rs. 4300/-. Out of the sample, 10% farmers spent on fertilizers in the range of Rs. 750/- to Rs. 1000/- per acre. Not only big cultivators but small cultivators also spend considerable amounts on fertilizers. Nearly 70% farmers spend in the range of Rs. 1000/- to Rs. 1750/-, and 22% farmers spent on this item in the range of Rs.2000/to Rs. 2500/-. The farmers who spend more on fertilizers have higher yields per acre. Farmers who cannot provide adequate water supply in the summer, use less fertilizers.

While required information was being gathered, in this regard, it was observed that a farmer who was an exception to the other farmers, had spent Rs. 4100/- on fertilizers. Because he has sufficient source of water he uses 40 carts of farmyard manure, 2000 Kg. of various types of chemical fertilizers and got an yield of 93 tonnes per acre.

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## Total Cost of Fertilizer Per Acre

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750/- to 1000/-	ო	8°3	ហ	4.6	n	2.0	ſ	1	II.	1.01
1001/- to 1250/-	ŗ	6 <b>•</b> 5	5	6.5	ហ	4.6	ო	2•3	<b>3</b> 5	20.5
1251/- to 1500/-	Q	හ <b>ං</b> ය	٣	6 °5	Ø	7.4	1	ł	24	22.2
1501/- to 1750/-	Q	5.56	4	3.7	ហ	<b>4.</b> 6	2	ł	15	13 <b>.</b> 9
1751/- to 2000/-	m	2•8	ထ	7.4	r-1	6*0	t	ŧ	12	11.1
2001/- to 2250/-	ヤ	3.7	ບູ	4.6	ণ	1.8	Ч	6•0	12	11.1
2251/- to 2500/-	S	<b>4</b> •6	ń	2 .8	N	1.8	m	6.0	r r	10.1

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2501/- to 4300/-

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Total of each category

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### 3.4.8 (I) Cost of Pesticides -Per Acre :

For the healthy growth of cane crop, some pesticides and insecticides are necessary. Sugarcane crop is vulnerable to several pests and diseases. However, very few farmers (viz. 8.33% of sample), are aware of using pesticides and insecticides. They use organophosphorus, organomercurials, B.H.C., 10%, Sulpher etc.

In Table No. 18, cost of pesticides per acre is presented. From this table, it can be seen that very few farmers use pesticides and insecticides. Their cost on this item is in the range of Rs. 25/- to Rs. 100/- per acre.

## 3.4.8 (J) <u>Cost of Irrigation -</u> <u>Per Acre</u>:

Sugarcane crop always requires artificial irrigation. For artificial irrigation farmers generally rely on wells, tanks, rivers. In Table No. 3, we have seen different irrigation facilities utilized by the farmers of the sample. From Table No. 6, we know that 80.5% farmers possessed electric motor pumps and 6.5% farmers possessed oil engines and 13% farmers received water facility on rental basis. Now we estimate the cost of irrigation provision. This cost comprises electricity charges and cost of oil including the repairing charges of motors and engines respectively.

## Cost of Pesticides per Acre

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deser-provenue-provenue-provenue-provenue-provenue-provenue-provenue-provenue-provenue- Cost in Runces Total Perce-		计事经事材学科学科学科		categor	Categories of Farmers	mers		Total	Perce-
	,	IGIL	Perce- ntage	TII	Percen- tage	IV	Perce-		ntage
x energy exertained are the the	1948년 1948년 1949년 1949년 1949년 194 1949년 1949년 194			t Hana Ha	뼒ᆂ던 # 12 # 12 # 12 # 12 # 12 # 12 # 12 # 1			it the state of th	韓王行事許事許事
25/= to 50/-		Ч		ุญ	8	8	ŧ	m	2-8
51/- to 75/-		Ч		ŧ	ł	Ч	6*0	2	<b>1</b> •8
76/- to 100/-		•		0	B.I.	3	1	~	<b>1</b> •0
Above 101/-		r		;j	6 0	ł	ŧ	~	1.8
	Total :	m	3 248	ហ	5 4.6 I	н	6.0	6	0.9 9 8.33

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## a) <u>Cost of Electricity</u> - <u>Per Acre</u> :

Out of the sample, 87 farmers possessed electric motor pump sets. By the use of motor pump set, they irrigate some portion of their land holdings and the area actually irrigated is considered for dividing the cost of electricity.

From Table No. 19 we can see the cost of electricity of 87 farmers. The minimum cost per acre is Rs. 87/- and maximum cost is Rs. 450/-. Nearly 70% farmers have to pay in the range of Rs. 100/- to Rs. 250/-. Those farmers who irrigate more land by using motor pump set, have lower electricity charges. The wells of some of the farmers get dry in the summer season, hence they cannot irrigate more land. Naturally their cost per acre rises.

## b) <u>Cost of 011 -</u> <u>Per Acre</u>:

For the irrigation purpose, use of oil engine is costlier than the use of electric motor. We find that 7 farmers of the sample possessed oil engines. The cost of oil per acre is calculated in the same manner as in the case of cost of electricity per acre.

From Table No. 20 we can point out that, out of the 7 farmers, 2 farmers incurred oil cost in the range TABLE NO. 19

## Cost of Electricity Charges Per Acre

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		Perce- ntage	н	II Perce- III ntage	HET	Percen- tage	NT I	Perce- ntage		ntage
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87/- to 100/-	-	S. S	4	5.0	I	ŧ	ł	j	ထ	9.19
101/- to 150/-	4	0. 13	11	12.6	ດ	10.3	<u>i</u>	1.1	5 C	28.7
151/- to 200/-	ល	5.1	5	0•8	S	5.7	~	6° 6	19	21.8
201/- to 250/-	4	C.S	Q	7.0	୰	7.0	ŧ	ŧ	10	18.4
251/- to 300/-	3	0 <b>*</b> 0	M	1.1	N	2.9	₿r	ŧ	ហ	<b>1</b> 0
301/- to 350/-	જ	6•2	, M	r <b>t</b> r	<del>(**)</del>	1.1	ł	ŧ	4	<b>0</b> 9
351/- to 450/-	ល	5.7	പ	5.7	ł	ŧ	t	5	OT	11.5
Total :	26		ររួត		23		m		18	100

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Cost of Oil - Per Acre

Cost in Rupees II Percentil Percenti

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50 <b>1/= t</b> o 600 <b>/=</b>	ł	ŧ	Ч	14.28	~	1	ţ		~	28.57
601/- to 800/-	ł	ŧ	ł	1	Í	Ţ	ŧ	1	ł	Î
301/- to 900/-	rt	14.28	ł		ŧ	1	ŧ	1	tj	14.28
501/- to 1000/-	1	3	ŧ	ſ	ţ	ŧ	، ا	1	ŧ	<b>\$</b> ,
1001/- to 1500/-	N	23.57	. <b>en</b> j	14.28	ŧ	*	d	14.28	4	57.14
Totel :	m		Ņ	2 1 1	-		-		L	7 100

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of Rs. 500/- to Rs. 600/-. The cost incurred by these farmers is less than some farmers having wells, which go dry in the summer season. Four engine holders incurred oil cost in between Rs. 1000/- to 1500/-. These farmers have their engines on the river bank.

Oil bill is much more than electric charges, that is why very few farmers use oil engines. One advantage which an engine holder gets is that, he can start his engine at any time and anywhere provided adequate water is available.

## c) <u>Cost of Rental Basis Water</u> -<u>Per Acre</u> :

Out of the total units of the sample, 14 farmers received water on rental basis, and 4 farmers had taken water on hire, in the summer season.

The Table No. 21 is shown the cost of hired water. This cost is minimum Rs. 700/- and maximum Rs. 2000/-. Out of these farmers, one farmer received water from tank and he paid Rs. 700/- per acre. 9 farmers who get water from cooperative lift irrigation schemes, paid in the range of Rs. 700/- to Rs. 1400/- per acre.

Out of the 14 farmers, 4 farmers got water on contract basis viz. one fourth of the production to be paid to the water supplier. In this way, they paid

## Cost of hired water per acre

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Cost in Rupees			U	Categories of	S OF	Farmers			Tot al	Perce
I Perce II Perce III Perce IV Perce IV ntage ntage ntage ntage ntage ntage ntage ntage		Perce- ntage	H I	Perce ntage	III	Perce- ntage	ΛT	Perce ntage	<b>- 200 and 200 and 200 and 200</b>	ntage
700/- to 1000/-	~	11.1	ч	រ ស	<b>r-</b> j	ហ្ ហ្	ŧ	ŧ	<b>4</b> 3	22.22
1001/- to 1200/-	m (1)	16 •6	1	ş	ŧ,		ŧ	ŧ	m	16-6
1201/- to 1400/-	\$	\$	m	ທ • ທ	€ € + 3 3 3 3 3 3 3 3 3 3 3 3 3	<b>16.6</b>	~1	ហ ហ	IJ	27.8
1401/- to 1600/-	<del>r i</del>	ດ. ເບື້	-	ស ស	1	, <b>\$</b>	Ņ	2	2	1.1.1
1601/- to 1800/-	() (†	11.1	m	ល ស្	ł	ł	1	ŧ ·	m	16.6
1801/- to 2000/-	r-;	ល • ហ	ŧ	ŧ	I	<b>1</b>	ł	ŧ	гţ	<b>ល</b> ហ
Total :	5		4	tua este es estatua a comparata a merentra con con a a de contra estatua estatua estatua a la contra estatua e A A A A A A A A A A A A A A A A A A A	4	hai juga pancap naji che substati si			18	an an ind the starts starts

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+ Due to shortage of self water resources, water taken from others.

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Rs. 1400/- to Rs. 2000/- per acre. From this it is clear that the cost of hired water is exorbitant in comparision with own irrigation scheme.

If we compare these three kinds of irrigation costs, we can say that (i) Own irrigation scheme is cheaper from other methods. (ii) Oil engine is costlier than electric motor, (iii) Cooperative Lift Irrigation schemes water supply is cheapter than private rental basis water supply.

### 3.4.8 (K) Lebour cost of Watering -Per Acre :

In the Table Nos. 19, 20, 21, we present information regarding the cost of providing irrigation to the crop. For irrigation the cane crop labour service is necessary. In the rainy season, artificial water supply is not necessary, but in the dry season (or in the absence of rains) cane crop is irrigated every 10 to 15 days during its growing period. Towards the time of harvesting, irrigation frequency is reduced.

The number of times cane crop is irrigated depends on availability of water. Generally, farmers water the cane crop 15 to 30 times in a crop season. If the motor pump or oil engine works continuously then one labour is needed for watering one acre land, but if the pump set does not work properly or there is inadequate water, then more than one labour is needed for watering one acre land. In Table No. 22, we have shown the labour cost of watering the cane crop of the sample. The minimum labour cost of watering the cane crop per acre is Rs. 90/- and maximum cost is Rs. 300/-. Nearly 81% farmers incurred this cost in the range of Rs. 100/- to Rs. 200/- per acre.

## 3.4.3 (L) Total cost of Labour -Per Acre :

Sugarcane cultivation requires labour service. Labour service is required for various purposes for preparatory tillage, making furrows and ridges, making cross furrows, for plantation, applying fartilizers, for using pesticides, weeding, watering the cane crop, for tying the cane crop, repairing the water channels etc. The farm owner or members of his family alone cannot do all these activities. Therefore, he uses hired labour. Small cultivators do these activities on their own but it is impossible for big cultivators. Labour charges are calculated at the rate of Rs. 5/- per day.

In cultivating sugar cane, a farmer acts in dual capacity, as labour and organiser at the same time. As labour he does above mentioned work. And as an organizer he does following work-planning of cane crop, maintaining the fertility of soil, supervising all the activities, protecting cane crop from pests and diseases, fencing the

## TABLE NO. 22

## Labour Cost of Watering - Per Acre

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Cost in hunces Categories of Farmers To- Ferce			Sate Sate	cories o	LEU J	fiers			To-	Perce-
I Perce- II Perce- III Perce- IV -Perce- tal ntage ntage ntage ntage ntage ntage	H	Perco	II	.II Perce- III Per ntuge nta	III	Perce- ntage	AI	-Perce- ntage	taj	ntage
90/- to 100/-	Ń	2.7	12	13.9	Ģ	7.4	m	2.7	8	25.8
101/- to 150/-	20	12.0	rd ed	10.1	S	9.25	N	1.8	36	33.4
151/- to 200/-	S	9,25	ß	7.4	Ń	à.6	1	÷.	M.N	21,3
201/- to 250/-	4	6.48	~	1.8	2	Į	ł	ł	0	0 0
251/- to 300/-	m	1.0	2	0 <b>*</b> T	0	1.8	ţ.	ł	5	0 <b>*</b> 2
Above 301/-	et	6.0	~	0° <b>-1</b>	ri,	0°0	1	8	4	Э.
Total of each category	15		8	i	26	. 26	ÎΩ	5 JOB	108	100

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cane crop, providing adequate water etc. Hence he is entitled to get managerial reward also. For 18 months period, Rs. 1000/- are assumed as a managerial reward for per acre. This managerial reward or supervision cost is included in the labour cost.

The Table No. 23 13 shown the total labour cost per acre of the cane crop. From this table we can say that this cost varies between minimum Rs. 1200/- and maximum Rs. 2400/- per acre. Small farmers' labour cost per acre is less than the big farmers'. Nearly 80% farmers of the sample incur total labour cost in between Rs. 1400/- to Rs. 2000/-. The average total labour cost per acre is Rs. 1751/-.

We assumed that supervision cost per acre is Rs. 1000/- for all farmers. Yet there is variation in labour cost for following reason.

- 1) The farmers who use family members as labourers get higher efficiency because they put in greater efforts and longer time on own farm.
- 2) The fermers who use more labourers for plantation, weeding, watering the cane crop, have to incur more labour cost.

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## Total Cost of Labour - Per Acre (Including Managerial Cost)

Cost in Rubes	l		Cate	Catenories of Farmers Total Perce-	rea 3	nces			Total	Perce-
		Perce- ntage		Ferce II Ferce III Ferce IV Ferce ntage ntage ntage ntage ntage	H H	Ferce ntage	7 I	Perce- ntage		ntage
1200/- to 1400/-		<b>6</b> °0	4	3.7	63	2.1	ţ	i	Ø	7.4
1401/- to 1600/-	ol	9.25	75	11.1	ŝ	9.	ł	ŧ	27	25.0
1601/- to 1800/-	14	12.9	12	11.1	e l	12.0	ŝ	2.7	Ş	37.0
1801/- to 2000/-	v	ម្ន មា រ	5	6.4	4	3.7	r-1	6.0	50	30.5
2001/- to 2200/-	ហ	4 <b>.</b> 6	4	3.7	ri,	6.0	Ч	6.0	11	10.2
2201/- to 2400/-	ы	6°0	e-1	6*0	t	1	ŧ	ŧ	N	0
Total of each category	37		Ş	1111 · 아파 이파 이파 가지 바라 이것 · 아~	26		ហ		108	100

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- 3) The farmers who have to undertake works like repairing water chanel, fencing the cane crop have to incur additional labour cost.
- 4) The farmers who apply fertilizers in several doeses, and water cane crop more than 20 times and use pesticides have to incur more labour cost.
- 3.4.8 (M) Cost Due to Taxes -Per Acre :

Every year, farmers are required to pay certain taxes to the concerned authorities - such as land revenue, educational cess, Employment Guarantee Scheme cess etc. But all farmers do not know exactly how much tax is required to be paid for cane crop only. For the year 1960-81, farmers were required to pay Rs. 10/- to 15/- as land revenue per acre and Rs. 40/- as educational cess per acre. If land holding is more than 5 acres, the farmers have to pay E.G.S. tax. It may be noted that the information regarding above mentioned taxes given by farmers is taken into consideration but some types of taxes they were not aware of and naturally are not taken into consideration.

Table No. 24 reveals amounts of taxes paid by farmers. The cost due to taxes per acre is minimum

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# Cost due to Taxes Per Acre (Land Reverne, Educational Cess, E.G.S. Tax only)

Tares in Ruces				Categories of Farmers	es of	Farmers	e1.	Tares in Runeas Categories of Farmers Total Perce-	Total	Perce-
	T	Perce- II ntage	H	Perce- ntage	TTT	Perce- ntage	II	Perce- ntage		ntage
親軍記書記意記意記意記意記意記意記意記意記章記章記章記章記章記章記章記章記章記章記章				n di stati și și	E B B B B B B B B B B B B B B B B B B B					
40/- to 50/-	<b></b>	6ª 0	ì	ł	ŧ	ł	ŧ	ł	ri	6•0
51/- to 60/-	5 S	32.4	38	35 .2	22	20.3	ţ	•	95	0.88
61 <b>/-</b> to 70/-	<b>~~</b> ]	6-0	~	8 1	4	3.7	ເດ	9 9	12	11.1
Total of each category	37		40		26	t i fan de fan d	ß	40 26 5 108 100	108	100

Rs. 50/- and maximum Rs. 70/-. Out of the sample, 88% farmers paid taxes in the range of Rs. 50/- to 60/- and 11% farmers paid in between Rs. 61/- to Rs. 70/-. In the survey, we did not find a single farmer, who paid agricul-tural income tax.

## 3.4.8 (N) <u>Total Variable Cost</u> - <u>Per Acre</u> :

Under paras 3.4.8 A to M we have seen various cost items of variable cost. If we add up all these items of variable cost, we get total variable cost. In the total variable cost, we include primary tillage cost, plantation cost, earthing up cost, cane seeds cost, fertilizers cost, irrigation cost, taxes, labour and supervision cost, farm equipments repairing cost, interest on working capital etc.

In Table No. 25 we have shown, total variable cost per acre of the sample. This total variable cost is minimum Rs. 3000/- and Maximum Rs. 9000/- Mearly 87% of farmers incurred total variable cost in the range of Rs. 4000/- to Rs. 7000/-. Only 7% farmers incurred more than Rs.7000/as total variable cost per acre.

From Table No. 25, it can seen that in case of I and II group's of land holdings total variable cost is spread in the range of Rs. 3000/- to Rs. 9000/-, but the cost in case of III group is in the range of Rs. 4000/- to Rs.7000/-.

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Total Variable Cost Per Acre

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Cost in Rupees	i		Cate	Category of Parmers	Parme	й С			TO	Perce-
	·)	Perce- II ntage	TT	Perce=	TII	Perce- ntage	N	Perce- ntage	tal	ntage
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3000/	1	*	i	\\$	I	ł	ł	ŧ	Ê	<b>\$</b> ,
3001/- to 4000/-	4	3.7	2	<b>3.</b> 0	<b></b>	0.9	ł	1	2	ທູ ເວັ
4001/- to 5000/-	-	10.1	74	12.0	r r	10.1	-	6•0	37	34.4
5001/- to 6000/-	r	6 •5	15	13°8	ω	7.4	~	6* 0	TE	28.7
6001/- to 7000/-	én En	12.0	ស	<b>4</b> •6	Q	9 <b>.</b> 9	rt	<b>6</b> • 0	25	23.1
7001/- to 8000/-	0	3.8	ო	2.7	ł	- 5	e-\$	<b>0</b> •0	9	ភ <b>្</b>
8001/- to 9000/-	ł	1	rt.	ର ୦	ļ	1	<b>إ</b> ئم	6•0	2	с. Н
Total of each cetegory	37		Q.		26		ស		108	100.00

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The total variable cost of the IVth group of land holdings is spread up thinly.

## 3.4.8 (0) Total Cost of Cane -Per Acre :

Total cost of sugarcane cultivation is the sum total of total fixed cost and total variable cost of cane cultivation. The total cost of cane production is derived in two ways in this exercise.

i) If we consider all items of fixed cost including interest on land investment and adding this cost to total variable cost, we will get total cost of cane cultivation per acre.

i1) By adding, fixed cost of cane production excluding interest on land investment - and variable cost of cane production, we will get total cost of cane production per acre.

In Table No. 26, we have shown total cost of cane cultivation by using the first approach. In this table, we have shown the total cost of production per acre of the sample. In the total cost we have included fixed cost including interest on land investment - and variable cost. Interest on land investment is calculated at the rate of 15% for 1.5 years.

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Total Cost of Cane - Per Acre

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(Fixed and Variable Opst - including Interest on Land Investment)

Cost in Rupees Categories of Farmers Total Perce			Gat	ecories	of Pe	rmers		-	Total	Perce-
<u>I Perce II Perce III Perce IV Perce</u> ntage ntage ntage ntage ntage	н	Perce- ntage		II. Perce- III Perc ntage ntag		Percentage	ΛT	Perce- Dtage		ntage
8000/- to 10000/-	۶Ť	0.9	Ч	9°0	ŧ	£	1	ŧ	Ň	1°0
10001/- to 12000/- 7	e	6.4	ŵ	7.4	ជា	4.6	<b>a</b> mil	0.0	27	19.4
12001/- to 14000/- 12	12	11.1	513	12.0	10	9 *25	1	1	35	32.4
14001/- to 16000/- 12	NT NT	1.11	ò	6 <b>.</b> 8	œ	7.4	ጣ.	2 5	32	29.5
16001/- to 18000/- 5	ស	<b>4</b> .6	ŝ	4.6	N	0 •	~1	6•0	ET	12,0
18001/- to 2000/-	1	Ĩ	ო	60 N	1	1	\$	ł	ო	2.7
20001/- to 22000/-	ł	ł	H	0°0	м	6. 0	4	ŧ	2	1.8
Total of each category	37	يتو خير جي خير جيد مي جيد	8	بليت بينه موجد عبد بين بين مو	26	수가 속은 옷은 것은 것을 수 있는 것을 수 있다.	6	9	108	100.00

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Table No. 26 reveals that, the total cost of cane production per acre is minimum Rs. 8000/- and maximum Rs. 22000/-. Nearly 93% of farmers incurred total cost in the range of Rs. 10000/- to Rs. 18000/- and 62% farmers<sup>6</sup> total cost is in between Rs. 12000/- to Rs. 16000/-. The average total cost of the sample is Rs. 14290/-.

This variation in the total cost of cane production can be explained on the basis of following factors.

1) In case of the farmers, who spend more on fixed capital investment, total cost is also high. The farmers who incurred cost more than Rs. 18000/-, have wells; but these wells have inadequate water supply. That is why their fixed capital investment per acre is high, resulting into higher total cost.

11) In case of the farmers, whose total cost is less than Rs. 12000/-, we find that their fixed cost is less and they spend less on chemical fertilizers and hirod labour. As a result their total cost of cane production is less.

3.4.8 (P) Total cost of Cane (Excluding Interest on Land Investment) -Per Acre :

In table No. 27 we have presented, data regarding the total cost of cane cultivation - excluding interest on land investment. From this table it can be seen that, this cost varies between minimum Rs. 3000/- and Maximum TABLE NO. 27

Total Cost of Cane Per Acre (Fixed Cost and Variable Cost) (Excluding Interest on Land Investment)

		Cost in Rupees Categories of Farmers Total Perce-	Cat	Categories	OEE	of Farmers			Total	Derce
	[~]	Perce-	TT	Perce- III	TII	Perce-	IV	Perce-		ntage
다 우리우리는 티에 단소한 후자우란 후타우라우리고 다	1 1 1 1 1 1	ntage 	ii V	ntage ntage 		ntage ntage				
3000/- to 4000/-	ri	0 0	, N	8. T	ł	ł	ŧ	8	ţţţ	2°8
4001/- to 500/-	5	6.4	0	8 <b>.</b> L	ო	2•8	ł	ł	22	11.1
5001/- to 6000/-	5	6 <b>4</b>	27	11.1	ဖ	ភ្.ភ	~	6-0	26	24.1
6001/- to 7000/-	72	11.1	ω	6-1	10	6 7	Ч	6*0	te	28.7
7001/- to 8000/-	¢	3.7	Ø	7.4	n	2.8	e1	6.0	16	14.8
3001/- to 9000/-	ო	2.8	4	3.7	Ĥ	6.0	Ч	6•0	61	8.3
9001/- to 1000/-	\$	2.8	¢ţ	8•T	(1	<b>1</b> •8	i	ŧ.	Ó	S.S
10001/- to 11000/-		6•0	Ч	6• 0	ŧ	ŧ	L	1	N	တ္ င္၊
11001/- to 12000/-	ŧ	ſ	ŧ	ł	ri	0.49	ł	ł	c-1j	6.0
12001/- to 13000/-	ţ	<b>≇</b> t	ત્ન	6•0	ł	1	~	6.0	2	C, T
Total of each category	37		8		56		្រា		108	100.00

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Rs. 13000/-. Nearly 51% of farmers incurred cost in the range of Rs. 5000/- to Rs. 8000/- per acre and 87% farmer's total cost is in the range of Rs. 4000/- to Rs. 9000/-.

The variations in this cost are due to - (1) some farmers, whose cost is less than Rs. 5000/- have ration crops. Their expenditure on seeds, where  $\frac{primary}{rotor}$ , labour is less.

(ii) Those farmers, whose cost is more than Rs.10000/per acre, had to spend more on fertilizers, water supply, labour charges and on capital assets collectively. Due to these factors or in various combinations of them farmers incurred more cost per acre but their cane yield is not high.

If we compare Table No. 26 and 27, we can say that -

1) Excluding interest on land investment, the sugar cane cost per acre is very less. From Table No. 27 we observe in case of nearly 87% farmers total cost is in the range of Rs. 4000/- to Rs. 9000/-, and considering table No.26, hardly 2% farmers incurred cost in the same range.

2) If we include interest on land investment in total cost of cane production - this cost jumps up significantly. From Table No. 26, we can observe that in case of nearly 62% farmers total cost is in the range of Rs.12000/- to Rs. 16000/-, but considering Table No. 27, only in case of 2.5% farmers, total cost is more than Rs. 11000/- per acre.

3) In the sugarcane production, cost of interest on land investment assumes a very important significance.

## 3.4.8 (0) <u>Average Cost of came</u> - <u>Per Tonne</u> :

Farmers receive price of cane according to the yield of cane and the average recovery of the factory. Eventhough some farmer's cost of cane cultivation is similar, their cane yield per acre is different. Hence there is difference in their incomes. In Table No. 5, we have shown the average cane yield per acre of the sample. Now we can see the cost cane per tonne.

In Table No. 28 we have shown, the average cost of cane per tonne. Here we have considered the total cost of cane production and average cane yield and derived the average cost of cane per tonne. From this table, it can be observed that, the cane cost per tonne is in the range of minimum Rs. 150/- and maximum Rs. 700/-. In case of nearly 9% farmers, average cane cost per tonne is less than Rs. 250/+, but there are 30.4% farmers whose cane cost is more than Rs. 450/- and it is upto Rs. 700/-. Moreover, in case of 58% farmers, average cane cost per tonne is in the range of Rs. 250/- to Rs. 450/-.

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Average Cost of Cane Fer Tonne (Including Interest on Land Investment)

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Cost of Runees	Cost of Runees Categories of Farmers Total Perce-		Cat	Categori es	of Fa	LINELS			Total	Perce
T Perce I ntage		Perce- ntage		Perceint	TIT	I Perce III Perce ntage ntage	IV.	Perce- ntage	1.	ntage
150/- to 200/-	m	6.0	ო	2.7	ł	ł	1	1	4	3.7
201/- to 250/-	~	1.8	Ŋ	0° T	ri	3 <b>.</b> 8	1	ł	9	5.6
251/- to 300/-	v	ខ <b>ំ</b> ព	ហ	4 <b>.</b> 6	ന	2.7	į	1	14	12.9
301/- to. 350/-	ო	2.7	Ń	3	0	<b>1.</b> 8	-1	6.0	ස	7.4
351/- to 400/-	ထ	7.4	r	6.4.	Ģ	ເງ ເງ	3	1.8	23	21.3
401/- to 8450/-	ທ	4.6	4	3.7	5	6.4	N	3. 1	18	16 .7
451/- to 500	~	1.8	4	3.7	Ч	6•0	1	ŧ	fre	6.4
501/- to 550/-	ц	2.7	ന	2.7	2	1.8	1	ł	ω	7.4
551/- to 600/-	гđ	6°0	n	2.7	ż	ł	ħ	1	4	3+7
601/- to 650/-		6*0	£7)	2.7	Ĭ	1	ł	ł	4 4	3.7
651 Above	n	2.7	4	3.7	m	2.7	ŧ	Ĭ	10	2.6
Total of	37	ana ang din sin ang an ing an	9		26		5		108	

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If we consider groupwise cost, it is observed that in case of I and II category farmers, average cost is spread in the range of Rs. 150/- to Rs. 700/-, but in case of III category farmers, cost is in the range of Rs. 201/- to Rs. 550/- and in the IVth category, cost is in the range of Rs. 301/- to Rs. 450/-.

Agricultural Prices Commission does not consider in the total cost of cane production such cost items - as interest on land investment, cost of self labour, supervision cost and depreciation cost in their proper perspective. That is why cane producers are not satisfied with A.P.C.'s cane price.

In the table No. 29 we present the average cost of cane per tonne excluding interest on land investment from total cost of cane production. Table No. 29, reveals the average cost of cane per tonne of the sample. From this table, it is seen that the cost per tonne is minimum Rs.85/and maximum Rs. 450/-. Nearly 27% farmer's average cost per tone is in the range of Rs. 85/- to Rs. 150/+, and 7% farmers incurred this cost more thanks. 350/-. There are 60% farmers, whose average cost is in the range of Rs.150/to Rs. 300/- per tonne.

From Table No. 29, it can be observed that 26% farmers total average cost per tonne is in the range of RS.85/- to Rs. 150/-. Following reasons may explain this low per tonne cost :

## Average Cost of Cane Per Tonne (Excluding Interest on Land Investment)

Cost in Ruces			ateg	ories of	Farm	ers S			Total	Perce-
	H	Perce- ntage	H I	Perce II Perce III ntage ntage	III Per nte		ΛI	Perce IV Percentege		ntage
85/ <b>-</b> to 100/-	r-1	610	ŝ	2.7	М	6*0	1	ŧ	ស	<b>4,</b> 6
101/- to 150/-	S	<b>6</b> 8	Ø	7.4	ଡ଼	ល ភ	ы	6•0	24	22.2
151/- to 200/-	5	12,0	Ø	6 8 8	0	8.3	0	7.0	с, С,	30.5
201/- to 250/-	ហ	4,6	ထ	7.4	4	3.7	ł	ŧ	17	15.7
251/- to 300/-	Ó	2.4	Q	ខ•ព ខ	Ч	0*0	7	6°0,	16	14.8
301/=to 350/=	ł	ŧ	N	С П	N	3 <b>.</b> 1	Ч	6 <b>*</b> 0	ហ	4.6
351/- to 400/-	r-1	6•0	03	1.8	ო	2.7	1	ł	Q	5 <b>*</b> 5
Nbove 401/-	ŧ	ž	N	8° -	t	ł	ł	ŧ	Q,	1.8
Total of each category	37	- et automa de automa de auto	\$	o velocitado - Santa <sub>Alta</sub> n Indo - Santa - Santa	26		ſ		108	100.00

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- A) High yield per acre viz. 60 to 93 tonnes per acre - because of good quality of land and availability of adequate water.
- B) More use of family labour, more use of farmyard some of them have manure and ratoon crop.

Moreover, there are 12% farmers whose cane cost per tonne is more than Rs. 300/-. It means these farmers' cane cost per tonne is very high. Following seem to be the reasons :

> d) Low came yield per acre viz. 11 to 24 tonnes per acre because of low quality of land and shortage of water.

b) Per acre total cost is high viz. Rs, 6000/- to Rs. 10000/- - because some of them incurred weeding cost more, while some spend more on cane seeds, some of them use more fertilizers but due to shortage of water it is adversely affected.

For the season 1980-81, Shree Warana Sahakari Sakhar Karkhana has given Rs. 319/- for a tonne, of sugar cane and had deducted Rs. 10.50 (as a non-refundable deduction) per tonne. It means farmers received only Rs. 308.50 per tonne of cane. Considering this price of cane per tonne, we can say that nearly 90% farmers cover their total cost of cane production excluding interest on land investment. But if interest on land investment is included in the total cost, only 22% farmers cover their total cost of cane production from this price.

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