

C H A P T E R N O . I I I .

I M P A C T S T U D Y .

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I M P A C T S T U D Y

The economic development activities that the co-operative sugar factories in Maharashtra undertook was studied in March 1981 by the committee headed by B.Venkatappaiya to asses the economic impact of the co-operative sugar factories

The Committee concluded that " The area under sugar cane in the state has increased from 2 lakh acres in 1950-51 to 6 lakh acres in 1978- 79. The production of sugarcane has now touched the level of 30 lakh million tonnes during 1981-82 season. In case of participants of the co-operative sugar factories the member cultivators increased by 188% and savings increased by 263% at the end of March 1981. The total capacity likely to increase up to 1 lakh 72 thousand TCD during the Sixth Five Year Plan on-account of new licenced and also due to expansion in the installed capacity of the existing factories as approved by the planning department of the State Government."⁷

At present the schemes for development, implemented by co-operative sugar factories are more effective and efficient. The co-operative sugar factories have played a major role in rationalising pattern of income distribution in rural areas. These factories are generating income through the media of farmers in rural area. The profit earning motive is replaced by capital formation for other sub units of these co-operative sugar factories in rural area.

Because of above activities, the total rural picture is changed by these factories. The farmers are motivated in commercial enterprises for earning greater profits. The farmers are benefited through service, guidance, high yielding varieties seeds and improved methods of agriculture by these co-operative sugar factories.

The industrial development which includes dairy, poultry, irrigation, distribution of consumable goods is seen in the operational areas. Through this infrastructure, these factories are provided larger employment opportunities. This helps to raise income level of rural community.

In this way the co-operative factories in Maharashtra, have increased the level of agricultural production, sugar cane production, income, saving, investment and consumption of the farmers. The present study discusses the matter of common interest of the producer members of the Krishna Sahakari Sakhar Karkhana Ltd. Rethare Budruk.

The Krishna Sahakari Sakhar Karkhana Ltd. Rethare Bk. has implemented different schemes and programmes for the development of its operational area. The impact study concentrates on only producer members, because there is direct impact of factory on producer members than other farmers. Most of the farmers are members of the factory through its area of operation. The impact study presents the impact according to following sequence.

III:1. IMPACT ON AGRICULTURE:

The Krishna Sahakari Sakhar Karakhana Ltd.

Rethare Bk. provides improved seeds, compost manures, irrigation facilities to the producer members which results to improve the interest in agriculture of producer members. The producer members' size of land is changed after the membership of the factory.

3:1:1. IMPACT ON LAND HOLDING:

TABLE NO.3:1.

Distribution of Sampled members with size holding.

Group No.	Size of Holding :In acres	:Before membership. :No.of :Members.:in acres	:After Membership. :No. of :Members.:in acres	:Change :Numbers.:in acres	:Change in :Land in
I.	Up to 25 Marginal Farmers.	50 (26.67)	48 (22.91)	-2	-2
II.	2.5to5 Small Farmers.	25 (22.22)	27 (26.01)	+2	+34
III.	5 to 8 Medium Farmers.	15 (19.33)	15 (23.30)	--	+33
IV.	Above 8 Large Farmers.	10 (31.78)	10 (27.78)	--	--
TOTAL:-		100 (100)	100 (100)	--	+65

NOTE:- The data in parenthesis indicates the percentage(%) to the vertical.

The table No. 3:1 indicates that out of the total sampled producer members 50 members were marginal farmers holding 120 acres of land, before the membership of the factory. There were 25 small farmers. The total land area hold by this group was 100 acres. 15 medium farmers were holding 87 acres of land. There were 10 producer members from large farmers group holding 143 acres of land. The total land area was 450 acres.

After the membership, the number of marginal farmers was 48, small farmers 27, medium farmers 15 and large farmers 10. The total land holding was 515 acres.

The above table illustrates the facts that-

a) The number of marginal farmers decreased by 2% while the area of land holding of the same of the holding decreased by 3.75%. Because this group jumped in another i.e. in (II) group.

b) The major impact on size of holding is observed among small farmers. The number of members who entered in this group during the study period is 2, while the area they hold is 134 acres during the same period.

c) Though the number of medium farmers remain the same during the study period, the per-capita land holding is increased from 5.0 to 8.0 acres.

d) There is no any change in the situation of large farmers group, during the study period.

e) The total land area increased by 65 acres which is bought from other than the selected sampled members and 2 acres from marginal farmers (I) comes under the small and the medium size groups(II & III).

3:1:2. IMPACT ON IRRIGATED LAND:

A) IMPACT ON SIZE OF THE IRRIGATED LAND:- The area under irrigation was only 340 acres before membership. After the membership the area is increased by 17.9%. The table No. 3:2 indicates the non irrigated area is decreased by 12.3% to total land area after the membership. The percentage of waste land is decreased by 5.6%.

TABLE NO.3:2.

Area under irrigated and non-irrigated land.

Type of Land.	<u>Before membership.</u>		<u>After membership.</u>		Volume of
	Land Area:	% to total:	Land Area :	% to total :	Change
	in Acres.:	Land area.:	in Acres. :	Land Area. :	(+ or -)
1.Irrigated.	340	75.6	482	93.5	+17.9%
2.Non-Irrigated.	80	17.8	28	5.5	-12.3%
3.Waste.	30	6.6	5	1.0	-05.6%
TOTAL:-	450	100	515	100	--

The Table No. 3:2 shows that the most of the sampled producer members used their waste land for sugar cane production because factory has made available irrigation schemes to the concerning land pieces. The producer members took advantages of these schemes by improving waste land in to cultivable land which is considered under irrigated land.

Before, the membership the total land area of waste land was 30 acres but after the membership the waste land area reduced to five acres. It indicates the greater decrease in percentage of waste land. This results to increase the area of irrigated land.

The total non-irrigated area decreased by 12.3% (52 acres) and the waste land decreased by 5.6% (25 acres). The total land area newly brought under irrigation is 77 acres. The land area of 65 acres, which was bought is also irrigated.

B) IMPACT ON IRRIGATED LAND WITH DIFFERENT SOURCES:

There are three main sources of irrigation, in the sampled villages as follows:-

1. Well.
2. Factory lift irrigation schemes.
3. Private lift irrigations.

The change in area under different irrigation sources is given in table No. 3:3.

TABLE NO. 3:3

Table showing area of irrigated land by different sources:

Source of Irrigation.:	Before Membership.		After Membership		Volume Change in Acares.:
	Land	% to the	Land	% to the	
	in	Total.	in	Total.	
	Acares.:		Acares.:		
1. Well.	085	25	135	28	+3
2. Factory Lift Irrigation Schemes.	200	58	309	64	+6
3. Private Lift Irrigation. Schemes.	055	16	038	8	-8
TOTAL:-	340	100	482	100	--

The above table indicates that before the membership the area under well irrigation was 85 acres i.e. 25% to the total irrigated land.

After the membership the area was 135 acres. The area under well irrigation is increased by 3% i.e. by 50 acres. This irrigation increased due to the lift irrigation and its percolation.

Before the membership, the area under factory lift irrigation scheme was 200 acres and it was 58% to the total irrigated area. After the membership this area was 309 acres i.e. 64% to the total irrigated area. The net increase in area under the factory lift irrigation scheme was 6%.

In case of private lift irrigation scheme, the area was 55 acres i.e. 16% to the total land, before the membership. After the membership, the area under this source was only 38 acres. The percentage of which was 8% to the total irrigated land. It shows that the percentage of irrigation under this source is decreased, due to the factory lift irrigation schemes.

C) IMPACT ON IRRIGATED LAND AND NON-IRRIGATED LAND WITH SIZE GROUP OF HOLDINGS:

The impact on irrigated and non-irrigated land area is shown in the table No.3:4. The pattern of irrigated and non irrigated land is changed. This change is shown in this table according to the size groups of sampled producer members, before the membership and after the membership in acre and percentage.

TABLE NO. 3:4.

Change in irrigated and non-irrigated land with
size groups of land holding:

Size group of Land Holding.	Before Membership				After Membership.			
	(Land in acres)				(Land in acres)			
	Irri- gated.	Non- Irri- gated.	Waste	Total.	Irri- gated.	Non- Irri- gated.	Waste	Total.
	:	:	:	:	:	:	:	:
1. Marginal Farmers. (Group-I)	93	23	04	120	110	8	-	118
2. Small Farmers. (Group-II)	68	30	02	100	125	9	-	134
3. Medium Farmers. (Group-III)	60	17	10	87	114	5	1	120
4. Large Farmers. (Group-IV)	119	10	14	143	133	6	4	143
TOTAL:-	340	80	30	450	482	28	5	515
Percentage:-	(75.6)	(17.8)	(6.6)	(100)	(93.5)	(5.5)	(1.0)	(100)

NOTE:- 1. Marginal Farmers(Group-I) = Farmers
holding land upto 2.5 acres.

2. Small Farmers(Group-II) = Farmers
holding land 2.5 to 5 acres.

3. Medium Farmers(Group-III) = Farmers
holding land 5 to 8 acres.

4. Large Farmers(Group-IV) = Farmers
holding land more than 8 acres.

5. The data in parenthesis indicates the
percentage to the horizontal.

The table No.3:4 indicates that in case of Group-I i.e. marginal farmers group, the land area was 120 acres, out of which 93 acres land was irrigated and 23 acres of land was under non-irrigation. Four acres of land was waste land, before the membership. After the membership, the irrigated land was increased from 93 acres to 110 acres and non-irrigated land was decreased from 23 to 8 acres. The 4 acres of land which was waste is used for cultivation by this group.

In case of Group II, the land area under irrigation was 68 acre. The non-irrigated but cultivable land was 30 acre, the waste land was of 2 acres, before the membership. After the membership, the total land was 134 acres, out of which 125 acres was under irrigation and 9 acres was under non-irrigated cultivable land. That is the land under irrigation is increased by 57 acres among this group.

In case of Group III, before the membership of the factory the irrigated land was 60 acres and non-irrigated land was 17 acres, where as waste land area was of 10 acres. After the membership, the land area is increased under irrigation, which was 114 acres out of the total land 120 acres. The land area under waste land is decreased from 10 to 1 acre.

In case of Group IV, i.e. large farmers group, the total land under irrigation was 119 acres before the membership. It is increased up to 133 acres after the membership. That is the net increase in irrigated land in this

group is of 14 acres. The waste land is decreased from 14 to 4 acres, after the membership.

Before the membership out of the total land 75.6% land was under irrigation, After the membership, the 93.5% land is under irrigation out of the total land area.

This shows that there is raise in percentage of irrigated land area after the membership, because of the provisions of lift irrigation schemes, provided by the factory. This increasing percentage of irrigated land changed the cropping pattern of the sampled producer members.

3:1:3. IMPACT ON CROPPING PATTERN:

It is observed that the producer members' cropping pattern is changed after the membership of the factory. The table No. 3:5 shows the change in cropping pattern of sampled producer members.

TABLE NO. 3:5.

THE CHANGE IN THE CROPPING PATTERN OF PRODUCER MEMBERS:

Sr. No.	Crops.	Before membership. (In acres)				After membership. (In acres)				Volume Changed.		
		(Area under size groups)				(Area under size group)						
		Group: I.	Group: II.	Group: III.	Group: IV.	Group: I.	Group: II.	Group: III.	Group: IV.			
		Area & : (%)	Area & : (%)	Area & : (%)	Area & : (%)	Area & : (%)	Area & : (%)	Area & : (%)	Area & : (%)			
1.	Jowar (Hyv)	24	22	09	15	70 (16.6)	10	07	03	01	21 (4.11)	-49
2.	Wheat.	06	12	01	01	20 (4.76)	04	05	05	05	19 (3.72)	-1
3.	Paddy.	30	20	15	15	80 (19.0)	20	20	20	15	75 (14.70)	-5
4.	Gram.	03	02	03	01	09 (2.14)	05	--	--	--	05 (0.98)	-4
5.	Groundnut.	20	01	--	10	31 (7.38)	10	24	12	15	61 (11.96)	+30
6.	Sugarcane.	20	40	40	68	168 (40.0)	55	70	69	81	275 (53.93)	+107
7.	Vegetable.	10	--	06	12	28 (6.66)	12	05	08	20	45 (8.83)	+17
8.	Others.	03	01	03	07	14 (3.33)	02	03	02	02	09 (1.77)	-05
Total:-		116	98	77	129	420 (100.0)	118	134	119	139	510 (100.0)	

Note:- The data in parenthesis indicates the % to the vertical.

The Table No. 3:5 shows that before the membership, out of the total land area 16.6% land was under Jowar, 4.76% under wheat, 19% under paddy, 2.14% under gram, 7.38% under groundnut, 40% under sugarcane, 6.66% under vegetables and 3.33% area was under other crops.

After the membership, the percentage of sugarcane crop is increased from 40% to 53.93% and percentage of groundnut increased from 7.38% to 11.96%. The percentage of vegetables is increased from 6.66% to 8.83%.

On the otherhand the percentage of Jowar is decreased from 16.6% to 4.11% and percentage of wheat is decreased from 4.76% to 3.72%. There is greater decrease in percentage of area under gram. It is decreased from 2.14% to 0.98%.

Only 5 sampled producer members are producing grams after the membership. Most of the producer members are not producing grams, because they feel :-

1. In irrigated area it is not beneficial,
2. Excess water of lift irrigation decreases the gram production.

If neighbour farmers used excess water to their crops the gram producer farmer could not adopt any preventive measures for the percolation of that excess water. So the production of gram is decreasing day by day in this area.

The production of sugarcane is increased because-

- a) The farmers are habituated to cultivate sugar cane production, due to less precautions concerned with crop deases. More ever it requires list management with compare to other crops.
- b) If small farmers plots are surrounded by sugar cane plots, he can not cultivate other crops except sugarcane.
- c) They can earn more income from sugarcane production with compare to production of Jowar, Paddy and Wheat.
- d) The responsibility of transporting and harvesting of sugarcane is taken by the factory.
- e) They can take other short term corps in the plot of sugarcane.
- f) Joint planning for land leveling or irrigation schemes is more posible in respect of sugarcane cultivation with compare to other crops.
- g) The producer members are using agricultural e implements which increases the suitability in sugarcane cultivation e.g. use of tractors, rotavators, power teelers etc.

Now a days, farmers are using improved seeds of sugarcane like Co-7219, Co-7125, local manures, composts and fertilizers, crop protection measures etc. The land development programmes and water facilities provided by the factory are important factors for the increasing percentage of sugarcane cultivation in the sampled villages.

It is observed that the tendency to use poultry manures and press mud manures is increased only in those villages which are nearer to the factory. Because, the cost of transportation is less in these villages.

The marginal and small farmers were not purchasing these manures only because of the excess cost of transportation and cost of loading and unloading of these manures from the factory area to their farms.

The facilities like supply of seeds, compost manures, supply of water, supply of agricultural equipments and credit guarantee provided by the factory to the sampled producer members, during study period is shown in the table No. 3:6 as follows.

TABLE NO.3:6.

Agricultural facilities provided by the factory
to sampled producer members:

Type of facility.	No. of members with size group.				TOTAL.
	Group.	Group.	Group.	Group.	NOS.
	I.48.	II.27.	III.15.	IV.10.	100
1. Supply of Seeds.	13 (27.08)	09 (33.33)	06 (40.0)	05 (50.0)	33 (33)
2. Supply of Compost Manures.	17 (35.42)	13 (48.15)	05 (33.33)	07 (70.0)	42 (42)
3. Supply of Water.	41 (85.42)	20 (74.07)	09 (60.0)	05 (50.0)	75 (75)
4. Supply of Agricultural Equipments.	-- (--.--)	01 (03.70)	03 (20.0)	07 (70.0)	11 (11)
5. Credit Guarantee.	40 (83.33)	21 (77.78)	07 (46.47)	09 (90.0)	77 (77)

(Note:- The data in parenthesis indicates the percentage to
the total number of size group.)

The above Table No. 3:6 indicates, the facilities
obtained by the sampled producer members during the study
period with size group.

In the group I, there were 48 members out of which
13 members have purchased the improved seeds like sugar cane,
lemon plants, mango, coconut and nilgiri plants from factory.

The percentage of these members to the total members in this group is 27.08%. 17 members among this group purchased compost manures, the percentage of which is 35.42%. Out of 48 total members 41 members are using water from factory irrigation scheme. The percentage is 85.42% to the total members in this group. The farmers among this group have not provided agricultural equipments from the factory. 40 members have obtained guarantee for loans from the factory, the percentage of which is 83.33% to the total members in this group.

In case of group II, the small farmers group, out of the 27 total members, only 9 members purchased seeds, 13 members purchased compost manures, 20 members provided water facilities and 21 members are provided the guarantee for loans, by the factory. The percentage of this to total members in this group is 33.33%, 48.15%, 74.07%, and 77.78% respectively.

In case of group III, there were 15 total members out of which 6 members purchased seeds, 5 members purchased compost manures, 9 members are obtaining water facilities, 3 members are using agricultural equipments and 7 members are provided guarantee to loans borrowed by them. The percentage of this to the total members in this group is 40%, 33.33%, 60%, 20% and 46.47 respectively. In case of group IV this percentage is as 50%, 70%, 50%, 70% and 90% respectively.

It is observed that the maximum facilities are obtained by the group IV, i.e. large farmers, than the small farmers.

Out of the total members 33% members have purchased improved seeds from the factory. 42% members have purchased compost manures from the factory. 75% members have used the water of factory lift irrigation schemes and 77% of the total members obtained guarantee for loans borrowed by them for different purposes.

In this way, the table shows that the facilities provided by factory to the producer members is main cause for the development in agriculture, and increase in the production of sugarcane.

3:1:4. IMPACT ON INCOME:

The main source of income of the producer members is an agriculture. The income depends on the number of subsidiary business. Before the membership, producer members were not participating in subsidiary business like dairy farming, poultry farming and others. After the membership, a lot change is seen in this picture. Majority farmers are taking interest in the subsidiary business which has increased their income level.

The income from subsidiary business, before the membership and after the membership is compared in this table. (Table No.3:7)

TABLE NO.3:7.

Income from subsidiary business.

Type of Business.	<u>Before Membership.</u>		<u>After Membership.</u>	
	Gross Income Rs. (,000)	No. of Producer Members. :	Gross Income Rs. (,000)	No. of Producer Members. :
1.Dairy.	30 (51.72)	16	87 (54.37)	30
2.Poultry.	25 (43.10)	10	68 (42.50)	25
3.Fisheries.	03 (7.18)	02	05 (3.13)	03
TOTAL:-	58 (100)	28	160 (100)	58

$$\text{Gross Income} = \text{Price} \times \text{Quantity.}$$

Before membership the annual gross income of 16 dairy farmers from dairy source was Rs. 30 thousand. That is 51.72% to the total gross income from subsidiary business. After the membership the number of dairy farmers increased from 16 to 30. This raise in number is caused because, of the provisions of guarantee of loans provided by the factory. The services provided by the factory and interest in dairy farming increased by the factory. The gross income of these 30 sample producer members was Rs. 87 thousand i.e. 54.37% to the total gross income from subsidiary business activities.

In case of poultry the members increased from 10 to 25 and gross income increased from Rs. 25 to 68 thousands. The percentage of this gross income to total gross income from subsidiary business was 43.10% which is decreased by 1.5% after the membership, because-

- a) The marginal farmers and small farmers were not managing the subsidiary business properly.
- b) These farmers were not enough credit worthy to borrow loans for these business.
- c) It is observed that these farmers have no proper training of keeping the poultry birds and pullets.
- d) According to their opinion the small unit i.e. below 250 birds is not beneficial.
- e) They could not maintain their breakage of eggs due to improper storage and transportation methods.

There is no proper response from the producer members to the fishary business because most of the respondent are not interested and have not any knowledge of this business.

The gross income from subsidiary business was Rs. 58 thousand before the membership, which is increased upto Rs. 160 thousand after the membership, because it is observed that the producer members have purchased milch animals and poultry birds as a source of income.

The subsidiary business helps to increase in the level of gross income of the producer members. The table No.3:8 shows the change in gross income of the sampled producer members.

TABLE NO.3:8.

The table showing the gross income of producer members.

Sr. No.	S O U R C E.	Before Membership.		After Membership.		Increase in Income	% to the Total Income
		Production (Tonnes)	Income Rs. : (,000)	Production (Tonnes)	Income Rs. : (,000)		
1.	Sugarcane.	10400	3151.2	16400	5854.8	2703.6	80.21
2.	Other Crops.	81	300.0	175	700.0	400.0	11.86
3.	Subsidiary Business.	--	58.0	--	160.0	102.0	3.03
4.	Hire Charges through Agricultural implements.	--	03.0	--	07.0	04.0	0.12
5.	Hire charges through Machinery.	--	07.0	--	37.0	30.0	0.89
6.	Hire charges through Lift Irrigation scheme.	--	11.0	--	35.0	24.0	0.72
7.	Salary from services.	--	80.0	--	180.0	100.0	2.97
8.	Others.	--	08.0	--	15.0	7.0	0.20
Total:-		10481	3618.2	16575	6958.8	3370.6	100

The table No.3:8 indicates that before the membership the gross income of sampled producer members was Rs. 3618.2 thousand. After the membership it was Rs. 6958.8 thousand it indicates that the gross income from different sources is increased by Rs. 3370 thousand. The income from the all sources is increased. But there is tremendous increase in income from sugarcane produce. The percentage of this is 80.21% to the total increase in gross income.

It shows that most of the farmers increased the sugar cane produce which helps to increase in their level of gross income.

The income from other crops is increased from Rs. 300 thousand to Rs. 700 thousand. The percentage of this to the total increased income is 11.86%. The income from the subsidiary business is increased from Rs. 58 thousand to Rs. 160 thousand. The percentage of this source to total increased gross income is 3.03%. The income from service source was Rs. 80 thousand before the membership. After the membership the income level increased by Rs. 100 thousand and percentage of this to the total increased income level is 2.97%. The income from other sources like deposits, dividends, and other business was Rs. 8 thousand which is increased by 0.20% after the membership.

Because of the membership of the factory, the producer members' income is increased through all sources of income.



The increase in income of the producer members impacts on the number of agricultural implements owned by them. The table No. 3:9 shows the increasing number of agricultural with different size group.

TABLE NO.3:9

Change in number of agricultural implements:

Implement.	Before Membership.					:After Membership.					:VO
	No. of Members.					:No. of Members.					:LU
	S I Z E G R O U P S.					:TOTAL:	Group:	Group:	Group:	Group:	TO-:ME
	Group:	Group:	Group:	Group:	Group:	:I.	:II.	:III.	:IV.	:TAL:	CHA
	I.	:II.	:III.	:IV.	:	:	:	:	:	:	:NGE.
1.Plough.	14	16	10	10	50	40	20	14	10	84	+34
2.Bullock Carts.	12	15	15	10	52	46	22	10	10	88	+36
3.Small Plough.	08	10	10	10	38	18	20	14	10	62	+24
4.Oil Engines.	12	08	10	12	42	--	--	04	07	11	-31
5.Electric Motor.	11	04	05	15	35	23	18	15	20	76	+ 41
6.Tractor.	--	--	01	02	03	02	04	05	10	21	+18
7.Power Teelar.	--	--	--	--	--	01	01	02	--	04	+04
8.Truck.	--	--	--	--	--	--	02	--	06	08	+08

The Table No.3:9, indicates that in case plough, only 50 sampled producer members have plough before the membership. There were 52 bullock carts, 38 small plough, 42 oil engines, 35 electric motors and 3 tractors, before the

membership of the factory.

After the membership of the factory, 84 members have their own plough, 88 members have own bullockcart, 62 members have their own small plough, 11 members have their own oil engines, 76 members have electric motor, 21 members have tractors, 4 members have power teelars and 8 members have their own truck.

The number of oil engines owned by members is decreased from 42 to 11, the main reason for this is, change in irrigation facilities provided by the factory. The number of sampled producer members became member of these irrigation schemes. So the number of oil engines decreased. Secondly, the electric motors are used by members as alternative to oil engines.

The producer members have purchased tractors and power teelars only after the membership, which indicates there is increase in income and ability to borrow the loans. Considering the size groups the number of ploughs, bullock carts, small ploughs and electric motors has increased among almost size groups. But the number of trucks is increased only among the group No.IV i.e. large farmers.

3:2. IMPACT ON SAVING AND INVESTMENT:

The saving is important factor for initial investment, the economic development depends on the size of saving and investment. After the membership, the producer members' savings and investment is found to be increased, which is to be shown in the Table No. 3:10.

TABLE NO.3:10

Table showing the change in saving & investment.

Sr. No.	Particular of Assets:	Before : Member-ship. : (Rs,000)	:After :Member-ship. : (Rs,000)	:Net Incr- :ease or :Decrease : (Rs,000)	:% to the Net :Increase.
1.	Farm Equipments.	200	800	+600	66.15
2.	Live Stock.	800	1000	+200	22.05
3.	Shares.	100	120	+20	02.20
4.	Debentures.	001	003	+2	00.22
5.	Individual Postal Saving Certificates.	013	020	+7	00.78
6.	Other Deposits with Banking Units.	015	080	+65	07.16
7.	Others.	010	023	+13	01.44
TOTAL:		1139	2046	907	100

Note:- Calculations are made at current prices.

The table No. 3:10 indicates that before the membership, the total amount of saving and investment was Rs. 1139 thousand. After the membership this amount is changed as Rs. 2046 thousand. The net increase in this amount is Rs. 907 thousand.

It is observed that most of the members invested their income in farm equipments rather than other items. The investment in farm equipment is increased by 66.15% to the total increased amount.

The investment in live stock is increased by 22.05 to the total increased amount after the membership. The producer members have purchased milch animals, poultry birds and bullocks. The Krishna Factory has provided guarantee to the loans for this purpose. The investment in shares and debenturs is increased with smaller rate i.e. 2.2% and 0.22% respectively.

In case of saving certificates and deposits in banking units, the percentage after membership has increased by 0.78% and 7.16% to the total increased amount respectively. There is greater response for deposits than individual saving certificates. The main reason for this is the habit to save and ability to save has increased, due to the raise in income. The members are habituated to banking transactions and they have deposited their money particularly in the Krishna Co-Operative Bank Ltd. Because, the members are

receiving their sugarcane payment through this bank. 13 respondents have replied that Krishna Co-operative Bank is more convenient than the other banks for depositing their deposits. After the membership the investment in the other items is increased by 1.44%.

3.3. IMPACT ON EMPLOYMENT.

The co-operative sugar factories in Maharashtra are the main source of employment in rural area. The Krishna Sahakari Sakhar Karkhana has provided larger employment opportunity to the people in area of operation. "The independent research studies have revealed that the sugar co-operatives generate additional employment per acre of cultivation of at least 33 mandays per year, even when it is compared with the most labour intensive alternatives paddy, wheat, in Gujarat." Krishna Factory with daily crushing capacity of 5000 tonnes requires nearly 30,000 acres of sugar of sugar cane. Thus, additional employment generated by the factory is at least 9,90,000 mandays per year. The factory has employed 5 to 6 thousand workers for harvesting and transporting of sugarcane in 1985-86. Generally, these workers are brought from the districts like Solapur, Bhir, Ahmednagar and Satara. The impact of sugar factory in creating additional employment is larger in the farm sector than in the industrial sector.

In the industrial, trade and commerce sectors it provides employment opportunities indirectly. It is found that number of persons were engaged in dairy farm and poultry farm. The national sugar institute has prescribed 626 persons

as appropriate employment for a unit of 1250 to 1500 tonnes capacity run on semi-electric pattern and with double sulphatation process based on the modern sugar manufacturing machinery. Considering this ratio, the Krishna Factory has provided job opportunities to 2,356 workers out of these 1411 workers were permanent, 427 workers were seasonal and 488 workers were temporary in 1986. Besides this the factory has provided seasonal employment for truck owners, tractor owners and bullockcart owners. Most of them are educated unemployed persons. It has provided job opportunity to the unemployed persons to its sister concerns.

Out of the total sampled families, 37 persons were working in factory, 28 families were engaged in dairy and poultry farming, 18 persons were engaged in trade and commerce activities.

A) TRADE & COMMERCE ACTIVITIES:

The trade and commerce activities increased the employment opportunities indirectly, after the membership, is shown in the table No. 3:11.

TABLE NO.3:11.

Trade and commerce activities:

Sr.No.:Type of Activity.		: Before Membership.	:After Membership.

1.	Flour Mill.	1	3
2.	Cycle Repairs.	1	3
3.	Hotel.	-	1
4.	Agro-Service Centre.	-	2
5.	Provisional Stores.	-	1
6.	Sweet Mart.	1	2
7.	Fruits and Vegetable Stall.	1	2
8.	Chilli Pounding Service, Centre.	1	2
9.	Cloth Stores.	-	1
10.	Medical Stores.	-	1
TOTAL:-		5	18

Before the membership only 5 members were engaged in the above mentioned activities of trade and commerce, in their villages. After the membership, the number of producer members is increased up to 18. The activities like hotel, agro-service centre, provisional stores, cloth stores and medical stores are increased strictly after the membership of factory.

B) POSITION OF LOANS:

The trade and commerce activities, employment opportunities and investment in agricultural sector is increased because of the guarantee of loans given by the factory to it's producer members. The table No. 3:12 indicates the position of loans borrowed by the numbers of producer members, from different sources.

TABLE 3:12.

Table showing the position of loans:

Source of Loan.	Before Membership.					After Membership.					Volume		
	Rs.1000:Rs.5001	Rs.5001:Rs.10000	TOTAL	Rs.1000:Rs.5001	Rs.5001:Rs.10000	TOTAL	Rs.1000:Rs.5001	Rs.5001:Rs.10000	TOTAL	Rs.1000:Rs.5001	Rs.5001:Rs.10000	TOTAL	: Changed
	To 5000:To10000	& Above.	Memb- :ers.	To 5000:To10000	& Above.	Memb- :ers.	To 5000:To10000	& Above.	Memb- :ers.	To 5000:To10000	& Above.	Memb- :ers.	: + or -
1. Village Credit Co-Op. Society.	45	20	02	67	70	10	12	92	+25				
2. Land Development Bank.	--	02	04	06	05	07	04	16	+10				
3. Krishna Co-Op. Bank.	--	--	--	--	12	05	03	20	+20				
4. Nationalised Banks.	10	15	02	27	12	16	03	31	+04				
5. Money lenders.	14	--	--	14	03	01	--	04	-10				
6. Others.	18	02	--	20	05	01	--	06	-14				

The Table No. 3:12 indicates that there were 67 producer members borrowing loans from village credit co-operative societies, after the membership the number is increased by 25 members i.e. after membership of the factory 92 producer members are taking loans from the village credit societies. After the membership producer members are largely taking loans for fertilizers, seeds, catel feeds, water charges and agricultural implements.

There are 20 members who borrowed loans from Krishna Co-operative Bank out of which 12 members taken loans of Rs. 1,000 to Rs. 5,000, 5 members taken loans of Rs. 5,001 to Rs. 10,000 and 3 members have taken loans of Rs. more than 10,000, for different purposes.

The tendency of borrowing loans from money lenders and other sources like relatives, friends and non-institutional sources is decreased. Because, after the membership the producer members automatically became the member of Krishna Co-operative Bank, which improved their banking knowledge and banking habits.

In this way, the loans from different sources helped the producer members to increase their agricultural and trade & commerce activities which result in increasing the employment opportunities.

3:4. IMPACT ON CONSUMPTION PATTERN:

After the membership of producer members in the Krishna Sahakari Sakhar Karkhana Ltd., the consumption pattern is changed. The change in consumption pattern is given in the table No. 3:13.

TABLE NO. 3:13.

Groupwise family expenditure per family:
(Rs. in thousand)

Item.	Before Membership.					After Membership.					Volu- me Ch- anged. : + or -
	Group: I.	Group: II.	Group: III.	Group: IV.	TOTAL: EXPDR.	Group: I.	Group: II.	Group: III.	Group: IV.	TOTAL: EXPDR.	
1. Food.	2.7	3.3	4.0	4.5	15.0	4.0	4.7	5.0	5.2	18.9	+3.9
2. Cloth- ing.	0.6	0.9	1.5	2.5	5.5	1.0	1.7	2.1	3.0	7.8	+2.3
3. Medical	0.8	0.3	0.3	0.5	1.9	0.2	0.3	0.5	0.7	1.7	-0.2
4. Education.	0.2	0.3	0.4	0.5	1.4	0.2	0.4	0.6	0.9	2.1	+0.7
5. Housi- ng.	0.1	0.2	0.4	0.6	1.3	0.2	0.5	0.8	0.8	2.3	+1.0
6. Trave- lling and Others.	0.3	0.3	0.4	0.6	1.6	0.4	0.5	0.7	1.0	2.6	+1.0
TOTAL-	4.7	5.8	7.0	9.2	26.7	6.0	8.1	9.7	11.6	35.4	+8.7
%	(17.6)	(21.8)	(26.2)	(34.4)	(100)	(16.94)	(22.88)	(27.42)	(32.76)	(100)	

Note:- Data in parenthesis indicates the percentage to Horizontal.

The Table No3.13 indicates that before the membership of the factory the total consumption expenditure was Rs.26.7 thousand in the year 1980-81. Whereas it is increased after the membership upto Rs. 35.4 thousand during the year1985-86.

Before the membership the total consumption expenditure on food, clothing, housing, medical, education and travelling was Rs.15.0,5.5,1.3,1.9,1.4,1.6 respectively, while it changed in the year 1985-86 as Rs.18.9,7.8,2.3,1.7,2.1, and 2.6 thousand respectively.

The consumption expenditure per family, before membership i.e. in the year 1980-81 of group I i.e. marginal farmers group was Rs.4.7 thousand, where as the expenditure of group II,III, and IV was Rs. 5.8,7.0,and 9.2 thousand respectively during the same year.

After the membership, in the year 1985-86, these expenditures are increased as Rs.6.0,8.1,9.7, and 11.6 thousand of the group I,II,III and IV respectively.No doubt the prices of commodities are increased but it is also important that even the price rise, the income also rised during this period, which increased the consumption expenditure of the producer members. But the rate of this increasement in consumption expenditure is smaller.

The expenditure on diff-erent items are presented as follows:

a) FOOD CONSUMPTION:- The consumption of Jowar, Wheat and rice is common in all families. The expenditure on protective food like Milk and milk products, edible oils, spices, vegetables, meat, fish and eggs is increased, which indicates that there is rise in consumption expenditure. According to size group of holding out of the total expenditure on food consumption, the consumption of edible food and protective food increased only among large farmers. In case of small and marginal farmers these items are consumed with the less quantity. The total consumption expenditure on food was Rs. 15 thousand which is increased by Rs. 3.9 thousand after the membership.

b) Clothing:- The expenditure on clothing is increased by Rs. 2.3 thousand during the study period. It is observed that producer members preferring to use terecotte, tereleene and woollen cloths.

c) Medical:- In case of medical expenses the member farmers expenditure is less than the expenditure on medical before their membership. Before membership the expenditure on this item it was Rs. 1.9 thousand and after the membership it reduced to Rs. 1.7. The main reason of this decrease is larger sampled producer members are taking advantage of the Krishna Hospital, which is concerned to the factory. The hospital is providing certain free medical facilities to the producer members.

d) Education:- In case of education the total expenditure was Rs. 1.4 thousand, before the membership but this expenditure is increased by 0.7 thousand after the membership. It is found that the producer members are understanding the importance of education and now they are sending their children at school regularly.

e) Travelling & Others:- Few years ago , these members were hardly going to other villages but now in the days they are visiting factory and nearer cities frequently.

f) POSITION OF HOUSING:- The expenditure shown in the table is of maintainance of house. It was 1.3 thousand in the year 1980-81 which raised to Rs. 2.3 thousand in the year 1985-86. The position of housing is compared in the Table No. 3:14.

TABLE NO.3:14

Housing Position:

Sr.No.	Type of House.	Before Membership.	After Membership.	Volume Changed.(+or-)
1.	Simple House.	65	37	-28
2.	Simple with Cement House.	31	57	+26
3.	Load Bearing House.	03	05	+02
4.	R.C.C. House.	01	01	--

The Table No. 3:14 indicates that there is change in housing position of the producer members. Before the membership, there were 65 simple houses. After the membership this number is decreased to 28 houses. It shows that the producers' housing pattern is changed.

The number of simple houses with cement is increased by 26, the number of load bearing houses is increased by 2 houses. The main reason for this change in housing pattern is the income of producer member has increased after the membership and their attitudes towards the life are changed.

g) USE OF COMFORTS AND LUXURIES:

The use of comfortable goods and luxurious goods is increased after the membership. The following table No. 3:15 shows the change in use of the comfortable goods and luxurious goods.

TABLE NO.3:15

The change in-
Use of comforts and luxuries:

Sr.No.	Item.	Before Membership.	After Membership.
1.	Bicycle.	32	77
2.	Moped.	14	34
3.	Motorcycle.	10	16
4.	Four Wheeler.	01	02
5.	Transister.	62	67
6.	Tape Recorder.	25	46
7.	T.V.	--	03
8.	Gas.	15	51

The above table indicates that there were 14 mopeds, 10 motorcycles, 25 tape recorders and 15 gas connections before the membership. During the study period, the number of these items is changed as 34,16,46 and 51 respectively.

It indicates that there is increase in use of comfortable and luxurious goods, which indicates the improvement in standard of living, of the producer members.

The development of agriculture in area of operation not only improves the economy of the producer members but also brings about significant changes in the cultural and social attitudes. The characteristic features of cultural and

social changes are reflected in increasing levels of education, improvement in health and hygienic conditions, development of agencies imparting knowledge of the producer members.

The educational status of the producer members of the selected families is observed during visit period. It is found that there were 20 graduates, 3 post graduates and 1 student was studying in medical college.

Because of the development in trade and commerce the number of members engaged in these activities is increased. The percentage of wage earners among member families decreased. Some unemployed young-stars are agents of goods like cattle feed, milk products etc. which improves their income and social status.