CHAPTER - V

ECONOMICS AND MARKETING OF GRAPE-VINE CULTIVATION

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SECTION - I

ECONOMICS OF GRAPE-VINE CULTIVATION

5.1 INTRODUCTION :

In the earlier chapter (IV) the emphases were given on some geographical aspects of grape-vine cultivation. The present chapter deals with crop economy and marketing of its output in the context of space. The data and information has been collected through intensive field work of sample gardens of selected villages in the region (Fig.5.1). The study pertaining to economics of grape gardening is based on case study of three villages i.e. Mhaisal, Khatav and Karnal. The grape yards of different categories depending upon size of farms i.e. small, medium and large, were choosen to collect the data on crop economy. Further, a comparative analysis is attempted by studying economy of irrigated cash crops grown in these villages. The economy of sugarcane is examined and analysed to understand the level of profit to be received to farmers from this crop. The outlook of farmer to undertake the cultivation of particular crop depends mainly on the profits obtained from particular crop. When the different crops are grown under same ecological conditions the cost-benefit analysis gives clue regarding the perception of farmer to undergo for particular farm enterprise. In view of this, an attempt is made here to examine and analyse the cost-benefit trends of two major irrigated crops i.e. grape-vine and sugarcane. Both are the competative irrigated cash crops. Hence, their choice depends on

the profitability. These crops are grown in the region unevenly. The sugarcane is dominant in the west whereas grape-vine is found in the north and east. However, sugar-cane growers are also thinking recently to undertake the cultivation of grape-vine due to lucrative gains. This has encouraged author to investigate a comparative cost-benefit analysis of two crops of the villages of Mhaisal, Karnal and Khatav (Fig.5.1). The economics of crops here means the difference between per hectare cost incurred for crop products and returns received to him.

5.2 OBJECTIVES :

The work on economics of crops aims to :-

i) examine the spatial pattern of cost of production for grape-vine, sugarcane in the region,

ii) assess the returns received to farmers from these crops and

iii) examine comparative cost benefit of two crops.

Farmer's decisions regarding the cultivation of a crop depend on the profitability of that crop in relation to other crop (Sadhu,1985). He will select the crop which will result more returns. In the region under study most of the farmers have become aware about the modernization and commercialization of agriculture. Thus, the choice of crop depend upon the net returns obtained from the cultivation of crop. The study pertaining to

comparative costs is useful guide for the cultivation practices. The profitability or net returns are calculated by employing the following simple formula :-

$$NR = AI - CP$$

Where, NR = Net returns per hectare (Rs.)

AI = Out put per hectare (Rs.)

CP = Cost of production (input) per hectare (Rs.)

5.3 COST-BENEFIT ANALYSIS :

Mhaisal village is located in Krishna river basin where soils are deep black and irrigation facilities are developed mainly of lift irrigation. Sugarcane is dominant irrigated crop (80%) followed by grape-vine (10.89%) in the region. The other two villages i.e. Karnal and Khatav are located in the western and eastern parts of the region respectively. These villages are representative to the region. The field investigation has revealed that there is spatial variation in the cost-benefit of small, medium and large sized farm holdings. The cost of production and output are calculated in terms of money value as per the existing market prices.

A) PER HECTARE COST-BENEFIT OF SUGARCANE :

i) Mhaisal Village :

The western part of Miraj tahsil has the predominance of sugarcane cultivation (80%). It has been also cultivated

all over the region wherever water is available. The establishment of sugar factor near Sangli (Shetkari Sahkari Sakhar Karkhana Ltd.), assured supply of water in the west and membership of factory have encouraged cane cultivation during the last three decades in Miraj tahsil. The crop has occupied about 1,114 hectares in 1987.

TABLE 5.1-A : Per hectare production cost of sugarcane in Mhaisal village.

(Rs.)

Sr. No.	Item	Size of holdings		
		Small (< 2 hect.)	Medium (2 to 4 hect.)	Large (> 4 hect.)
1	Land preparation	1200	1150	1200
2	Seeds	3500	3500	2500
3	Manures	6000	4500	4000
4	Fertilizers	2100	2800	3500
5	Insecticides	-	-	-
6	Ploughing charges	900	700	700
7	Irrigation charges	1400	1000	800
8	Land revenue	500	700	900
9	Harvesting and Transportation charges	By Factory	By Factory	By Factory
	Total	15600	14350	14600

SOURCE : Compiled by the author, based on field data,1987.

Table 5.1-A shows per hectare cost of production for sugarcane in Mhaisal village in three different sizes of holdings. The small sized holdings have recorded highest expenditure of Rs.15,600/- whereas Rs.14,350/- and Rs.14,600/- for medium and large sized holdings respectively. There is also variation in the expenditure made for different inputs according to the change in size of holdings. Small sized holdings record more investment (Rs.6,000) for manures as compared to large one (Rs.4000). Same is the position of fertilizer cost. Irrigation charges are higher in case of small sized holdings (Rs.1,400) than large sized (Rs.800). The variation of others is not considerable. The harvesting and transport charges are met by sugar factory. The small sized holdings have many constraints due to which cost of production is high.

The relation of farm size to per hectare cost of production and yield of sugarcane is shown in Table 5.1-B. The yields or output per hectare of small sized farm Rs.26,000 and input cost is Rs.15,600 leading to net returns of Rs.10,400/-. The large sized holdings seem to be profitable as net returns are about Rs.14,400/- in Mhaisal village.

ii) Khatav Village :

Sugarcane occupies about 35 hectares of area of the total 292 hectares under irrigation in Khatav village. Well irrigation contributes 98 percent of the net irrigated area in 1987.

TABLE 5.2-A : Per hectare production cost of sugarcane in Khatav village, 1987.

(in Rs.)

Sr. No.	Item	Size of holdings		
		Small	Medium	Large
1	Land preparation	1500	1450	1400
2	Seeds	3600	3600	3500
3	Manures	2000	1800	1700
4	Fertilizers	1200	1400	2100
5	Insecticides	-	-	-
6	Ploughing charges	1600	800	800
7	Irrigation charges	2800	2400	2000
8	Land revenue	500	700	900
9	Harvesting and Transportation charges	By Factory	By Factory	By Factory
	Total	12600	12150	12400

SOURCE : Compiled by the author, based on field data, 1987.

TABLE 5.1-B : Relation of farm size to cost of production and yield of sugarcane (Mhaisal village), 1987.

(in Rs.)

Size of holding (hectare)	Yield (Output)	Cost of production (Input)	Net returns
Small (below 2 hect.)	26,000	15,600	10,400
Medium (2 to 4 hect.)	26,500	14,350	12,150
Large (Above 4 hect.)	29,000	14,600	14,400

SOURCE : Compiled by the author, 1987.

TABLE 5.2-B : Relation of farm size to cost of production and yield of sugarcane (Khatav village), 1987.

(in Rs.)

Size of holding (hectare)	Yield (Output)	Cost of production (Input)	Net returns
Small (below 2 hect.)	20,000	12,600	8,400
Medium (2 to 4 hect.)	21,000	12,150	8,850
Large (Above 4 hect.)	22,000	12,400	9,600

SOURCE : Compiled by the author, 1987.

Table 5.2-A shows per hectare expenditure incurred for sugarcane. Small sized farms have recorded higher costs for land preparation (Rs.1500), seeds (Rs.3600), manures (Rs.2000), ploughing (Rs.1600) and irrigation (Rs.2800) than that of medium sized and large sized holdings of sugarcane in this village. The cost of fertilizers and land revenue is more (Rs.2100 and Rs.900 respectively) in case of large sized holdings. The total costs of production for small, medium and large sized holdings are Rs.12,600, Rs.12,150 and Rs.12,400 respectively. The analysis reveals that cost of production is more in case of small sized holdings. The input-output relationship and net returns per hectare of different size of holdings is exhibited in Table 5.2-B. The output obtained per hectare of small size holdings is Rs.20,000 and that of medium and large are Rs.21,000 and Rs.22,000 respectively. Thus, the net returns are higher (Rs.9600) in case of large sized holdings than medium and small (Rs.8850 and Rs.8400 respectively). The farmers having large sized holdings can offer more inputs and enjoy credit facilities resulting in more profits.

iii) Karnal Village :

Sugarcane is an important irrigated crop in Karnal village occupying 230 hectare area in 1987. Lift irrigation is important source of irrigation whereas well irrigation contributes about 6% share in the net irrigated area. Grapevine is also significant irrigated crop of this village.

The per hectare cost of production of cane cultivation is shown in Table 5.3-A indicating higher expenditure in case of small holdings, except land revenue, for each inputs the expenditure is more than the medium and large sized holdings. The total cost of production is about Rs.17,100, Rs.15,100 and Rs.15,000 for small, medium and large sized holdings.

Table 5.3-B reveals that output in terms of money value are more (Rs.30,000) in case of large sized holdings than that of medium (Rs.28,400) and small (Rs.28,000) sized holdings. As a result, the net returns are higher (Rs.15,000) of large sized holdings than medium (Rs.12,300) and small (Rs.10,900) sized holdings.

Table 5.4 shows composite picture of cost-benefit relationship of sugarcane cultivation in three villages. In all these villages the small sized holdings are lagging behind to medium and large sized holding regarding final profits. It is obvious that small sized holder are unable to use more inputs per hectare due to his poor economic conditions. This has resulted into decreasing returns to him. Further, Karnal village has recorded fair returns in all size of holdings (Table 5.4).

B) PER HECTARE COST-BENEFIT ANALYSIS OF GRAPE-VINE :

An attempt is made here to highlight the input-output ratio of grape-vine cultivation in three villages to find out the variation according to the size of holdings. The cost

TABLE 5.3-A : Per hectare production cost of sugarcane in Karnal village, 1987.

(in Rs.)

Sr. No.	Item	Size of holding		
		Small	Medium	Large
1	Land preparation	1,300	1,200	1,200
2	Seeds	3,700	3,500	3,600
3	Manures	7,000	4,800	4,000
4	Fertilizers	2,100	2,800	3,500
5	Insecticides	-	-	-
6	Ploughing charges	900	700	700
7	Irrigation charges	1,500	1,300	1,000
8	Land revenue	600	800	1,000
9	Harvesting and Transportation charges	By Factory	By Factory	By Factory
	Total	17,100	15,100	15,000

SCURCE : Compiled by the author, based on field data, 1987.

TABLE 5.3-B : Relation of farm size to cost of production and yield of sugarcane (Karnal Village), 1987.

(in Rs.)

Size of holding (hectare)	Yield (Output)	Cost of production (Input)	Net returns
Small (below 2 hect.)	28,000	17,100	10,900
Medium (2 to 4 hect.)	28,400	15,100	12,300
Large (Above 4 hect.)	30,000	15,000	15,000

SOURCE : Compiled by the author, 1987.

TABLE 5.4 : Per hectare input-output and returns from sugarcane in Mhaisal, Khatav and Karnal villages - 1987.

(in Rs.)

Village	Input			Output			Net returns		
	S	M	L	S	M	L	S	M	L
Mhaisal	15600	14250	14600	26000	26500	29000	10400	12150	14400
Khatav	12600	12150	12400	20000	21000	22000	8400	8850	9600
Karnal	17100	15100	15000	28000	28400	30000	10900	12300	15000

NOTE : S = Small, M = Medium, L = Large

SOURCE : Compiled by the author, 1987.

incurred right from preparation of land through various stages of plant growth upto the marketing are considered in the analysis. The field statistics has been collected from the grape growers of different categories i.e. small, medium and large sized holdings. The averages were made for each category and considered as the representative to village.

Owing to the capital orientation grape cultivation requires heavy capital outlay for its different operations. In the initial stage, preparation of land, purchase of modern implements, erection of iron poles as support and network of steel wires for vine yards etc. need substantial capital investment. Moreover, grape-vine plant is delicate which requires careful attention for every stage of its growth. Notwithstanding, it has to be protected, mostly from diseases and pests by adopting periodical spraying of insecticides and pesticides. However, they are not available when they are required. Some are them are to be imported. Thus, farmers have to make arrangements in advance. The application of gebralic acid to berries is costly affair. Besides, transportation and marketing of grapes lead to increasing expenditure. Many times the natural hazards like hail storms, cold waves, scarecity conditions may lead to considerable loss of grape produce.

Obviously, per hectare cost-benefit analysis will be helpful to assess the profitability of this crop. Further, per hectare comparative cost benefit analysis of different irrigated

cash crops will also lead to farmer to select particular crop enterprise.

i) Mhaisal Village :

Of the total irrigated area of 2,446 hectares grape-vine has occupied 60 hectares in Mhaisal village. Lift irrigation is recently developed and water is lifted from Krishna river by different schemes in co-operative as well as in private sector. Grape-vine area accounts for 1.84 and 2.45 percent to total cultivated and irrigated hectareage in this village respectively. The sugarcane is first ranking irrigated crop (80%) due to deep black soils and assured irrigation. However, the farmers have undertaken the enterprise of grape-vine recently in medium black soils, replacing somewhere cane cultivation. The study of comparative cost-benefit analysis can give a clue for such trend.

The per hectare expenditure incurred for different inputs and operations in small, medium and large sized holdings of grape-vine is given in Table 5.5-A. Charges for irrigation, revenue and marketing are equal to all sizes of holdings. It is observed that per hectare expenditure for small sized holdings is higher for certain operations like manures (Rs.8,000), harvesting (Rs.4,100), land preparation (Rs.3,100) than the medium and large sized holdings. But in general for most of the operational charges like April cutting, internal practices (Rs.500), fertilizers (Rs.8,000), pesticides and insecticides (Rs.4,000), removal of weeds (Rs.900), October

cutting (Rs.600), gebralic acid (Rs.2,200), protection from cold waves (Rs.300) etc. are less than the medium and large sized holdings (Table 5.5-A). Per hectare total cost of production of grape vine in case of small, medium and large sized holdings is Rs.2,05,550, Rs.1,12,900 and Rs.1,11,100 respectively. Obviously, medium sized holdings seem to be costliar affair. The differentiation in expenditure can be attributed to involvement of family members in case of small holders whereas much dependence on labour in case of medium and large sized holders.

Table 5.5-B reveals that there is variation in the output and net returns from grape-vine cultivation according to the variation in the size of holdings. The output per hectare is fairly high (Rs.1,40,000) in case of medium grape-vine farm whereas it is Rs.1,25,000 and Rs.1,30,000 in small and large sized holdings respectively. Looking into the net returns received to grape growers we find that medium sized holdings have shown higher returns (Rs.1,12,900) than that of small (Rs.1,05,550) and large (Rs.1,11,100) sized holdings per hectare. This could be related to the variations in soil, water conditions, institutional and infrastructural facilities available to farmers.

ii) Khatav Village :

Khatav village is located in the eastern part of the region where ecological conditions are suitable for grape cultivation. Barring to inadequate water the vine cultivation is

TABLE 5.5-A : Per hectare production cost of grape-vine in Mhaisal village, 1987.

(in Rs.)

Sr. No.	Item	Size of holding		
		Small	Medium	Large
1	Land preparation charges	1000	1000	1000
2	Cost of preparation of trenches	3100	3000	2900
3	Charges for April cutting	2300	3000	2900
4	Cost of internal practices	500	700	700
5	Manure charges	8000	7500	6500
6	Fertilizer charges	8000	9000	9000
7	Pesticides and insecticides charges	4000	4300	4600
8	Topping of sub branches (cane)	350	400	450
9	Charges for removal of weeds and grasses	900	1600	1650
10	Irrigation charges	3100	3000	3000
11	Charges for October cutting	600	1800	2100
12	Cost of internal practices	150	350	750
13	Manures charges	3000	4500	4000
14	Fertilizers charges	4100	5000	5000
15	Pesticides and insecticides charges	4500	4700	5000
16	Cost of loosening the soil	2600	2700	2900
17	Cost for supporting the grape bunches	600	600	600
18	Cost of Gebralic acid	2200	2500	2700
19	Charges for the protection from cold waves	300	600	600
20	Irrigation charges	2500	2500	2500
21	Land Revenue	250	250	250
22	Charges for the protection from birds	1400	1500	1600
23	Harvesting charges	4100	3900	3800
24	Cost of packing material	17000	16500	16500
25	Transport charges	9000	9000	8500
26	Marketing charges (Commission)	22000	22000	32000
	Total	105550	112900	111100

SOURCE : Compiled by the author, 1987.

TABLE 5.6-A : Per hectare production cost of grape-vine in Khatav village, 1987.

(in Rs.)

Sr. No.	Item	Size of holding		
		Small	Medium	Large
1	Land preparation	1500	1500	1500
2	Preparation of trenches	3500	3200	3100
3	April cutting	2200	2800	2700
4	Internal practises	400	600	500
5	Manures	7500	8000	9000
6	Fertilizers	8000	9000	9000
7	Pesticides and insecticides	3000	3300	3500
8	Topping of sub branches (cane)	200	350	100
9	Cleaning of the garden	1000	1500	1500
10	Irrigation charges	3200	3000	3000
11	October cutting	500	1700	1900
12	Internal practises	150	200	200
13	Manures	3000	4000	4500
14	Fertilizers	5000	5500	5500
15	Pesticides & Insecticides	3000	4500	5000
16	Loosing of soil	2200	2600	2600
17	Supporting to grape bunches	300	400	400
18	Use of Gebralic acid	2000	4200	4500
19	Protection from cold waves	-	400	400
20	Irrigation charges	2600	2800	3000
21	Land revenue	250	250	250
22	Protection from birds	1400	1500	1600
23	Harvesting	3500	3300	3300
24	Boxes and box packing material	16000	16000	16000
25	Transport charges	10000	9000	9000
26	Marketing	20000	20000	20000
	Total	100800	109600	112650

SOURCE : Compiled by the author, based on field data, 1987.

TABLE 5.5-B : Relation of farm size to cost of production and yield of grape-vine (Mhaisal village,), 1987.

(in Rs.)

Size of holding (hectare)	Yield (Output)	Cost of production (Input)	Net returns
Small (Below 1 hect.)	125,000	19,450	105,550
Medium (1 to 3 hect.)	140,000	28,100	112,900
Large (Above 3 hect.)	130,000	18,900	111,110

SOURCE : Compiled by the author, 1987.

TABLE 5.6-B : Relation of farm size to cost of production and yield of grape-vine (Khatav village), 1987.

(in Rs.)

Size of holding (hectare)	Yield (Output)	Cost of production (Input)	Net returns
Small (below 1 hect.)	120,400	19,600	100,800
Medium (1 to 3 hect.)	139,360	29,660	109,600
Large (Above 3 hect.)	156,750	44,700	112,050

SOURCE : Compiled by the author, 1987.

developed due to proper use of well irrigation. Presently the village has 297 hectares of area under irrigation of which 30 hectares are occupied by grape-vines. The field investigation of grape-vine of different sizes of holdings has revealed that there is variation in the cost of production according to the change in size of holdings.

Table 5.6-A shows per hectare cost of production of grape-vine in Khatav village. Small sized holdings (less than 1 hect.) have recorded comparatively less expenditure (Rs.100,800) than medium (Rs.109,600) and large (Rs.112,050) sized holdings. Moreover, April and October cutting changes are low in case of small holdings as family members are involved in such work. Besides, for fertilizer application (Rs.8000 and Rs.5000), pesticides (Rs.3000), topping (Rs.200), cleaning (Rs.1000), manures (Rs.7500 and Rs.43,000), Gebralic acid (Rs.2000) the expenditure is less than medium and large sized holdings. However, irrigation charges (Rs.3200 and Rs.3000) and harvesting charges (Rs.3500) are more per hectare of small sized holdings. Small holders are facing the problem of inadequate water supply which sometimes is overcome by transporting through tankers leading to increase in expenditure. Besides small holders do not have their own vehicles whereas many large sized holders have their vehicles used for tranaport purposes. They have also better links with middlemen and enjoy desirable credit facilities. As a result transportation charges are high in case of small holdings.

Table 5.6-B exhibits the relation of farm size of grape-vine to cost of production, yields and net returns per hectare in Khatav village in 1987. The large sized holdings though record high (Rs.112,050) cost of production, the output is also high (Rs.156,750) per hectare of grape-vine. Consequently, the net returns obtained per hectare are Rs.44,700 which seem to be more than medium (Rs.29,660) and small (Rs.19,600) sized holdings. The per hectare returns from small size (below 1 hect.) are Rs.120,400 and that of medium Rs.139,360 which are resulted from the variations in inputs and physical conditions. But small sized holdings have shown remarkably low level of economy of grape (Rs.19,000) per hectare. This invites the proper attention to improve output per hectare.

iii) Karnal Village :

Karnal village is located in the western parts of the region with 247 hectares under irrigation of which 3 hectares are under grape-vine. The grape-vine yards very in their sizes. Accordingly, the interviews of grape owners of different size of holdings were conducted. The data, obtained through interviews, were presented in tabular form (Table 5.7-A and 5.7-B). Lift is the major source of irrigation in this village. The soils which are suitable for grape-vine which have proper drainage. As a result, the quality of grapes is comparatively good receiving fair prices in the market.

TABLE 5.7-B : Relation of farm size to cost of production and yield of grape-vine (Karnal village), 1987.

(in Rs.)

Size of holding (hectare)	Yield (Output)	Cost of production (Input)	Net returns
Small (Below 1 hect.)	144,000	40,600	103,400
Medium (1 to 3 hect.)	153,040	44,440	108,600
Large (Above 3 hect.)	140,000	32,350	107,650

SOURCE : Compiled by the author, 1987.

TABLE 5.8 : Per hectare input-output and net returns from grape-vine in Mhaisal, Khatav and Karnal villages, 1987.

(in Rs.)

Village	Input			Output			Net returns		
	S	M	L	S	M	L	S	M	L
Mhaisal	105550	112900	111100	125000	140000	130000	19450	28100	18900
Khatav	100800	109600	112050	120400	139360	156750	19600	29660	44700
Karnal	103400	108600	107650	144000	153040	140000	40600	44440	32350

SOURCE : Compiled by the Author, 1987.

NOTE : S = Small, M = Medium, L = Large.

Per hectare cost of production for different sizes of vine yards is shown in Table 5.7-A. The medium sized holdings have attained more (Rs.108,600) cost of production than small (Rs.103,400) and large sized holdings (Rs.107,650) per hectare in 1987. The cost of production for packing changes (Rs.17,000), transport (Rs.9,000) and irrigation charges, after April cutting, (Rs.3400) seem to be high in case of small sized holdings. This, perhaps, may be due to the marketing and credit facilities enjoyed by medium and large holders are comparatively favourable. The small holders are deprived of these facilities due to their poor economic conditions. Infact, the involvement of family members of small holders has resulted in the reduction of charges of various operations and inputs. Large and medium sized holder have to depend mostly on hired labours leading to the increase in cost of production.

Table 5.7-B exhibits the relationship of input-output and net returns received to grape growers of different sized holdings in the region during 1987. Moreover, medium sized holdings show substantial output per hectare (Rs.153,040) followed by small sized (Rs.144,000) and large sized (Rs.140,000) holdings per hectare. The variations in net returns for small (Rs.40,600), medium (Rs.44,440) and large (Rs.32,350) sized holdings can be attributed to the above mentioned reasons.

Table 5.8 presents composite picture of per hectare relationship of input, output and net returns of grape-vine in three

TABLE 5.7-A : Per hectare production cost of grape-vine in Karnal village, 1987.

(in Rs.)

Sr. No.	Item	Size of holding		
		Small	Medium	Large
1	Land preparation	1000	1000	1000
2	Preparation of trenches	3000	2800	2800
3	April cutting	2300	3000	2800
4	Internal practises	500	600	600
5	Manures	8000	8000	7000
6	Fertilizers	8000	9000	9000
7	Pesticides & Insecticides	4000	4200	4500
8	Topping of sub branches (cane)	300	350	400
9	Cleaning of the garden	900	1600	1600
10	Irrigation charges	3400	3100	3100
11	October cutting	600	1700	2000
12	Internal practises	150	300	300
13	Manures	3000	4000	3000
14	Fertilizers	4000	5000	4000
15	Pesticides & Insecticides	4100	4500	5000
16	Loosing the soil	2400	2800	2900
17	Supporting to grape bunches	500	600	600
18	Use of Gebralic acid	2100	2500	2600
19	Protection from cold waves	-	500	500
20	Irrigation charges	2500	2500	2500
21	Land revenue	250	250	250
22	Protection from birds	1400	1500	1600
23	Harvesting	4000	3806	3600
24	Boxes and Box packing material	17000	16000	16000
25	Transport charges	9000	8000	8000
26	Marketing	21000	21000	21000
	Total expenditure	103406	108600	107650

SOURCE : Compiled by the author, based on field data, 1987.

villages. The net returns received to small sized holdings are substantially high (Rs.40,600) in case of Karnal village as compared to Mhaisal (Rs.19,450) and Khatav (Rs.19,600) villages. This may be due to the ecological conditions favourable in Karnal village. The medium sized holdings seem to be more lucrative in Karnal village (Rs.44,440) than Khatav (Rs.29.660) and Mhaisal (Rs.28,100). Moreover, the physical and chemical properties of soils, availability of water, transportation, marketing, availability of labours in time are the major determinants for the variations in net returns in these villages.

C) COMPARATIVE PICTURE OF COST-BENEFIT ANALYSIS OF GRAPE-VINE AND SUGARCANE :

Table 5.9 reveals comparative analysis of sugarcane and grape-vine in regards to per hectare input, output and net returns in three selected villages. The difference in cost of production for two crops in three different sized holdings of these villages is remarkable. Generally per hectare cost of production of grape-vine is five to six times more than sugarcane. Thus, heavy capital investment is required for grape vine which may sometimes discourage farmers to undertake such enterprise. Similarly, per hectare outputs from both crops cannot be comparable. The per hectare output from grape-vine in different sized holdings are also five to six times more than sugarcane. Thus, grape-vine has become profit oriented cultivation in the region. The net returns per hectare of sugarcane and grape-vine varies as per size of holdings in

TABLE 5.9 : Comparative cost-benefit net returns relationship of sugarcane and grape-vine in selected villages - 1987.

Sr. No.	Village	Inputs (Rs.)			Outputs (Rs.)			Net returns (Rs.)		
		Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
1	Mhaisal									
	A. Sugarcane	15,600	14,350	14,600	26,000	26,500	29,000	10,400	12,150	14,400
	B. Grape-vine	105,550	112,900	111,100	125,000	140,000	130,000	19,450	28,100	18,900
2	Khatav									
	A. Sugarcane	12,600	12,150	12,400	20,000	21,000	22,000	8,400	8,850	3,600
	B. Grape-vine	100,800	109,600	112,050	120,400	139,360	156,760	19,600	29,660	44,700
3	Karnal									
	A. Sugarcane	17,100	15,100	15,000	28,000	28,400	30,000	10,900	12,300	15,000
	B. Grape-vine	103,400	108,600	107,650	144,000	153,040	140,000	40,600	44,440	32,350

SOURCE : Compiled by the author, 1987.

three villages. The difference of net returns (per hect.) of two crops in large sized farms of Khatav village, for example is Rs.35,100 and that of medium sized in Karnal village is Rs.32,100 which are highest recorded in the region. However, in Mhaisal village such differences in all sized farms are not remarkable. For example, they are Rs.9050, Rs.15,950 and Rs.4500 for small, medium and large sized holdings in this village respectively. This certainly indicates the fact that grape-vine cultivation appears to be more profitable in Khatav and Karnal villages than Mhaisal village. This can be attributed to pedological and climatic conditions varying in these villages. The marketing and transportation factor are less effective in those villages. Obviously, per hectare net returns of grape-vine of different sized holdings are always high in all these villages and in the region too. As a result, most of the farmers are recently inclined to devote their irrigated lands to grape-vine provided that pedological conditions are favourable. The attractive remuneration from grape-vine, has minimised the intensity of risk in the minds of farmers.

SECTION - II

MARKETING OF GRAPE-VINE CULTIVATION

5.4 INTRODUCTION :

The infrastructural services like marketing, transportation, government policies, price incentives etc. play important role in encouraging particular crop enterprise. They may be provided by public or private agencies. Marketing of agricultural commodity invariably affects the extent and nature of cultivation. Marketing can be defined as the performance of business activities that direct the flow of goods and services from the producer to the consumer so that they may reach to the consumer at time and place and in the form he wishes and at a price he is willing to pay (Kohls,1958). The economic position of a farmer cannot be improved by producing more unless he gets a 'fair price' for his produce. Marketing is, therefore, the last stage where farmer converts all his efforts and investment in cash (Sharma and Sharma, 1981).

5.5 MARKETING OF GRAPES :

Marketing of grape is a complex process consisting of different services or activities known as 'functions'. These functions are performed by different agencies to fill the gap between producer and consumer. In Miraj tahsil, following marketing functions of grape are carried. They are - i) Harvesting ii) collection and assembling iii) Grading iv) Packaging iv) Transportation vi) storing at main centres vii) financing viii) distribution. From March onwards the harvesting period is started when

the grapes are matured with fair colour and sucrose content. The picking is attempted by experienced and trained labourers. The grapes are collected near the garden having temporary shades. Plate 5.1 shows the picking of grapes in the region. The collected grapes are graded according to shape and size of berries. The gradation is carefully done as decayed berries are also removed. All this has been done by women labours who have practice based on experience. Plates 5.2 and 5.3 show the collection and grading processes in the garden. Once the gradation is completed the weightage of 4 kg grapes is carefully packaged into boxes (Plate 5.4). Recently the prices of corrogated boxes are increased costing Rs.4.50 per box. This has led to increase the prices of grapes. The local transportation facilities like tempos, jeeps and trucks are used for transportation. The vehicles collect the boxes from different gardens and are sent to Miraj market where commission agents manage to distribute to different markets of India. The railway facilities at Miraj have facilitated the transportation of grapes. Recently cold storage facilities are made available by private and co-operative agencies in the region. However, there is still more need of refregerated facilities to vehicles and railways. To carry all these functions, except transportation, human labour is mainly used for which substantial wages are offered them. Per male and female labour Rs.15/- and Rs.10/- are paid daily in the region respectively.

Since the grape is perishable fruit it has to be sold into market immediately after its picking for direct consumption. Miraj is the main collection centre from which the grapes are distributed to different cities or markets of India through railway. Besides, local markets also receive some part of it. The grapes are sent by road transport to regional markets.

5.6 ROLE OF GRAPE GROWER'S ASSOCIATION :

The remarkable feature of the region is that the grape growers have come together and have established their own organisation in co-operative sector in Miraj at Sangli as headquarter. The association looks after the supply of inputs, guidance, transport and selling of grapes. The emergence of association has kept aside the middlemen in marketing activity of grapes in the region. The collection, storing and transportation activities are performed by this association. However, about 7.42 percent share of total produce is contributed this association. About 19 grape growers have sent their produce through association for marketing in 1987.

5.7 METHODS OF MARKETING :

Table 5.10 shows different methods of marketing adopted in the region. The field data reveals the fact that 20.32 percent grapes are sold in retailing form at gardens and 2.73 percent are sold through local stalls at major points on state highways. About 10.15 percent are channelized through 'Khoti system'. This

consists of lum-sum amount is paid by middlemen to farmers depending upon the size of garden, quantity and quality of grapes. The part of amount is paid in advance to farmers. It is observed that small vine holders have adopted this method due to money requirement in time and their borrowedness. A substantial share (59.38 percent) is made by commission agencies and remaining 7.42 percent is contributed by the association.

TABLE 5.10 : Methods of grape marketing in Miraj tahsil,1987.

Sr. No.	Category	Percentage share in marketing
1	Retailing at Garden	20.32
2	Local stalls	02.73
3	Khoti	10.15
4	Commission agencies	59.38
5	Association (GGA)*	07.42
	Total	100.00

* GGA - Grape Grower's Association

SOURCE : Compiled by the author, 1987.

The above methods of grape marketing has led for the variations in the prices received to farmers in the garden.

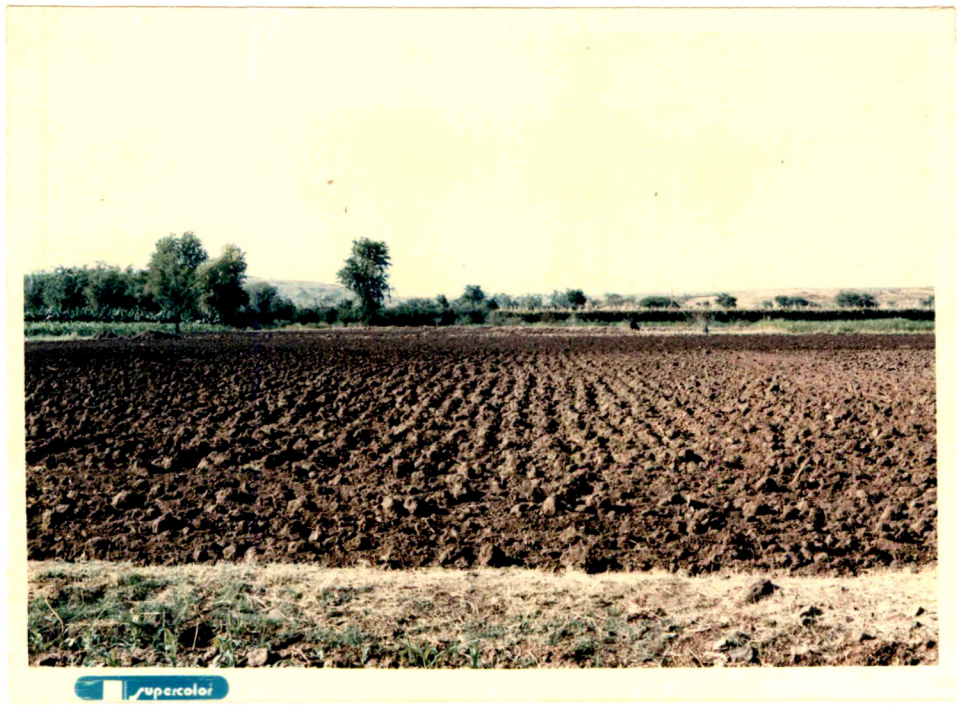

Plate No.1 : Preparation of Trenches

Plate No.2 : Spacing of grape-vines

Plate No.3 : Plantation of grape-vines

Plate No.4 : Bamboo supports to grape-vine

Plate No.5 : Permanent support to grape-vine

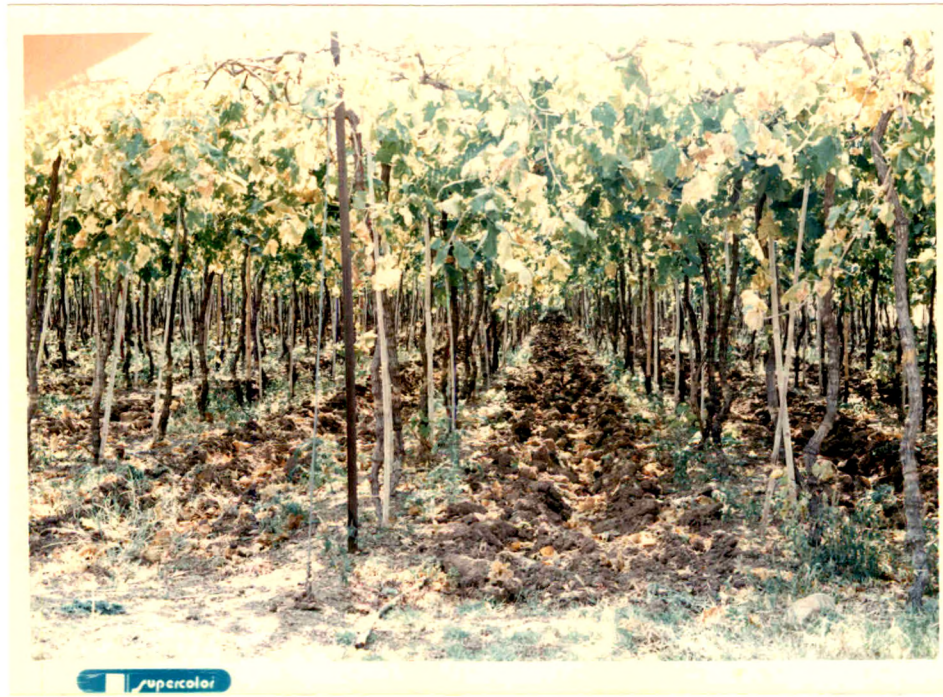

Plate No.6 : Ploughing in the vine-yard

Plate No.7 : Grape-vine beds

Plate No.1 : Picking of grapes

Plate No.2 : Collection and grading of grapes

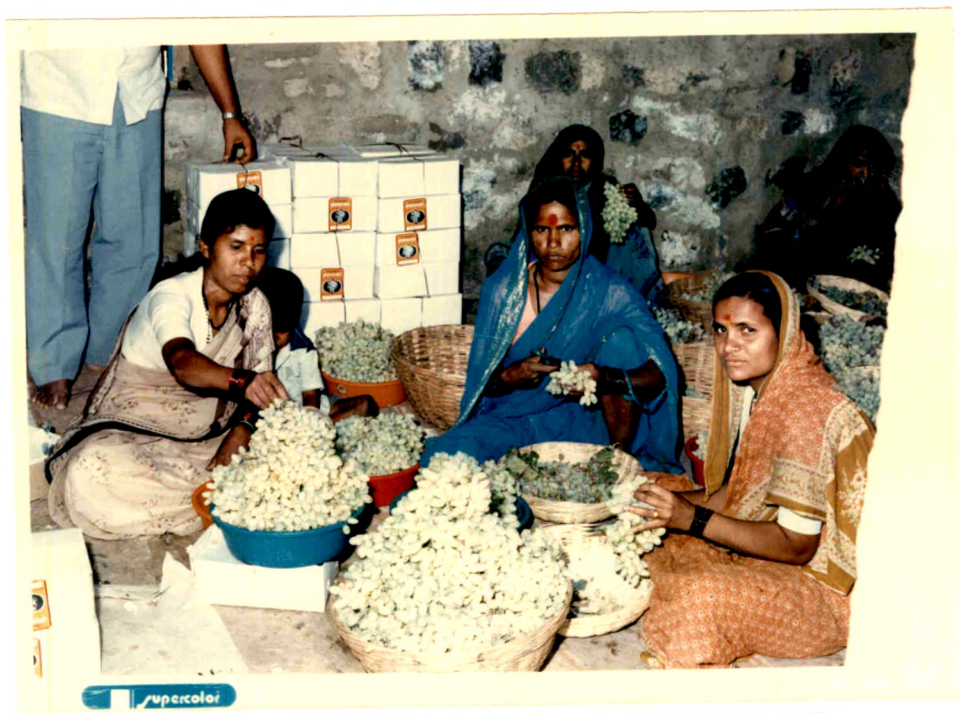

Plate No.3 : Packaging of grapes

TABLE 5.11 : Villagewise grape production and market prices in Miraj tahsil, 1986-87.

Sr. No.	Village	Boxes per hect. 4 kg/each	Grape production per hect./ kg	Rate per box 4 kg each (Rs.)	Total production in Rs.	% share in total grape production
1	Arag	7,038	28,152	32.00	225,216.00	1.93
2	Bamni	4,821	19,284	26.30	126,792.30	1.32
3	Bedag	8,781	34,964	26.85	235,769.85	2.41
4	Belunki	6,344	25,376	28.00	177,632.00	1.74
5	Bhose	3,466	13,864	28.50	098,781.00	0.95
6	Bisur	11,458	45,832	26.30	301,345.40	3.14
7	Bolwad	7,510	30,040	28.10	211,031.00	2.06
8	Budhgaon	5,375	21,500	23.16	124,485.00	1.47
9	Chabu Wadi	6,500	26,000	26.16	170,040.00	1.78
10	Dhamni	8,700	34,800	27.00	234,900.00	2.38
11	Dhavari	10,000	40,000	28.00	280,000.00	2.74
12	Dongarwadi	5,666	22,664	26.50	150,149.00	1.55
13	Prandoli	7,500	30,000	28.65	214,875.00	2.05
14	Gandewadi	5,789	23,156	28.50	164,986.50	1.58
15	Janraowadi	5,166	20,664	30.00	154,980.00	1.41
16	Kadamwadi	8,242	32,968	25.80	212,643.60	2.26
17	Kakadwadi	7,083	28,332	21.00	148,743.00	1.94
18	Kalambi	6,500	26,000	27.50	178,750.00	1.78

Conti..

Table 5.11 conti..

Sr. No.	Village	Boxes per hect. 4 Kg/each	Grape production per hect./ kg	Rate per box 4 kg each (Rs.)	Total production in Rs.	% share in total grape production
19	Kanadwadi	7,200	28,800	31.65	227,680.00	1.97
20	Karnal	7,210	28,840	28.50	205,485.00	1.97
21	Karoli	4,000	16,000	27.80	111,200.00	1.09
22	K.Degrees	6,176	24,704	30.00	185,280.00	1.69
23	Kavalapur	6,463	25,852	26.30	169,976.90	1.77
24	Kavathe Piran	9,363	37,452	25.85	242,033.55	2.57
25	Kavaji Khotwadi	7,000	28,000	24.00	168,000.00	1.92
26	Khande Rajuri	6,472	25,888	26.90	174,096.80	1.77
27	Kharkatwadi	6,200	24,800	24.50	151,900.00	1.70
28	Khatav	6,230	24,920	26.00	161,980.00	1.71
29	Kupwad	5,662	22,648	25.90	146,645.80	1.55
30	Lingnoor	10,090	40,360	25.50	257,295.00	2.76
31	Malgaon	7,900	31,600	27.00	213,300.00	2.16
32	Mallewadi	7,714	30,856	28.00	215,992.00	2.11
33	Manmodi	11,000	44,000	28.00	308,000.00	3.01
34	Mhaisal	5,000	20,000	27.00	135,000.00	1.37
35	Miraj	10,590	42,360	28.85	305,521.50	2.90
36	Narwad	7,916	31,664	28.90	228,772.40	2.17
37	Patgaon	5,892	23,568	27.50	162,030.00	1.61
38	Payapaonwadi	6,838	27,352	26.00	177,788.00	1.87

Conti..

Table 5.11 conti..

Sr. No.	Village	Boxes per hect. 4 kg/each	Grape production per hect./ kg	Rate per box 4 kg each (Rs.)	Total production in Rs.	% share in total grape production
39	Rasulwadi	6,689	26,756	30.50	204,014.50	1.83
40	Salgare	7,181	28,724	26.30	188,860.30	1.97
41	Samberwadi	7,500	30,000	25.50	191,250.00	2.05
42	Samdoli	6,571	30,284	26.00	170,846.00	1.80
43	Santoshwadi	3,690	14,760	26.30	970,47.00	1.01
44	Samavi	4,673	22,692	27.00	153,171.00	1.00
45	Shipur	6,687	26,748	30.30	202,616.10	1.83
46	Shiddhewadi	7,600	30,400	25.00	190,000.00	2.08
47	Soni	7,381	29,524	23.80	175,667.80	2.02
48	Takali	8,900	35,600	28.50	253,650.00	2.44
49	Tanang	7,000	28,000	23.25	162,750.00	1.92
50	Tung	6,024	18,096	26.35	158,732.40	1.65
51	Vaddi	5,774	23,096	29.80	172,065.20	1.58
52	Wanlesswadi	6,770	27,080	28.00	189,560.00	1.85
	Total	364,295		1409.07	9,869,327.00	100.00%
Per hectare region Average		7,005.60	28,020	27.09	189,795.00	

SOURCE : Compiled by the author, based on field data, 1987.

5.8 TOTAL GRAPE PRODUCTION AND PRICES :

Table 5.11 exhibits villagewise picture of total production and the prices received to grape growers during 1986-87 season. In fact, there is regional variation in prices received to farmers. But such variations can be attributed to quality of grape and the method which is adopted for selling the grapes.

The region has produced about 364,295 boxes of 4 kg each amounting Rs.9,869,327 in 1987. The villages of Bisur (Rs.301,345), Dhavali (Rs.280,000), Kavathe Piran (Rs.242,033), Lingnoor (Rs.257,295), Manmodi (Rs.308,000), Miraj rural (Rs.305,521) and Takali (Rs.253,650) have achieved fair position in marketing of grapes. The regional variation in the production depends also on villagewise area under grape gardening. The prices per box (4 kg) also ranging from Rs.21 to Rs.32 in all the villages (Table 5.11). The lowest price per box Rs.21 is recorded by the vine yards of Kakadwadi village whereas maximum of Rs.32 is found in Arage village. Table 5.11 also reveals the proportion of grape produce in the total of each village in the region. The villages of Bisur (3.14%) and Manmodi (3.01%) have recorded substantial proportion in the total products.

The above analysis reveals the fact that the prices for grape are not uniform. The involvement of middlemen is still dominant. The GGA has much scope in marketing the grapes at fair prices. The basic problem of credit facilities, to be given

to farmers as and when he requires, should be considered so as to eradicate the role of middlemen in marketing.

5.9 MARKETING FLOW OF GRAPES :

Fig.5.1 shows the general flow of grape through different channels. There are five major channels through which the grapes are sold in Miraj tahsil.

1) Producer - village consumer
2) Producer - forwarding agents - consumer
3) Producer - local sellers - commission agents - consumer
4) Producer - Grape Grower's Association - Agencies - Consumer
5) Producer - Agents - Export - Consumer

Almost in all the vine-yards the grapes are sold to the consumers daily which accounts for 20.32 percent in the region.

The second channel is between grape producers - middlemen and altimately to consumer in the country or export. Many agencies are involved to export grapes from Bombay about which data is not available. Third channel is between the sellers in the local markets like Sangli, Miraj, Kolhapur or other taluka places. Some times local sellers are between commission agents and farmers in the region. The co-operative agencies are playing important role in the region which link the producer to consumer. About 7.42 percent produce is sold through Grape Grower's Association. In case of many vine yards there is direct link between commission

MIRAJ TAHSIL FLOW CHANNEL OF GRAPE MARKETING 1987

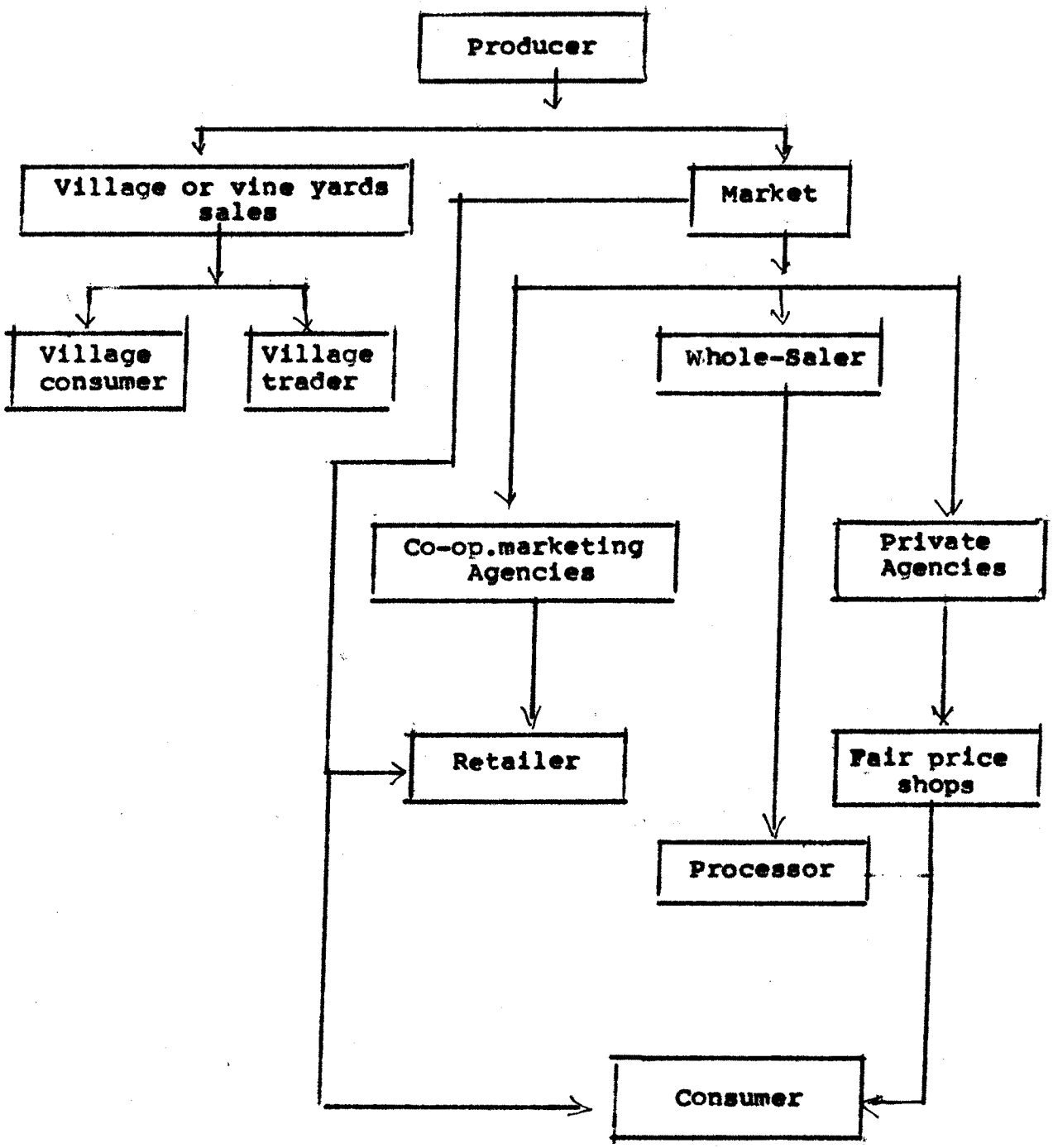

Fig.5.1

agents at Bombay and producer of the region. The grape produce is qualitative and mainly for export purposes to Middle-East countries. In general national and regional markets are linked through private agencies mainly and middlemen have dominant role in this regard in the region.

5.10 MODES OF TRANSPORT :

Table 5.12 exhibits the share of various modes of transport in the distribution of grapes to local, regional, national and international markets. Tempo service has became popular in the region which has handled 572,235 boxes (4 kg each) i.e. 64.97% of the total produce during 1987 season. Truck is the second ranking means of transport which shares about 22.43% of the total. The tempo and truck services link the producing areas with local and regional markets. Mention should be made that Bombay provides major marketing facilities for grape. The grapes sent by railway from Miraj to different markets in the country (Fig.5.2) accounting for 12.10% share. The foreign market i.e. Middle East countries, are also tapped by air via Bombay which contributes insignificantly (0.50%).

5.11 MARKET CENTRES FOR GRAPES :

Table 5.14 indicates the number of markets, grape growers and quantity of grapes marketed during 1986-87. Of the total 909,860 boxes produced 557,970 (71.97%) boxes (4 kg each) are marketed in national markets. About 532 (62.16%) grape growers are

TABLE 5.12 : Different modes of transportation of grapes, 1986-87.

Sr. No.	Source of Transport	Quantity of boxes (4 kg each)	Percentage
1	Tempo	572,235	64.97
2	Truck	197,625	22.43
3	Railway	106,500	12.10
4	Air	004,400	00.50
	Total	880,760	100.00

SOURCE : Compiled by the Author, 1987.

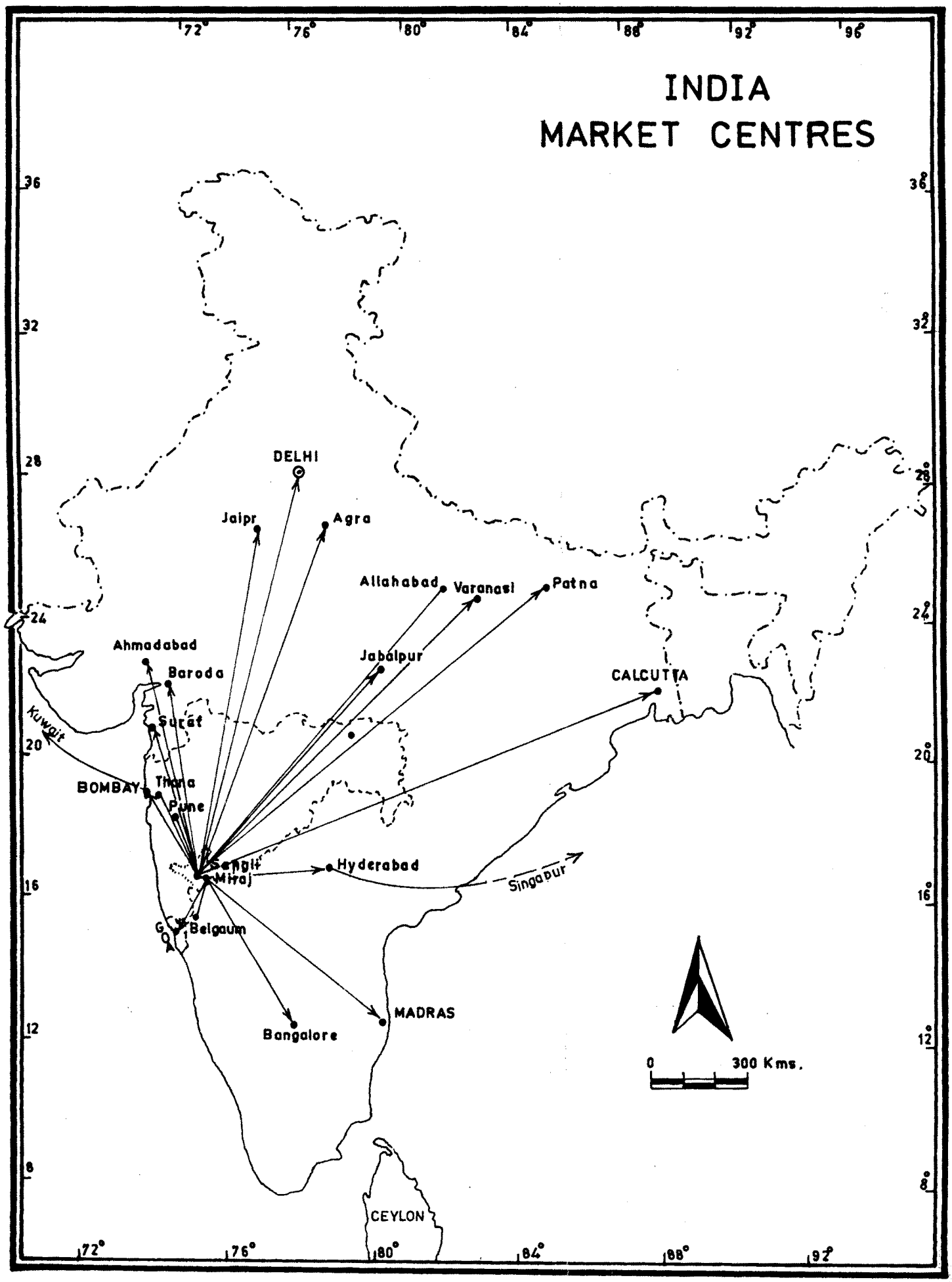
INDIA
MARKET CENTRES
72°
76°
80°
84°
88°
92°
96°
36
32
28
24
20
16
12
8
DELHI
Jaipr
Agra
Allahabad
Varanasi
Patna
Ahmadabad
Baroda
Jabalpur
CALCUTTA
Kuwait
Surat
BOMBAY
Thana
Pune
Sangli
Miraj
Hyderabad
Singapur
Belgaum
Bangalore
MADRAS
CEYLON
0
300 Kms.

Fig. 5·2

involved in selling their produce in the national markets. Further, the share of national markets in North India is considerable (36.62) as compared to South Indian Markets (26.87%). The populated belt of North India renders assured market to grapes. The important market centres in North India are Delhi (14.40%), Agra (0.39%), Varanasi (5.19%), Lucknow (1.29%), Calcutta (7.63%), Hawara (0.51%), Allahabad (6.52%) and Hydrabad (0.69%). All these markets are connected by railway to Miraj market.

The share of South Indian market is also substantial (26.87%) in the total marketing of grapes. Bangalore (18.70%), Belgum (0.30%) and Goa (7.87%) are major markets in South India. Thus, it is evident from the fact that the national markets are playing important role in marketing the grapes of the region. Moreover, the role of local markets in the form of taluka places, regular as well as weekly markets is also of immense importance regarding marketing of grapes in the region. Within State, Bombay (18.33%) is leading market from which most of the grapes are exported to foreign countries by air. Pune is another market with 5.12% share followed by Miraj (3.58%), Kolhapur (2.09%) and local villages (3.73%). The total contribution of local and regional market is about 35.35 percent (314,865 boxes of 4 kg each). About 309 grape growers (36.08%) are involved to send their produce to local and regional markets.

TABLE 5.13 : Market centres for grape produce of Miraj tahsil, 1987.

Sr. No.	Name of the Market	No.of grape growers	Percent	Quantity boxes (total)	Percent
I	Bombay	153	17.88	165,950	18.33
LOCAL AND REGIONAL MARKETS	Thane	6	0.70	8,000	0.87
	Pune	45	5.25	46,650	5.12
	Nagpur	9	1.06	5,850	0.74
	Kolhapur	28	3.28	19,100	2.09
	Sangli	8	0.93	7,200	0.89
	Miraj	26	3.03	28,050	3.58
	Local	34	3.95	34,065	3.73
	Total	309	36.08	314,865	35.35
II	North India				
NATIONAL MARKETS	Delhi	86	10.04	121,175	14.40
	Agra	2	0.23	750	0.39
	Varanasi	40	4.68	46,325	5.19
	Lucknow	12	1.40	11,800	1.29
	Calcutta	53	6.20	68,550	7.63

Conti..

Table 5.13 conti..

Sr. No.	Name of the Market	No.of grape growers	Percent	Quantity boxes (total)	Percent
	Havara	6	0.70	4,700	0.51
	Allahabad	87	10.17	56,810	6.52
	Hydrabad	9	1.06	5,425	0.69
	Total	295	34.48	315,535	36.62
	South India				
	Bangalore	158	18.46	169,835	18.70
	Belgum	5	0.58	2,800	0.30
	Goa	74	8.64	69,800	7.87
	Total	237	27.68	242,435	26.87
	Grand Total	532	62.16	557,970	63.49
III					
INTERNATIONAL MARKETS	Kuwait	9	1.06	5,875	0.62
	Singapur	6	0.70	4,700	0.52
	Total	15	1.76	10,575	1.16
	Grand Total	856	100.00	909,860	100.00

SOURCE : Compiled by the author, 1987.

Notwithstanding, Kuwait (0.64%) and Singapur (0.52%) are major foreign markets to grapes of this region. In 1987, the region exported about 10,575 boxes of 4 kg each to these countries. The field interviews revealed the fact that there is much scope for foreign markets in view of the quality of grapes.

The above analysis shows that the region has commandable linkage with different markets in India (Fig.5.2). The National markets are leading (63.49%) as compared to local and regional markets (35.35%). Thus, the scope for achieving national markets can still further be strengthened in future. The Grape Grower's Association will have to play a major role in the expansion of market facilities in the country.

5.12 PROBLEMS OF MARKETING THE GRAPES :

The field enquiry reveals that there are some problems influencing the distribution of grapes in Miraj tahsil. The nature and magnitude of such problems varies with the size of the farm, production of grapes and farming business too.

i) Labour :

The problem of shortage of labour is acutely faced by large grape growers during harvesting period. Moreover, medium sized grape growers have to face the same. But small sized farmers find less gravity of this problem as during peak season

family members can overcome such difficulty. The low wages of labours (Male and Female) are also another issue which discourages them for working in the region.

TABLE 5.14 : Number of vine yards facing different problems, 1987.

Sr. No.	Category	Absolute number of vine yards	Percentage
1	Water scarecity	180	30.26
2	Adverse soil conditions	6	1.00
3	Inadequate fertilizer supply	31	5.21
4	Untimely pesticides supply	8	1.35
5	Sprayers	17	2.86
6	Labour shortage	73	12.27
7	Marketing	30	5.04
8	Natural hazards	250	42.01
	Total	595	100.00

SOURCE : Compiled by the Author - 1987.

ii) Transportation :

The transport of grapes from farm to disposal centre is mainly done by road transport. Sometimes the hired vehicles are

not available. Recently GGA has introduced it's own regular transport services and the grape produce is picked up from road side points. This has been sent to Bombay market or Miraj market for further disposal. The small sized farmers and medium sized farmers face the problem of transport from field to road side points which is usually done by human labour.

iii) Price flactuations :

The flactuations in prices are not reported to farmers due to poor communication in the region as he has no proper knowledge of market prices. The marketing societies should make a provision to inform farmers in time. This would enable him to harvest grapes according to price flatuations.

iv) Credit :

About 67.50 percent small sized and 45.70 percent medium sized farmers have reported that credit is not received to them in time. This situation leads them to sell grapes to local shop-keepers of the villages or the region at low prices. Though, they know that the prices offered are low but they have no other option.

v) Packing material :

This includes bamboo baskets, paper, corogated boxes, threads. These materials are not easily available. The prices are also increased recently. One bamboo basket (6 kg each) costs Rs.4/- and corogated box Rs.4.50 (4 kg). The small farmers are unable to pay more prices. As a result they tend to sell their produce locally.

vi) Storage :

Since grape is perishable fruit it has to be put into market immediately. This also requires cold storage facilities. At Miraj cold storage facilities are made available but they are inadequate. This also leads to discourage disposal of grapes to different markets in India. Table 5.14 indicated different problems faced by grape growers in the region. Natural hazards in the form of hail-storms, cold waves is acute problem which affects on quality and quantity of produce and ultimately on marketing. This has been followed by water scarecity. All these problems are finally linked with marketing of grapes.

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