

• CHAPTER THIRD •

••• IMPACT STUDY •••

CHAPTER-3.:- IMPACT STUDY :-

The regional disparity needs a variety of projects (or schemes) for the development of a region. No single scheme of national scale will solve regional problems of a particular rural area.

The co-operative sugar factories are playing a vital role in bringing all round regional development, where they are established. They know their regional problems and they also know how to solve those problems. Now-a-days co-operative sugar factories are providing various facilities to their operational area. The schemes implemented by these co-operatives are more effective and efficient than the Govt. schemes. Moreover, the co-operative sugar factories have played a major role in rationalising the pattern of income distribution in rural area. These sugar factories have converted the farmers into real income generating units and assumed responsibility for distributing that income. The profit earnings has been replaced by capital formation for other allied industries in rural regions. The socio-economic position of share holders has improved a lot. Farmers are motivated in commercial enterprises for earning greater profits. The farmers have benefited in terms of service, guidance, modern cultural practices, high yielding varieties seeds by the co-operative sugar factories. The infra-structural development which includes dairy, poultry, irrigation, distribution of consumer's

articles on co-operative basis as a part of the services imparted by the sugar factories themselves.

The socio-economic development activities that the sugar factories in Maharashtra under took was studied in March 1981 by a committee headed by B. Venkatappiah to assess the socio-economic impact of the co-operative sugar factories.¹

The committee observed 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 sugar has now touched the level of 30 lakhs million tonnes during 1981-82 season.²

"In case of participants of the co-operative sugar factories the member cultivators increased by 188 % and savings increased by 263 % by the end of March 1981."³

"The total capacity is likely to increase upto 1,72,000 TCD during the sixth five year plan on account of new licences and also due to expansion in the installed capacity of the existing factories as approved by the planning department of the State Govt."⁴

The present dissertation discusses the matter of common interest of the sub-region i.e. Shirol Tehsil, where Shri Datta Co-operative Sugar Factory is established and which is working

1. Note on Sugar Industry in Maharashtra Director of Sugar Maharashtra State, January, 1983 p.2.

2 Ibid.

3 Ibid.

4 Ibid.

for the achievement of better farming and better standard of living in the sub-region. It has been implementing many schemes for the development of share holders and other general schemes of the rural development programme through a key to solve all problems of rural life.

The impact study concentrates on the socio-economic evaluation after the establishment of Shri Datta Sugar Factory. The factory is not only a sugar producing unit but today it is considered a centre which carryout growth oriented activities for the sub-region. It is also working for the development of the distitutes of rural area.

The impact study is divided into two parts :- 1) Socio-economic impact on sub-region i.e. Shiroli Tehsil and 2) Socio-economic impact on share holders of the sugar factory. Co-operative Sugar Factories including Datta Factory are stressing more on the development of the sub-regions than on the development of share holders.

3:1) Socio-economic Impact on the Sub-region :

Establishment of Sugar Co-operatives is an economic activity which emphasizes the welfare of the participant members. The welfare activity is defined as a activity which earns maximum social ^{economic} advantage to the public. According to Professor Boulding economics is therefore, primarily interested in commodities and not in man, while welfare economics is interested in economic welfare of the community and not in " Value". The welfare economist ^{uses} the concept of "Welfare" or Utility as a Yard-stick to measure Peoples' well being. In the

words of Melvin Reder, "Welfare economics is the branch of economic science that attempts to establish and apply criteria of propriety to economic policies".⁵ This kind of economic welfare is targeted while establishment of sugar co-operatives and almost all sugar co-operatives are committed to well being of the rural area.

Thus the sugar co-operative at Shiroli is also committed to develop the tehsil. The question, why these sugar factories have growing social consciousness instead of well-being of their shareholders for whom they were primarily set up. ?

3.1) a) Impact on Agriculture:

Shri Datta Co-op. Sugar Factory Ltd., is compelled to encourage and organize with govt. patronage and and public funds for development and improvement of sugar-cane cultivation in particular and agriculture in general. It is obvious that the production of sugar is directly dependent on the quality of sugar-cane . As every sugar factory has to give a top priority to agriculture, Shri Datta Co-op. Sugar Factory is no exception. Quality varieties of new sugar-cane seedlings like Co 7219 and Co 7125, Chemical fertilizers under pilot scheme (1976-77 to 1979-80), modern agricultural implements like tractors, bulldozers are provided to the operational area. So far 34,83,700 number of seeds have been distributed to the sugar-cane cultivator members in

the area in 1981. The pilot scheme facility had been provided upto 1979-80 season. Through this scheme factory provided its own fertilizer items like compost fertilizers prepared from press mud, boiler ash, dung, fodder wastes and calcium etc. during the period of shortage of fertilizers and availability of chemical fertilizers on time. Though the pilot scheme is abolished the fertilizer items are sold at Rs.7 per tonne. Even today after the closing of the pilot scheme the factory uses modern techniques developed by Padehaon Sugar-cane Research Centre to prepare such kind of compost fertilizers.

The whole cropping pattern and nature of agriculture has undergone a complete change since the establishment of sugar Mill in the Tehsil. (see Table No.3:1) Before the inception of sugar factory the main crops of the tehsil were Jawar, Tur, Ground-nut and other pulses and cereals etc. and the main cash-crops were tobacco and cotton. But while marketing such cash crops the farmers were exploited in a severe way. After the establishment of sugar mill such inhuman exploitation has come to end.

After electrification, introduction of lift irrigation and the establishment of sugar factory in this tehsil, the whole cropping pattern has completely changed (see table 3.1) Today cultivation sugar-cane is the main enterprise in this sub-region. In the year 1969-70, the area under sugar-cane was 4239 hectares (8.61 %) while in 1980-81 the area under cultivation increased to 12,484 hectares (31 %). And area under cereals and pulses decreased from 16,135 hectares (32.79 %) and 3550 hectares (7.21 %) to 6014 hectares

Table No. 3.1.

CHANGE IN CROPPING PATTERN

Sr. No.	Crops	1969-70		1980-81		Volume of change in + increase - decrease
		Area in Hectares	% of gross cropped area	Area in Hectares	% of gross cropped area	
1.	Rice	2876	5.94	2516	6.24	+ .40
2.	Wheat	5.31	1.07	993	2.46	+1. 39
3.	Jawar	114.89	23.35	5611	13.93	- 9.42
4.	Sugar-cane	4239	8.61	12484	31.00	+ 22.39
5.	Ground-nut	5075	10.31	5315	13.19	+ 2.88
6.	Other oilseeds	121	.24	N.A.	--	--
7.	Fruits & Vegg	228	.46	960	2.13	+ 1.67
8.	Chillies	641	1.30	1131	2.80	+ 1.50
9.	Tobacco	2170	4.41	2761	6.85	+ 2.44
10.	Sodder	1964	3.97	1903	4.72	+ .75
11.	Maize	N.A.	--	240	.59	+ .59
12.	Cotton	174	.35	--	--	--
13.	Cereals	16135	32.79	6014	14.93	- 17.86
14.	Pulses	3550	7.21	344	.85	- 6.36
TOTAL		49193	100%	40272	100%	-

SOURCE: Panchayat Samiti Shiroli Office -

Census Report (Kolhapur District) - 1971.

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(14.93 %) and 344 hectares (.85 %) respectively in the same period. That is the cultivation of sugar-cane increased to 22.39% and the cultivation of cereals and pulses has decreased to 17.66% and 6.36% respectively in the same years. The cultivation of Jawar has reduced from 23.35 % to 13.93% during the period under consideration. Now-a-days HYV seeds like (HS-1, HS-5 etc. have completely replaced the old teaty 'Kar' variety. This ^{is} unfortunate as old farmers want to cultivate 'Kar' jawar even today but it cannot be grown any more due to diseases and very small yield. The area of cultivation of crops like Chillies, Tobacco, Ground-nut, Wheat, Rice etc. has increased. Thus the tendency of farmers of this tehsil is to go only for cash-crops. The sugar-cane is high capital input crop which requires induced investments like use of tractors, land levelling, fertilizers, pesticides, use of modern implements etc. while chilly, ground-nut and tobacco are relatively cheaper requiring comparatively low capital input. The increase in the cultivation of wheat and rice is negligible and does not demonstrate any trend as such.

The taluka covered nearly 42500 hectares of cultivable area, out of which nearly 7300 hectares of area was under sugar-cane in 1974-75 season. From the table 3:1 it shows that the area under cultivation is gradually decreasing from 49793 hectares in 1969-70 to 42500 hectares in 1974-75 and 40272 hectares in 1980-81. This is because the area under settlement widening of roads, new roads, trees, settlements in farm units, water logging area, irrigation channels has increased in the

respective years.

Out of the sugar cultivated in Shirel taluka almost 60% of sugar-cane is supplied, to Shri Datta Sugar Factory and another 40% sugar is sent to other factories in the region.

Thus the co-operative sugar factories have brought about a drastic change in the cropping pattern in their area of operation, and the shift is in favour of cultivation of sugar-cane throughout Maharashtra.

The technique of lift irrigation was initially introduced at the end of 1950s in the tehsil. After 1960 such lift irrigations ^{were} managed and organised on co-operative basis. There were few lift irrigation schemes, when the sugar-factory was established in the tehsil. Today there are 29 lift irrigation schemes in the tehsil area. Besides there are number of private pump-sets set up on wells and rivers. This number is increasing continually, but not at the initial rate of growth. The barrage near Rajapur Village is built to store water for irrigation in all seasons. Most of the small and marginal farmers have either participated in partnership or co-operative lift irrigation schemes. Now-a-days the conventional methods of irrigation are becoming expensive due to rise in the prices of cement, pump-sets and pipes etc. After the establishment of irrigation schemes it was natural that the farmers went in for sugar-cane.

Agriculture which is the backbone of the economy of rural area has now become a capital oriented enterprise. In the past, this backbone was weak. At present after extensive

irrigation and establishment of a sugar factory, agriculture has become a highly commercial activity in shiroi tehsil. The area in the northern part of the tehsil where no irrigation is available, this prosperity is not visible.

The irrigation by well is decreasing in the taluka. There were 2375 wells in 1974-75, out of which 2011 well are in use upto 1978-79. Because of lift irrigation, wells did not remain a necessity.

The total area under major, minor irrigation scheme has increased from 57.50 % in 1970-71 to 60.57 in 1976-77 and the number of major, minor schemes has increased from 25,589 to 27242 during the same period.

The total area under irrigation also increased from 14000 hectares to 21,320 hectares from 1970-71 to 1977-78 respectively.

The factory is managing one irrigation scheme for SC & ST people of Rajapur village, other irrigation schemes are encouraged by providing technical know-how, managerial help, finance guarantee etc.

The land use pattern has also undergone a change after the establishment of the sugar factory in shiroi. Most of the unused land pieces are brought under cultivation after the installation of irrigation.

The statistics from Revenue Department shows that, the gross cropped area has decreased by 0.34 % (see table 3:1). The total land holding is decreased by 1.72%. This is because

the widening of roads, new roads, area under trees, area under settlement, etc. has increased. The cultivable waste area increased to only 0.39 % in 1980-81, due to water logging. Only 155 hectares of land is newly brought under cultivation (see table 3.2) The total number of land holders has increased from 23,695 in 1970-71 to 30000 in 1980-81.

Thus the land use and cropping pattern has undergone a change after the establishment of irrigation scheme in this tehsil.

TABLE No.3.2

CHANGE IN LAND USE PATTERN

Sr. No.	Land Use	1969-70		1980-81 *		Volume of change in area
		Area in Hect.	% of gross area	Area in Hect.	% of gross area	
1.	Total geographical Area	59793	-	59793	-	-
2.	Total holding Area	44234	73.96	43204	72.24	-1.7
3.	Total Cropped Area	40533	67.76	40272**	67.34	-.3
4.	Current fallow ..	1304	2.18	950	1.58	-.6
5.	Uncultivated Area	266	.44	190	.31	-.1
6.	Other fallow Area	546	.91	606	1.01	+.11
7.	Cultivable Waste Area	557	.93	792	1.32	+.39
8.	Not available for Cultivation.	955	1.59	800	1.33	-.26
			100 %		100%	

* Approximately.

** It was 35576 Hect. in 1981-82.

Source: Panchayat Samiti, Shirol. 2] Census Report - 1971.

It is also observed that, after the establishment of sugar factory in the tehsil the use of agricultural implements also under gone a change (see table 3.3) for example the use of both iron and wooden ploughs has increased, the use iron plough has certain limitations. It cannot be used in a sown field, only a wooden plough helps at such places. Thus the use of wooden plough continues. And the number of sugar cane crushers worked by power simultaneously decreasing, while sugar-cane crushers worked by bullocks have vanished. After the establishment of sugar factory in 1972 the No. of sugar-cane crushers immediately declined from 78 in 1966 to 46 in 1972. The use of oil engines is declining steadily, because of the rise in the prices of oil and easy availability of electricity at a cheaper rate. Electric pump sets have increased from 553 in 1966 to 2814 in 1979. The number of tractors has also increased at a greater pace. Farmers purchased tractors for the convenient transport of sugar-cane to factory during its season. During the season of cultivation the tractors are used for ploughing, levelling etc. Thus the tehsil shows growth and development in respect of the use of agricultural implements.

The factory has provided soil testing facility to the number share holders. The collected soil samples are sent to Kolhapur district soil testing laboratory and farmers whose soil is tested are given adequate guidance on the basis of the report. Nearly 1976 samples are tested in this way upto 1981-82. The table 3.4 will show the number of samples tested by District Laboratory for Shri Datta Sugar Factory. Before 1977-78, the

Table No. 3.3:

USE OF AGRICULTURAL IMPLEMENTS

Sr. No.	Year	No. of ploughs		No. of sugarcane crushers		Oil eng-ines with pumps for irri-ga-tion pur-poses	Elec. pump sets for irri-ga-tion pur-poses	Trac-tor
		Wooden	Iron	worked by power	worked by bullocks			
1	1966	606	1980	78	17	842	553	36
2	1972	926	2850	46	9	710	1802	87
3.	1978	1138	2467	45	—	347	2814	186

SOURCE: Vocational survey of Kolhapur District 1980. Page No. 78.

Table No. 3.4

SOIL TESTING SAMPLES

Sr.No.	Years	No. of Samples
1	1977-78	639
2	1978-79	376
3	1979-80	450
4	1980-81	151
5	1981-82	260
	TOTAL	1976

Source : Annual Report Shri Datta Co.op. Sugar Factory, Ltd.,
Shirol.

factory has not taken initiative in soil testing efforts.

The factory has provided 62 gober gas plants to 27 villages in its operational area at the end of June 1982. It assist Rs.1000 as subsitty for such beneficiaries.

The average use of fertilizers increased from 5 Kg. in 1970 to 120 Kg. per household. The old methods are being eroded by different modern techniques. There is a remarkable impact on the use of modern high yielding varieties both in food grains and such-crops. The summer and winter crops of short period are also taken with after modern techniques.

The average yield of sugar ^{come} has increased steadily upto 1978-79. After words the per-acre yield shows a considerable

decline due to shortage of water and absence of crop-rotation. The table 3.5 will illustrate the growing yield of sugar-cane per acre immediately after the establishment of sugar factory and at present decreasing yield of sugar-cane.

Table No.3.5

Yield of sugar-cane (per acre)

Sr.No.	Years	Yield in Tonnes
1	1971-72	25.50
2	1972-73	32.73
3	1973-74	23.43
4	1974-75	28.85
5	1975-76	26.64
6	1976-77	28.15
7	1977-78	33.42
8	1978-79	32.54
9	1979-80	26.40
10	1980-81	26.00

The per-acre average yield increased from 25.50 tonnes in 1971-72 to 33.42 tonnes in 1977-78, and the average yield decreased to 26. tonnes in 1980-81.

Nearly 69.75% of population in the tehsil belongs to the category of small and marginal farmers. Among them 4225 farmers have small holdings between 2 acres and 5 acres and

20,252 farmers have very small holding (upto 2 acres) and 35/7 are agricultural labourers. These people hold only 29.09 % land in this taluka.

As a habit of sugar-cane cultivation, there is a change in economic and social set up e.g. increase in recreational facilities utensils, use of vehicles, radios, furniture etc. has taken place in the houses of small farmers. Besides almost all small farmers can now offered to spare their children for education instead of using them as farm hands. This has resulted in increase in the literacy rate of the tehsil. Which has increased from 42% in 1960 to 65 % in 1981.

A credit guarantee upto Rs.6000/- per-acre is given by a factory to Kolhapur District Co-operative Bank and other commercial Banks under crop loan system.

A visits to sugar-cane research centres and demonstration plots were arranged by Agricultural Department of the factory.

3.1 b] Impact of Economic Development of Area :

In Maharashtra the Co-operative sugar factories have undertaken a scheme of introducing and developing subsidiary industries such as dairy, poultry in their areas, with the assistance of Bharatiya Agro-Industries Foundation, many factories have organised centres for extending assistance and technical advice for cattle breeding and veterinary aid, Shri Datta Sugar- Factory is not averse to this trend in Maharashtra. Though the factory is only making a beginning in this regard, the schemes and programmes which are followed by other factories

are being followed according to its financial viability and feasibility.

The factory provides seasonal employment to the rural masses of the sub-region. During its season when the local labour is insufficient, additional labour force is acquired from other districts in Maharashtra like, Solapur, Bejal, Osmanabad, Bid etc.

The important programmes having Socio-economic effect on the sub-region are:

1) Mobilization of Savings

* A note on Sugar Factories in Maharashtra * published by Director of Sugar noted that, 'In Maharashtra, the saving of participant member of co-operative sugar factories has increased by 263 % in 1981. * As for Shri Datta Factory is concerned the small saving (one rupee per tonne of sugar supplied by cane growers) has increased from Rs.2.31 lakh in 1979-80 to 3.21 lakh in 1980-81. And the non-refundable deposit increased from Rs.10.69 ^{lakh} to Rs.19.45 lakhs in the same years. And other deposits increased from Rs.72,740 to 24.67 lakhs in same period. The factory also collects development fund from producer member and non-member of the factory, which is Rs.101.70 lakhs at the end of 1982. The rate of deduction for this fund is 7.50 per tonne of sugar-cane, It was Rs.5 per tonne before 1980-81. Additional Development Deposit Fund is also collected for the period of 10 years from non-members. These deposits are utilised to enable the factory to gradually redeem the share capital contributed by state Govt. and to repay

the loans from central financial institutions.

Besides the factory received GIC claims worth Rs.36,540.50 in 1980-81 through the efforts of Maharashtra Sakhar Sangh.

2) Employment Generation :

"Independent research studies have revealed that the sugar-cane crop generates additional employment per acre of cultivation of at least 33 man-days per-year, even when it is compared with the most labour intensive alternative, paddy wheat in Gujarat"⁶ Shri Datta Sugar Factory with a crushing capacity of 2000 tonnes daily requires roughly 11200 acres of sugar-cane. Thus additional employment generated by the factory is at least 3,69,600 man-days per-year. The total labourers employed in field operations for harvesting and transport of cane to factory was between 1700-1800 in 1980-81, which was brought from Marathwada region. Moreover, this situation is similar in all sugar factories in this state. The impact of sugar factory in creating additional employment is greater in the farming sector than in the non-farming sector. This result is providing employment to hundreds of unemployed and under employed which has prevented migration of farm hand towards urban centres. The sugar factory produces in directly employment in the allied sectors also.

The employment generation in the factory itself is not so significant as it is in the farm. The National Sugar Institute has prescribed 626 persons as appropriate employment for a unit

6 Socio-economic impact of sugar-co-operatives -

- V. Malyadri.

of 1250 to 1500 tonnes capacity run on semi-electric pattern and with double sulphitation process based on the modern sugar manufacturing machinery.⁷ Taking this ratio Shri Datta Sugar factory would require to employ between 832 to 850 land approximately. But actually factory employs 974 workers inclusive of both technical and non-technical cadres. In Maharashtra the number of persons employed per factory with a capacity of 1250 tonnes ranged between 747 and 1039.^{8&9}

Besides Shri Datta Sugar Factory has provided seasonal employment for several truck owners, tractor owners. Most of whom are educated unemployed persons.

The factory is about to create employment through by - products like mini-paper plant of 20 TPD, a liquor and alcoholic products plant etc. It also helps to employ many unemployed persons in various kinds of trades etc. indirectly.

Thus factory has provided employment opportunities directly and indirectly in the sub-region and is helping to solve the problem of unemployment in the sub-region.

7. Ibid.

8. Ibid.

9. The lowest figure in 1965-66 was 610 (for 1250 TCO) in Gujarat and highest figure 1203 was in Uttar Pradesh, while all India average per factory stood at 1009 during the same year - V. Malyadri.

3) Area Development :

Efforts have been made by the sugar factory to build approach roads to the factory in its area. These approach roads are being built by other sugar factories in Maharashtra also. This is in the interest of sugar factories as transportation of cane from field to the factory becomes economical. This kind of road building is impossible for the Government.

The area development activities were started in 1974-75. Nearly 44 Km. of different roads were repaired and prepared upto 1978-79 (see table 3.8) .After words the scheme of road building was stopped; because of the sugar federation's inability to grant funds for such purposes. In 1981-82 the Federation again has started granting the funds for road development and has granted Rs.5.75 lakhs in the same year, and for the same purpose. But the factory had spent Rs.6.9 lakhs for building and construction of 9 Km. of surfaced roads and 25 Km. of other roads in 1981-82 (see table 3.6) Total expenditure on roads from 1974-75 is about Rs.17.25 lakhs at the end of 1982 (see table 3.7) .

In 1980-81 the factory started granting funds for various schemes of area development. The table No.3.8 will clarify the development activities of the factory in 1980-81 and 1981-82.

Though If the amount is small, it is the beginning of area development. However total expenditure on different activities of area development stands at Rs.4.52 lakhs within the period of two years (see table No.3.8) It is found that the greatest stress is given to educational aids and industry. The table 3.8 will demonstrate the area development fund is not used for adequate and

Table No. 3.6ROAD DEVELOPMENT

Years	Details of Roads	K.M. (Rough)
1974-75	Aurwad - Subnai	4
	Shirol - Agar	2
	Shirol - Dharangutti	3
	Old Kolhapur Road	5
	Nandani - Shirdhon	5
	Bastwad - Kurundwad	3
	Chinchwad - Aurjunwad	2
	Takali - Rajapur	4
	Shirdwad - Magdum Pandi	3
	Rajapur - Rajapurwadi	3
	Shirol - Chinchwad	3
	A. lat - Shirdhon	3
	Takawade - Jambhali	4
1975-76	Nandani - Shirdhon	5
	Chinchwad - Aurjunwad	2.5
	Takawade - Jambhali	3
	Ikj. - Chandur	0.25
1976-77	Nandani - Shirdhon	5 surfaced)
	Chinchwad - Aurjunwad	4 ..
	Shirol - Jaysingpur	0.87 ..
	Uigon Pati - Uigon	3.5 ..
1977-78	Old Kolhapur Road	5 ..
	Rajapur-Rajapurwadi	2.5 ..
	Takawade-Jambhali	1.5 ..
	Shirdhon - Terwad(dam)	1.00 ..
	Subnai - Lalbhadr	1.5 ..
	Shirdwad -Magdum pandi	1.33 ..
1978-79	Shirol - Agar Bhag	2.378 ..
	Takawade - Jambhali	1.5 ..
	Aw corner -TKI pati	3.124 ..
	Takali - Dagwad	3.124 ..

Table No.3.6 (Contd....ROAD DEVELOPMENT (Contd....

Years	Details of Roads	K.M.(Tar)
1979-80	No Grant	
1980-81	No Grant	
1981-82	Gov. Office-Height Kata	1.9
	Old Kolhapur Road	5
	Factory Road	.87

SOURCE : Factory Office.



Table No. 3.7EXPENDITURE ON ROADS DEVELOPMENT

Sr.No.	Year	Grant-in-Aid	Actual expenditure	Surplus - + OR Deficit - -
1	1974-75	1,72,983	1,65,054	+ 7919
2	1975-76	1,25,593	1,26,071	- 178
3	1976-77	2,20,552	2,20,648	- 96
4	1977-78	2,72,958	2,73,020	- 62
5	1978-79	2,42,000	2,42,525	- 525
6	1979-80	No grant	---	---
7	1980-81	No grant	---	---
8	1981-82	5,74,900	6,97,980	- 1,23,080.

SOURCE : Factory Office.

Table No. 3.8AREA DEVELOPMENT ACTIVITIES :

1980-81	
Particulars	Expenditure
Shiradhone Relief	10,000
Panchayat Samiti, Shiroi	5,001
Medical Association	10,000
Revenue Shavan(Htk.)	5,000
Vyayam Mandal	11,000
Revenue Shavan(SRL)	5,000
Datta College	500
Handicaped Centre(Kop.)	600
Peasant Agitation (Nasik)	15,000
Tobacco .. (Kipani)	15,000
H.S.Mandal, Datta College	1,00,000
N.M.Regional Co.op.Funs	5,000
Samajawadi Prabodhin(ick)	1,100
New English School, Rendal	5,000
Ambabai Temple Hupari	5,000
New English School, P.Kadoli	5,000
Tarun Bharat Mandal	1,000
Primary School, Arjunwad	5,000
Gwashti Yog Pratistan	11,000
Ganeguruji Hospital, Jambli	20,000
Padmraja High School Shiroi	13,500
Janata High School Shiroi	3,500

Table No. 3.8 (Contd...)

: ARSA DEVELOPMENT ACTIVITIES :

1980-81	
Particulars	Expenditure
Deccan Sugar Techq	1,000
Primary School, Eastwad	3,000
Datta educat society, Wadi	5,000
Malikarjun Temple Mankapur	6,000
Siddeswar Temple Harwad	5,000
-do- -do- -do-	1,000
English School Rui	5,000
Tahsildar, Shirol	1,000
Salwadi, Male	3,000
Narade Factory	1,000
Primary school, Aurwad	2,500
Kisan Mandal, Subnai	6,000
Gram Panchayat, Shirol (light)	12,991

Total	3,04,592

1981-82	
Laxmi Gram Vikas Raj.	5,000
Family Planning xpize	4,132
-do- camp	1,175
Texile Asso.	1,00,000
Ganesh Co.op.press	200
Kalleswar Ho. Takawade	5,000

Table No. 3.2 (Contd...)

AREA DEVELOPMENT ACTIVITIES ;

1981-82 (contd...)

Particulars

Expenditure

Shahu Institute Kop.	11,000
Maruti Temple	5,000
Village Panchayat Mangawati	5,000
Library Arjunwad	1,000
Film golden Jubilee, Kolhapur	5,000

TOTAL

1,47,507.

proper purposes. Had this been done, the impact would have been more formidable.

Besides this in 1973-74 the factory started to build its own separate development fund which was Rs.28,600 in 1973-74 and Rs.3.22 lakhs at the end of 1981. This fund is being collected from share holders of the factory from their sugar-cane price at a nominal rate (Rs.2 per tonne in 1981-82) This fund is being utilised for erecting the paper plant mentioned earlier.

The factory is managing a petrol pump on a commercial ground. A non-shareholders of the factory may become a member by contributing a nominal admission charges. Thus the factory gave a service to the sub-region.

Recently it is establishing a co.op.departmental consumers stores on site. This store will help the consumers of the sub-region to purchase their necessities at a fair price.

The co-operative sugar factory has motivated the villages to set up other co-operatives like Dairies also. Today every village has got atleast one dairy society.

6) Industrial Development:

Every sugar factory has a great scope for industrial development. By-products of a sugar-factory if used are sufficient to lower the cost of production of sugar. Baggasse and molasses are two important by-products in the process of sugar production. Majority of sugar factories in Maharashtra do not use such by-products for development of industrial products in their area.

Table No. 3.9

INDUSTRIAL DEVELOPMENT

	<u>Industries</u>	<u>Number</u>
1.	Engineering	25
2.	Agro-based	15
3.	Forest based	1
4.	Chemicals	3
5.	Others	119
		<hr/>
	TOTAL	<u>163</u>

* as on 31.3.1979.

	<u>Artisans</u>	<u>Numbers</u>
1.	Kolhapur chappals	259
2.	Wood Crafts	314
3.	Cane and Bamboo	26
4.	Woolen Weaving	111
		<hr/>
	Total	<u>710</u>
		<hr/>

* Source : Vocational Survey of Kolhapur
District.

As if now Shri Datta Factory is erecting a 20 TPD Mini-paper plant on site and distillery ~~(in process)~~. In ten years only the factory is aiming for a huge industrial development activity in near future by using by-products as raw material (see Appendix ' A & B ')

There is a growing awareness of the fact that maximum utilization of by products of sugar-factory is necessary for further industrial development in rural area. There is a greater scope for Datta Sugar Factory in rural industrialization of the tehsil. There is also a greater subsidiary fields like dairy, poultry etc. The table No.3.9 will show the industrial picture of the Shirol Tehsil.

5) Growth Centres

It is not necessary to stress again the growth oriented activity of a sugar factory, but however, it is working for the welfare of the region and shareholders. The disguised unemployment is decreased from 65% in 1971 to only 15% in 1981-82.

Though the tehsil depends predominantly on agriculture the availability of loans as crop loans, irrigation loans, equipment of machinery loans, land development loans, horticulture and other plantation crop loans, godowns, gebergas plants and allied sectors under agriculture division of the credit policy is available. The tehsil has 10 branches of scheduled banks, 16 co-operative banks at the end of 1977.

Hundred percent electrification of villages is done in the process of all development activities and the pumps

connected were 4188 as on July, 1979.

6) Standard of Living and other Welfare Activities:

It is indeed true that the standard of living in the southern part of the tehsil has increased a lot, since the establishment of the factory. It is found that after its establishment and the adoption of improved techniques in agriculture, annual average per-capita disposable income from agriculture has increased from Rs. 200 in 1960 to Rs. 1500 in 1981. This rise gives a clear picture of impact, but this growth is only a little more than the rate of inflation. It is a fact that no other crop is comparable to sugar-cane in terms of income. The consumption pattern has changed to some extent. The vegetables are purchased from a market or locally available farm units, which are specially reserved for the cultivation of vegetables. A few farmers who have market places near to their places are habituated to the cultivation of vegetables. Profit from such cultivation is much higher than sugar-cane. There was no consumption of rice by farmers in 1960. Now rice has become a necessity of daily meals. They use expensive clothing like tereene, polyester etc. The fashion of clothing is slowly changing in rural area and going on the lines of urban population. The use of chappals is very common. Nearly 98% of population uses chappals of various kind. The farmers only while working in fields do not use chappals. Especially the use of plastic chappals is found greater, the traditional chappals prepared by rural shoemakers under "balutedari" system before 1960, have vanished completely. The use of vehicles is also

increasing day-by-day. The number of Mopeds and Motorcycles has increased from an average 2 in each village before the sugar factory to 25 in each village after the factory at present.

The social development activities like health, education, physical planning of Villages are undertaken only as an effect of co-operative sugar factory and irrigation schemes. The factory has built 147 houses for landless and homeless poor families in its operational area. Number of such families was 1365 in the taluka at the end of 1981.

There is also a change in the settlement of villages. Farmers are found investing their increased income in building cement concrete buildings. Nearly 43 villages are directly connected to S.T. Services upto 1981. On an average 65 people from each village travel to and from cities daily. Travel has increased more because of the factory.

7) Trade and Commerce:

The activities of trade and commerce have increased after co-operative sugar factory at Dhrol. Because of the sugar factory, population concentrated on the factory premises giving a little boost to local trade and commerce. The factory also reward its share-holders to engage in commercial activities like Kirana Buiser, Cloth Merchants, Engineering work, agriculture service centres etc. in the sub-region.

3:1) c) Impact on Social and Cultural Activities:

In the field of education the co-operative Sugar Factories have played a very important role in expansion of

educational facilities to the rural masses of Maharashtra from primary to middle to college level educational institutions are built and managed by some of the sugar factories in Maharashtra. Other sugar co-operatives helps indirectly by giving financial aids to such educational institutions in their operational area. Some sugar factories have organised technical courses and residential colleges in their areas.

Shri Datta Co-operative Sugar Factory had given an aid Rs.1,57,000 to educational institutions in 1980-81 and Rs.22000 in 1981-82 (see table 3.8) .This kind of grant-in-aid was started in 1980-81. Before, this the factory was unable to aid such activities. Besides the factory has aided to increase the setting up of libraries in rural areas. Recently it has announced a scheme to give scholarships for meeting the educational expenses of extra-ordinary students of its area. It has helped to built Harijan-Madira for Harijans.

Every villega has a god or a goddess. Every villega has festivals to be held in the honour of the gods. Gifts like gold or silver ornaments are made for gods to some extent, which was generally found a decade ago. The Hindus are participating 'Uruses'(Muslim Festivals) . The bulutedari system is not found in any villega. The relation between backward class and other class is increasing. But caste is still retain its pivotal position in the social structure.

The factory organises cultural activities like Ganeshotwa, Sports competition for its workers. It also granges film shows for its workers as well as its shareholders during the festival

Table No.10

DEVELOPMENT OF CO-OPERATIVES

Sr.No.	Co-operatives	No. in 1970-71	No.in 1980-81
1	Credit societies	20	71
2	Forest societies	1	1
3	Dairy societies	5	61
4	Housing societies	8	25
5	Industrial societies	2	6
6	Marketing societies	1	1
7	Labour societies	—	1
8	Irrigation societies	11	29
TOTAL		48	195

time the factory brings popular drama groups on site.

Thus it also tries to create the forward and backward linkages in the process of industrial development of its area. The multiplier effects on co-operative set up in development of industries in rural area is found in this sub-region.

3.2) Impact on Share holders:

Co-operation may also be regarded in the composition of membership, as primarily the coming together of the weak. Co-operation between the weak is possible to generate strength but not any rate of the very weak. That means setting up a sugar factory is an opportunity to the middle class¹⁰. As Dr. B. Venkatappiah said in the presidential speech at 1st National convention on studies in co-operation, "there is always danger of the richer and the stronger over powering the poorer, the weaker and least powerful."

The essence of co-operation according to the principles of co-operation is the voluntary coming together of the members with share capital for common economic interest, so, that to their shared activity might be added the dimension of strength. The contributors mainly belong to well-to-do families who own at least one acre of land. Another dimension of sugar co-operatives is that they are creating enterprenuership in rural

10 The class of society between the upper and the lower class - oxford Dictionary.

areas. Maharashtra has proved this through co-operative sugar factories.

The co-operative sugar factories are set up with the initiative of member shareholders. This provides double benefits to a factory. One they contribute share capital and two the raw materials when it works. Thus the pre-erecting and post-erecting responsibilities rests on the share holders. These member share holders are called as producer members of a factory ('A' grade), members of other categories do not have any post-erecting responsibilities. Thus the important among these categories of members share holder is 'A' group share holders.

However it is necessary to study the way in which a member shareholder is benefited by a sugar factory. As said earlier the co-operatives are interested in the development of their operational area . This has been discussed in Chapter 3.1. For the convenience of the study only 142 samples (producer share holders) are selected. The main questions discussed in this topic are (1) what is the position of their (Share holders) land holding ? (2) What are the changes in their family life over a decade ? (3) What is the position of employment ? (4) How their (share holders') income has grown ? (5) What is the impact on their agriculture ? (6) What change the consumption has undergone ? (7) What is the change in their attitude to education ?

3:2 a) Land Holding :

The table 3.11 illustrate the land holding pattern of the samples.

Table No. 3.11LAND HOLDING OF SAMPLES

Classification of holdings		No. of Shareholders	No. of shareholders
[acre	acres]	in 1970-71	in 1980-81
1 to	3	44	44
3 to 5	5	23	23
5 to	8	33	33
8 to	10	19	25
10 to	Above	23	25
Total		150	150

It should be noted that about 44% of Share holders are small farmers.¹¹ The table shows that the category of land holders above 8 acres is increased at the expense of small land holders not covered in the samples.

11. Small farmers are defined as those who hold roughly below 5 acres of land area.

3:2 b) Family Life:

There was a time before a decade ago, when family planning programmes were unknown to the majority of the people. Today however, every family from among the samples tries to keep the family limited. The joint family system is found among 20% to 25% ^a samples. This was 40 to 45% in 1960-61. Large families were facing the problem of disguised unemployment, which after establishment of the factory decreased from 55% to 15%. Unemployed population tends to migrate to cities. As a result agriculture faces a shortage of adequate labour supply. A decade ago all family members were fully engaged in agricultural activities. But today rich and well-to-do families get all their work in agriculture done from hired hands. The well-to-do families do not send women from the family to work in the field. A sense of hospitality still persists among rural population, which was also found in past. There is growing commercial attitude of life in general in each family. Normally each family has an optimum number of members. Status of women is the same as it was in a decade ago. Some attention is being paid to educated female members in families. A decade ago an educated woman was very rare.

3:2 c) Socio-economic Profile :

For a proper appreciation of the impact of the factory, it is necessary to have broad understanding of the economic, social and cultural profiles of the member shareholders. A sound economic position always creates a social prestige in the society, with the sugar factory, and

increased income, this sense of prestige has become very important in the social life of the members. This prestige is directly proportional to income.

a) Standard of living :

Generally the standard of living has undergone a change though not supported by statistical data. As sugar factory is providing assets to its shareholders, their income has gone up. Therefore, the standard of living goes high than in the past as income has direct connection with standard of living. Electricity has reached in almost all homes of sample respondents. So electric light in their houses is generally found. Moreover, people have completely stopped the traditional method of grinding food grains at home. 29 number of sample families buy a newspaper daily.

Nearly 60 % of shareholders are investing their increased income for profit. Nearly 5.33% sample shareholders purchased new land area from other farmers and 10% shareholders purchased tractors through financial assistance from credit institutions.

Two decade ago use of wrist watch was a luxury, today it is one of the necessities of life. Instead of using aluminium cooking utensils, 68% people are using stainless steel utensils.

b) Housing :

Selected samples were unable to give correct information about increase in income during the last ten year.

But it is true that the income has gone up. The construction of their house was of a primitive kind before ¹⁹⁶⁰1970. And now every respondent is found to live comfortably in well built houses. The table 3.12 shows their housing position at present.

Table No. 3.12

Housing Position

Villages	No. of sample share-holders	Good Condition		Medium		Not Good	
		1970-71	1980-81	1970-71	80-81	1970-71	81
Donoli	5	1	2	2	2	2	1
Arjunwad	17	5	10	8	5	4	2
Shirati	8	2	5	3	2	3	1
Najarewadi	15	5	8	5	5	5	2
Jambli	26	8	12	15	12	3	2
Shiradwad	19	4	6	10	10	5	3
Dattawad	18	3	3	6	8	4	2
Herwad	14	2	4	6	8	6	2
Bajapur	10	-	2	5	4	5	4
Alas	15	2	5	8	8	5	2
TOTAL	142	32	57	68	64	42	21

[In the above table base year is 1970-71 and the current year is 1980-81]

It is clear from the above table that the number of good buildings has increased from 32 to 57 (i.e. 48 %) and the number of building which are not in good condition decreased from 42 to 21 (i.e. 50 %).

c) Conforts and Luxuries :

The use of confort and luxuries has been increasing. For example, the use of cycle is common. A decade ago few rich farmers had motor cycles. Today there is a growing trend to purchase motor cycle. Nearly 54% of the sample share holders had radios at the end of 1981. It was only 22% in 1970. The use of tables, chairs, fans have increased within a decade. But the use of electric stoves and the use of refrigerators is not found in any family. Gobar gas is being used at 9 families. This position ^{is} 1.0% illustrated in the table No. 3.13 below.

Table No. 3.13

Sr.No.	Item	Base year 1970-71	Current year 1980-81
1	Cycles	52	130
2	Motor cycles	5	48
3	Motor cars	-	2
4	Fans	-	18
5	Electric stores	-	-
6	Gas stoves	-	5
7	Refrigerators	-	-
8	Tables	3	21
9	Chairs	9	50
10	Radios	11	79
11	Gobar gas	-	9

d) Food:

There is a little change in the diet pattern of among the shareholders . Due to inception of irrigation, peoples regularly consume rice in their daily meal, which was rare a decade ago. The fruits, eggs, etc. are not included in daily meals but they are consumed once or twice a month, consumption of fruits shows an increase. Non-vegetarian diet is on the increase.

e) Clothing and entertainments:

The use of man made fibre clothing is generally found in each family in current year, which was rarely found in a decade ago. People frequent cinema theatres and local dramas. But the percentage of such people is less among age old population. Only eleven family members frankly admitted that they have habit to see professional dramas. Most of the old people enjoy 'Tamshas'. For many the only entertainment is cinema.

f) Cultural ceremonies:

The expenditure on marriage, religious ceremony and other cultural activities has increased. Every family demand dowry in their son's marriage, ⁴give it in their daughters marriage. This was also found before a decade ago. The amount of dowry, however, has increased tremendously. Average expenditure on a marriage is between Rs.15,000 to 20,000 which was Rs.5,000 to 10,000 in 1970. It is rather prestigious to spend more in a marriage. The inter-caste marriage is yet

not accepted by any members. There is no such case in the selected samples.

g) Religion :

Religion still plays an important role in life of the sample shareholders though less among the rich and more the poor among. The educated people among their families are little successful in driving away some blind beliefs.

h) Income :

The annual average disposable income from agriculture has increased from Rs.300 in 1960 to 800 in 1970 and Rs.2500 in 1980. The percentage increase of gross income index is about 312.5% from 1970 to 1980. This performance gives a clear picture of change.

i) Education and Literacy :

The literacy rate of sample share holders has increased from 45% in 1970 to 85% in 1980. The number of graduates is 58 in the sample families at the end of 1980, which was only 13 in 1970. The women's education was completely neglected before two decades ago. Slowly this number has increased to a considerable level. Today many women do get an opportunity to go to schools and colleges. The educational institutes have provided this opportunity. A child of an average farmer is being taught at least up to S.S.C. out of 142 sample shareholders, 66 persons (family members) have got an job opportunity. Out of them 42 persons

are employed in sugar factory. Every village has 'Balvadi' run by Gram-Panchayats. Thus a vast majority of the heads of shareholders are illiterate, but education is making some head way among younger generation.

3) Migration:

Once it was a time when rural people rushed towards urban areas due to the disguised nature of unemployment in villages. But today the trend is only found among educated people. Nearly 60% of family members are communiting^{comuting} to cities daily or twice a week.

3.2) d) Agricultural Development:

Introduction of sugar factory has brought various changes in the agricultural patterns of sample respondents. It is a direct and greater impact of sugar factory on agriculture. Majority of the modern agricultural practices have been adopted by a majority of the farmers. This is exclusively due to the sugar-cane.

Factory is responsible to introduce the following improved agricultural practices in its area. These are

- (a) Farm Planning
- (b) Use of local manures and use of chemical fertilizers
- (c) Use of improved seeds
- (d) Animal husbandary
- (e) Crop protection measures
- (f) Use of improved agricultural implements

- (g) Land improvement programme
- (h) Irrigation sources
- (i) Cultivating cash crops and double crops
- (j) Credit supply to agricultural development activities etc.

The term farm planning refers to the use of seeds, cultivation methods, fertilizers, crop selection, crop protection etc. Such farm planning practices have been found to be adopted by all samples. A few farmers never actually work in the farm, but still get their work done in a planned manner. Two decade ago people used to plan only crop patterns i.e. which crop should be taken in which farm. Today the planning has become more complex. Those who have land-holding below 3 acres (the number is 44) have to adjust their cropping pattern according to their neighbours, because if neighbours from both sides cultivate sugar-cane, a person who is middle in this situation has to cultivate sugar-cane, otherwise he has to bear loss. About five feet land area goes waste from both sides of a farm unit.

The use of manures prepared from animal wastes and from household wastes is traditional . Such local manures were prepared in pits. Even today this practice is continued. This process is rapidly increasing because of the rise in the prices of chemical fertilizers. Moreover, now-a-days agriculturists are preferring manures. Especially prepared from animal wastes, because ~~the~~ it does not cause salinity of land.

But the supply is less and demand is more. The rate of local farm manures was only Rs.5/- per bullock-cart in 1960, it rose to Rs.10 in 1970 and upto Rs.35 to 40 per bullock-cart in 1980. A few respondent farmers are using alluvial soil from the banks of rivers as manures in their sugar-cane farm units. Sugar-factory is supplying farm manures prepared from press mud and molasses at a nominal rate of Rs.7 per tonne to the shareholders. A decade ago farmers were used to settle goats and sheep for increasing the fertility of soil and it is ^{indeed} true that the fertility of the soil increases. But nowadays such facility is not available. Because all farm units are commercialised. So no body allows the goats and sheeps to enter their fields.

After the inception of irrigation the use of chemical fertilizers has gone up. Two decades ago majority of the farmers were unaware of chemical fertilizers. Even one respondent says that, when such fertilizers appeared in the markets, a few modern (in those times) agriculturists tried to use it while he (an old man) asked God, whether to use it or not ? People are generally using such chemicals for their various crops. The use also increased to a maximum level. For years after the irrigation nearly 50 Kg. Chemical fertilizers per acre were used as an average among the respondents. Today nearly 325 Kg. fertilizers per acre is being used by the same respondents. The use of pesticides is also common wherever the need arises. The factory is supplying the pesticides like Araton and Gama BHC to its

shareholders. Such pesticides are always required to fruits and vegetables .

Recently the factory had brought new sugar-cane seeds, which are being accepted by majority of the people. They are Co 7219 and 7125. But even today nearly 80% of sugar-cane area of sample respondents is under Co 740. The factory is multiplying new seeds for its shareholders. Most of the such seeds are being used by rich farmers. New varieties of sugar-cane are not acceptable to small farmers from sugar factory among the samples for following reasons:--

- 1) They are economically backward. They cannot purchase by spending more only for seeds.
- 2) They did not know the knowledge of its pre-plantation and post-plantation cultivation technique. Even they did not get interest in such knowledge due to their backwardness.
- 3) They have no private source of irrigation.
- 4) As they are economically backward they cannot use all appliances sufficiently. About 25 respondents who ^{are} being on high land holdings in our samples are used to purchase seeds from sugar-factory. Among the samples the purchase of new seedlings from factory varies between 5 and 1 times in ten years. But the percentage use of new and improved seeds is high among rich farmers only. Every year factory supplies such seeds from its multiplication-cum-demonstration plots

(See Chapter 3.1). Other new seeds like Sons, Ratna, Taichung of rice, S-9-10 of ground-nut CMS-1 of Jawar and HYV vegetables and fruits are being used by sample farmers. A decade ago farmers were unaware of such motivations in the field of improved seeds. But people are lacking in the techniques of cultivation.

Before the establishment of sugar-industry on an average every sample household had at least one buffalo. The number now is at least two. Today every sample household is earning by selling milk. Today there are 364 buffaloes and 128 cows possessed by all sample households together. No goats, sheeps and poultry units are observed in their houses. A decade ago farmers had local breeds of cows and buffaloes for milk purposes. They are using cross-breed cows buffaloes, which yield more milk as well as more income. 56 samples were benefited by this credit facility available for dairy purposes. Before a decade ago private milk ^{Collectors} collected the milk and they used to sell it in cities either in the form of milk or in the form of milk products. Today through co-operative dairy societies milk goes to 'Doodh Sangh' (a Govt. undertaking) at Miraj or Marans Milk Project (a co-operative set up) at Marananager. A little area of cultivable ^{land} is being kept for HYV fodder purposes. Thus breeding of animals is a commercial purpose and allied activity to the agriculture sector. And there is a greater profit margin in this activity. So, farmers are very interested in this activity. The activity

of breeding animals is increasing among small farmers in comparison to rich farmers. It is but natural that small farmers fall a certain limitation in earning income through a commercial crop. Traditional crop protection measures like hedging the farm and units when there is a crop in the farm ~~units~~ are still in use. Especially the road side farm units need such hedges. Only seven from the samples had put a hedge using either cement or iron poles, with wire, which is costly but permanent. Another method of crop protection is following by planting a 'Shivari' around a field which brings down the salinity and it serves as fodder. It is particularly also grown around a sugar-cane area. Now-a-days the HYV Crop protection from birds in some places is essential. The crops like HYV jawar require such protection and the crops like ground-but require protection from men.

The sample under survey are found using modern implements of agriculture. Before the establishment of sugar-factory, these farmers were using oil engines for irrigation purposes. The use of both modern and iron plough is found among 65% of the samples and 15 % of the samples respectively. 20% of the sample have no ploughs at all. They hire necessity implements from those who have the use of bullocks was generally accepted by the samples before two decades. Now-a-days the attitude towards, using the bullocks and bullock carts is declining. Before ^a sugar factory there were 122 bullocks pairs & 122 bullock carts with in the sample families together. And at present there are only 72 bullock pairs & 69 bullock carts. A few samples have only one bullock and they make a pair. ~~with others~~ with others bullock

~~By borrowing one from others.~~ Every sample family has got at least 4 Kurapas, 2 axes, 3 picks and one shovel and other instruments of sowing and harvesting. The use of tractors for ploughing the land and the use of bulldozers for land levelling is increasing. The use of modern implements like electric pumpsets, use of spray, use of 'Trishla', 'Balram' use of disc etc, are followed by almost all sample farmers.

The land improvement and development activities like land levelling, banding, bringing new land under cultivation are followed immediately after the installation of irrigation schemes in the area. The percentage use of bullocks and bullock carts was higher than tractors and bulldozers where little efforts were required in 1970. Especially the land area at river bank required such land levelling activities. Only 38 acres out of 1061 ^c acres of respondents land is dry area.

The major cash crop among the sample farmers is sugar-cane. Besides 15 farmers from the samples are engaged in the cultivation and marketing of vegetables and 29 samples tried the cultivation of cotton (Mahalaxmi and Vars-Laxmi varieties) and only 12 farmers are cultivating tobacco. Some times agriculturists cultivate double crops in the some farm units, e.g. cultivation of groundnut after the plantation of sugar-cane. This requires more inputs like water, fertilizers etc. Moreover, this helps to increase the fertility of the soil. Taking two crops in ^{two} different seasons is also called as double cropping. Only two crops in two different season are taken. Double cropping pattern was not possible as there

Table No. 3.14POSITION OF LOANS

VILLAGES	No. of Respon- dent	No. of loans credited in 1970-71				No. of loans credited in 1980-81			
		10,00 to 30,00	3000 to 5000	5000 to 10000	Total	1000 to 3000	3000 to 5000	5000 to 10000	Total
1. Danoli	5	-	-	-	-	-	2	-	2
2. Arjunwad	17	5	-	-	5	-	10	2	12
3. Shirati	8	2	-	-	2	-	5	1	6
4. Majarewadi	15	3	3	-	6	-	5	2	7
5. Jamblī	26	3	3	-	6	-	10	3	13
6. Shiradwad	19	2	-	-	2	-	3	-	3
7. Dattawad	13	1	1	-	2	1	2	2	5
8. Herwad	14	-	4	-	4	-	4	6	10
9. Rajapur	10	2	1	-	3	2	2	1	5
10. Aias	15	-	2	1	3	-	5	4	9
TOTAL	142	20	14	1	35	3	48	21	73

were no irrigation sources earlier. Farmers started gaining benefit from such credit schemes. It is observed that after the installation of irrigation schemes and establishment of sugar factory. The number of samples who received credit facilities as against 35 in 1970. The amount of the loan increased from Rs.700 to Rs.1000 in 1970-71 to Rs.5,000 to Rs.10,000 in 1980-81.

The table 3:4 illustrates the increase in demand for credit, particularly demand for loans ranging Rs.3,000 to 5,000 is higher than the base year (i.e. from 14 to 48) while the number ⁸ loans ranging Rs.1,000 to 3,000 comes down from 20 to 3 in the respective years. And 16 samples - secured loans ranging above Rs.10,000 at the end of 1981. Six samples received credit for purchasing tractors. Thus growth and development in the field of agriculture is higher than other components of the impact study.

3:2 *) Participation in Trade and Commerce.

Generally trade and commerce activities are induced to earn greater profit. After the establishment of sugar factory, people tend to earn more income either from agriculture and allied activities or from trade and commercial activities. Table 3.15 will illustrate the participation of our samples in trade and commerce.

These activities (mentioned in table No.3.15) are run by family members. These business activities are dependent on the place and circumstances where they are located. Most

of such activities are developed either in large villages or in city areas. Any way participation in trade and commerce has been increasing. The surplus labour force from the agriculture is being utilised in such activities. Especially the educated unemployed are engaged in above business activities. Thus most of the samples in addition to cultivation indulge some other occupation.

Table No.3.15

TRADE AND COMMERCE ACTIVITIES

		1970-71	1980-81
1	Bakery	1	1
2	Groceries	3	8
3	Kerosene Agency	-	1
4	Cloth merchants	-	2
5	Flour mills	1	3
6	Hotel	-	3
7	Cycle repairs	1	5
8	Power looms	5	16
9	Agri-service centre	-	2
10	Sweet Marts	1	1
11	Machine repairs pump sets	-	1
TOTAL		12	45

The communications like post, telegraphs and telephones have reached in almost all villages of selected villages. But only 3 households have telephone connections during the survey period.