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**THE IMPACT OF SUGAR FACTORIES  
ON THE RURAL ECONOMY  
A CASE STUDY**

**OCTO. 1980**

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**THE IMPACT OF SUGAR FACTORIES  
ON THE RURAL ECONOMY  
A CASE STUDY**

**A THESIS  
SUBMITTED TO  
THE UNIVERSITY OF POONA**

**FOR THE DEGREE OF  
DOCTOR OF PHILOSOPHY  
(IN ECONOMICS)**

**BY  
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AND ECONOMICS  
PUNE 411004  
OCTOBER 1980**

## ACKNOWLEDGEMENTS

Since the First Five Year Plan, the emphasis has been laid on the economic development of rural areas. The State in India announced its intention to pursue an active policy for the development of agriculture and ultimately for the development of rural areas. One viewpoint has been that the development of agro-based industries in these areas would accelerate their development. In Maharashtra the development of sugar industry in the rural areas, especially in the cooperative sector, was given importance. Now-a-days a cooperative sugar factory is being considered as the centre of rural economic development. So far no attempt has been made to assess the role of a sugar factory in the economic change in the rural areas, in Maharashtra State.

This study was undertaken in order to find out the impact of a sugar factory on the rural economy. The work on this research project was started in March 1974. In the process of completion of this work, many individuals and institutions have helped me directly and indirectly. I owe a debt to them.

The study was undertaken under the guidance of Prof. (Dr.) A.S.Nadkarni, Gokhale Institute of Politics and Economics, Pune-4. Without his constant encouragement and interest, the work would not have taken the present shape. His deep insight into the problem of rural development proved invaluable in the interpretation of the data. I express my deep sense of gratitude to him for sparing time out of his busy schedule for me.

I take this opportunity to express my gratitude to Prof. V.M.Dandekar, Director, Gokhale Institute of Politics and Economics, Pune, for awarding me Teacher Fellowship for one year which enabled me to pursue the work at the Institute.

I also express my thanks to the authorities of the Rayat Shikshan Sanstha, Satara for sanctioning me study leave of one year and for providing me some research facilities.

I am grateful to Dr. D.P.Apte, Registrar, Gokhale Institute, for his help and guidance during my stay at Pune. I thank Mr. Sardesai and other staff of the statistical department of the Institute for their promptness in processing of data of my thesis.

I owe a lot to Dr. Ashok Mitra, Dr. G.R.Mulla, Dr. R.G.Paithankar, Dr. J.F.Patil, Dr. N. Benjamin, Shri J.L.Gandhi and Shri Tapaskumar Sen for their advice on numerous occasions. I am thankful to the Library Staff of Gokhale Institute and of the Vaikuntha Mehta Institute of Cooperative Management.

I am grateful to Mr. Shankarrao Kolhe, Chairman of the Sanjivani Cooperative Sugar Factory and the Manager and the staff of the factory who have provided me with the required data. My thanks are also due to the authorities and staff of the Godavari Sugar Mills, Changdeo Sugar Mill, Kopargaon Cooperative Sugar Factory, Ganesh Cooperative Sugar Factory, Godavari Khore Milk Producers Sangh, Marketing Committee of Kopargaon Taluka and KOSANG Distillery for their help in the course of field investigation and data collection.

I am also grateful to the Tehasildar of Kopargaon taluka, Kamgar Talathies, Kamgar Patils, and Sarpanchas of the surveyed villages for their hospitality, kindness and sincere help.

23rd October 1980.

  
(S. D. Tupe)

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## CHAPTER I

### HISTORICAL BACKGROUND

#### 1.1 Earliest Record of Sugarcane and Sugar in the World

The production of sugar and syrup was known in India perhaps a few centuries before the Christian era and certainly by 400 A.D.<sup>1</sup> For sweetening purpose the Teutons, Greeks and Romans used honey almost exclusively. The growth of sugarcane and its use in the form of sugar had spread from India to Ceylon, Java, China in the east and to Persia in the 6th century and to Spain in the 8th century. In the course of their conquests from the 7th to the 9th centuries, the Arabs introduced the growing of canes and making of sugar in Cyprus, Egypt, North Africa, Spain and Sicily. The Egyptians so perfected the refining process that their white sugar enjoyed the highest reputation in the middle ages. North Western Europe was acquainted with the use of sugar owing to the crusaders, who themselves promoted its production in Syria, Palestine and Cyprus. The trade in sugar was dominated by Venice and Genoa and it was particularly an important factor in Venetian Commercial Supremacy. During the time, however, sugar was essentially a luxurious commodity and it was also being used for medical purpose.

While Venice imported sugar from Syria and Egypt as early as 996 A.D. the refining of sugar was Venetian monopoly for 100 years or more. Later on it spread to England, Germany and Holland. In the 17th century the refining of sugar was practised on a considerable scale in France where it was encouraged by the Government. The cultivation of sugarcane was promoted in all the tropical colonies of the European nations after the discovery of America. Cane plantation which was first introduced in Haiti was first a failure but subsequently succeeded on a large scale. It spread to Cuba in 1511, Mexico in 1522, Porto-Rico in the following year, Java in 1527, and Peru and Brazil at about the same time.

By the end of the 18th century almost the entire World was dependent mainly upon American sugar, although a considerable supply came from Java and Ceylon. At the beginning of 19th century German chemists found out the use of beet root for extraction of sugar. Now, a small amount of sugar is also being produced from the sap of maple and palm trees.

## 1.2 Position in India

✓ Sugarcane and its main product are known in India since ancient times. The earliest reference of sugarcane appears in Atharva Veda, the sacred book of Hindus composed between 5000 and 1000 B.C. Efforts to establish a modern

sugar industry however go back only to the beginning of the present century. India lies entirely to the north of equator. Hence sugarcane is grown in nearly all parts of India.

A hundred years ago or more, sugarcane was attacked throughout the world by a mysterious disease which almost killed it. It was thought that the days of sugarcane cultivation had come to an end. A batch of scientists undertook a tour of the world to find out if any variety of sugarcane was to be found anywhere at all. They visited all the countries which were traditional cultivators of sugarcane. After visiting many countries in vain, they reached India and started touring all the sugarcane areas. They came to Bihar. To their great surprise they found that in Saran district of this state, there was left a variety of sugarcane which had not suffered the fate that all other varieties had met with, throughout the world. Not a stalk had been attacked by the disease that had caused havoc elsewhere.<sup>2</sup> By careful breeding, they were able not only to save sugarcane from extinction but also to evolve many new varieties. Bihar and India can, therefore, be justly proud of being the progenitor of the hundreds of sugarcane varieties that now flourish in the world viz., Adasali, Autumn, Spring (419, 449, 527), etc. The research centre for sugarcane was established at Pusa in 1935 by Lord Curzon, the then Viceroy of India.<sup>3</sup> Today it is one

of the biggest sugarcane research centres of the world. It has two sub-stations and besides them, zonal centres dispersed over the White Sugar belt where varietal, manurial and cultural tries are conducted for evolving varieties suitable to different areas and regions of India.

### 1.3 Development of Sugar Industry in India

The first sugar factory in India was started in 1784 by a civilian, Croftes, at Sooksugar which was privately owned. The second factory was started in 1791 in Bihar by L.T. Patterson.<sup>4</sup> Then Mr. Edward Campbell strove to start another sugar factory at Trichinapaly in Madras State, but he did not succeed. But at the same time, Robert Campbell succeeded in establishing a sugar factory in the same area. According to Mr. Robert Campbell, a sugar factory cannot succeed unless it possessed its own sugarcane farm. For the sake of supply of sugarcane, it has to depend on sugarcane cultivators mainly interested in manufacturing of gur from the sugarcane. So it was found necessary for a sugar factory to have a farm of sugarcane owned by itself. Attempts were made to start a sugar factory in Bombay province. Eventually, various sugar factories were established in the private sector till the period of Independence. The protection policy of 1932 also provided a great impetus for the development of sugar industry and upto 1938-39, nearly 139 sugar factories

were established in India.

A logical extension of the co-operative philosophy to the sugar industry was first made in 1933 when four sugar manufacturing enterprises in the co-operative sector were established at Biswan (Uttar Pradesh), Thummpala, Etikoppaka and Vuyyuru (now in Andhra Pradesh). These were established immediately after the sugar industry in the country was granted protection. Out of these, only the factory of Ettikoppaka has survived. But this surviving sugar factory does not seem to have inspired the scheme of the co-operative factories that was launched in 1954 in India. The credit for initiating this scheme should go to the Pravaranagar Co-operative Sugar Factory established in 1948.<sup>5</sup>

Due to the efforts of Prof. D.R.Gadgil, the factory could start its first crushing season in the year 1950-51 with a capacity of 450 tons. This venture proved to be a great success and consequently the management was soon able to raise the capacity to 1450 tons.<sup>6</sup> The information about the number of sugar factories established in private, public and co-operative sectors in India is given in Table 1.1.

Table 1.1 shows that in 1973, Maharashtra was second in the number of sugar factories. Out of the total sugar factories in India, there were 73 i.e. 31.06 per cent of the sugar factories in Uttar Pradesh and 47 i.e. 20.0 per

**Table 1.1. Licensed and Established Sugar Factories in the Private, the Public and the Cooperative Sectors in various states as on 28-12-1973**

State	No. of sugar factories established				No. of sugar factories licensed but not established			
	Private joint stock basis	Public sector	Coop. sector	Total	Joint stock basis	Public sector	Coop. sector	Total
Andhra Pradesh	10	2	8	20	-	1	8	9
Assam	-	-	1	1	-	1	-	1
Bihar	28	1	1	30	-	-	1	1
Goa	-	-	-	-	-	-	1	1
Gujarat	-	-	8	8	-	-	5	5
Haryana	1	-	2	3	-	-	2	2
Jammu and Kashmir	-	-	-	-	-	1	-	1
Karnatak	5	1	7	13	3	1	4	8
Kerala	1	-	2	3	-	-	-	-
Madhya-pradesh	5	-	1	6	-	-	-	-
Maharashtra	11	-	36	47	-	-	18	18
Nagaland	-	-	-	-	-	1	-	1
Orissa	1	-	1	2	-	-	1	1
Pondicherry	1	-	-	1	-	-	-	-
Punjab	2	-	4	6	-	-	-	-
Rajasthan	1	1	1	3	-	-	-	-
Tamilnadu	10	-	7	17	-	-	3	3
Uttarpradesh	63	5	5	73	2	1	7	10
West Bengal	2	-	-	2	-	-	-	-
<b>Total</b>	<b>141</b>	<b>10</b>	<b>84</b>	<b>235</b>	<b>5</b>	<b>6</b>	<b>50</b>	<b>61</b>

Source: Report of the Sugar Industry Enquiry Commission, Vols. I and II, 1974, page 2. Ministry of Agriculture, Government of India, New Delhi.

cent in Maharashtra State. Out of the total number of sugar factories in Maharashtra 36 i.e. 76.60 per cent of the sugar factories were in the co-operative sector and 11 i.e. 23.49 per cent were in the private sector based on joint stock pattern. In Uttar Pradesh on the other hand private factories are larger in number. In fact in about all the other States which have sizeable number of sugar factories, viz. Andhra Pradesh, Bihar, and Tamilnadu, the private factories outnumber the co-operative ones. In Maharashtra alone the co-operative sector predominated in the sugar industry. It can be observed that the number of co-operative sugar factories in Maharashtra is more than in any other State in India. Out of all the co-operative sugar factories in India in 1973, 42.86 per cent were in Maharashtra. The second important thing is that, as compared to other States, the number of newly licensed sugar factories was also the highest in Maharashtra. Out of the 61 newly licensed sugar factories 18 i.e. 29.50 per cent of the sugar factories were given licences in Maharashtra in the same year. (All the newly licensed sugar factories in Maharashtra State were in the cooperative sector.) Thus from the data we can say that the sugar industry in the co-operative sector is of some significance in India and is predominantly so in Maharashtra.

#### 1.4 Growth of Sugar Industry and its Position in Maharashtra

The first sugar factory in Maharashtra was established in 1919 and started its crushing season in the year 1924-25. The second sugar factory was established in 1930, viz., the Walchand Sugar factory. In 1930 Tariff Commission was appointed to examine the need of protection to the sugar industry. The Tariff Commission recommended protection for a period of fifteen years. The Government of India not only granted protection to the sugar industry but also adopted a favourable policy and provided incentive to the industry.<sup>7</sup> Due to the new policy, 13 sugar factories were established in Maharashtra by the end of the second world war.

Before Independence, there was not a single co-operative sugar factory in Maharashtra. In 1948, the first co-operative sugar factory was established in Maharashtra in Ahmednagar district, viz., Pravara Co-operative Sugar Factory. From this period onwards, a large number of co-operative sugar factories have been established in India, especially in Maharashtra. Now sugar factories have become a dominant aspect of agro-industrial picture in Maharashtra.)

Capital invested, labour employed, and output of the industry are shown in Table 1.2. The table brings out the relative position of the sugar industry in Maharashtra.

From Table 1.2, it is clear that (the number of sugar



**Table 1.2. Sugar Industry in India and Maharashtra**

Particulars	1963			1970		
	India	Maharashtra	3 as per cent of 2	India	Maharashtra	6 as percent of 5
1	2	3	4	5	6	7
Number of sugar factories	187	28	14.97	223	39	17.49
Productive capital employed (Rs.)	1,26,01,39,516	31,96,56,188	25.37	2,51,25,09,000	87,26,87,000	34.73
Employment	1,05,862	15,194	14.35	1,42,811	25,360	17.76
Production of sugar (Tonnes)	2,07,176	4,92,802	23.75	39,97,588	8,58,678	24.48
Product and by-products (Rs.)	1,72,72,27,069	41,32,54,210	23.93	5,58,31,96,000	134,05,13,000	24.01
Gross value of the output in Rs. (products and by-products)	1,73,72,23,092	41,75,45,651	24.04	5,62,38,88,000	135,15,14,000	24.03

Source: Annual Survey of Industries (Census Sector) 1963, Vol. II; and 1970, Vol. II.

factories in India has increased in 1970 from 187 to 223 and in Maharashtra from 28 to 39 as compared to 1963. Out of the total number of sugar factories in India, 14.97 per cent were in Maharashtra in 1963. The proportion increased to 17.49 per cent in 1970. In 1970 out of the total capital invested in the sugar industry in India, 34.73 per cent was invested in Maharashtra. It was only 25.37 per cent in 1963. The sugar industry in Maharashtra provided employment to 25,360 labourers in 1970, as against 15,194 labourers in 1963. This employment in Maharashtra as a proportion of the total employment in the Indian sugar industry, rose from 14.35 per cent to 17.36 per cent. The most important thing is that Maharashtra produced nearly one-fourth of the total sugar production of India, but even with the relative increase in all inputs, the proportion of gross value of the output of sugar factories in Maharashtra to that in India has remained constant.

The rapid growth of the sugar industry in Maharashtra has helped to a very great extent in stabilising the sugar production in the country and in reducing the chronic shortage of sugar. As a matter of fact, during 1970-71, the state produced as much as 11.55 lakh tons of sugar (i.e. 33 per cent of the total production in India) and secured the first place in the country beating the traditional leader, U.P."<sup>8</sup>

— We find that, by the end of 1975, the number of sugar

factories established and licensed in Maharashtra was 84. In Table 1.3 the location of the sugar factories and the sectors in which they have been established are shown. Out of the total number of sugar factories (84) in Maharashtra, 70.24 per cent (59) were already established while 29.76 per cent (25) of the sugar factories were in the process of formation. The remarkable thing is that the highest number of sugar factories was in Ahmednagar district. Out of the total number in Maharashtra, 17 sugar factories, i.e. 20 per cent were situated in the Ahmednagar district, and the highest number of sugar factories in the district was in Kopergaon taluka.

#### 1.5 Sugar Industry in Ahmednagar District

It has already been mentioned that the first sugar factory in Maharashtra was started in 1919. This was the Belapur Sugar Mills at Haregaon in Ahmednagar district. The factory had to face unfavourable situations like financial stringency upto 1927. By the end of 1940 four more sugar factories were established. The newly established factories were: Maharashtra Sugar Mills, Ltd., Tilaknagar and the Belwandi Sugar Mills, Shrigonda in 1934, the Godavari Sugar Mills, Kanhegaon in 1939 and the Godavari Sugar Mills, Laxmiwadi in 1940.<sup>9</sup>

Shri Changdeo Sugar was started in 1941 at Puntamba. Till Independence, there were six sugar factories in

**Table 1.3. Sugar Factories in Maharashtra, established and licensed (upto 1975)**

Name of Sugar Factory	Co-operative/ Private	Location	Taluka	District
1. Satpuda Tapi Parisar	Co-operative	Shirwade	Shahada	Dhulia
2. Banzarakan	"	"	Sakri	"
3. Girna	"	Dabhadi	Malegaon	Nasik
4. Ravalgaon	Private	Ravalgaon	"	"
*5. Kadava	Co-operative	Mauterwadi	Dindori	"
*6. Karmaveer Kakasaheb Wagh	"	Ranwad	Niphad	"
7. Niphad	"	Pimpalas	"	"
*8. Nasik	"	"	Nasik	"
*9. Yaval Raver Taluka	"	Faijapur	Yaval	Jalgaon
10. Vasant	"	Kasoda	Erandol	"
*11. Velganga	"	Bhoras	Chalisingaon	"
12. Sanjiwani	"	Sahajananda-nagar	Kopargaon	Ahmednagar
13. Ganesh	"	Ganeshnagar	"	"
14. Kopargaon	"	Kolpewadi	"	"
15. Godawari Sugar Mills	Private	Laxmiwadi	"	"
16. "	"	Sakarwadi	"	"
17. Changadeo Sugar Mills	"	Puntamba	"	"
18. Maharashtra Sugar Mills	"	Tilaknagar	Shrirampur	"
19. Belapur Sugar Mills	"	Harigaon	"	"
20. Ashok	Co-operative	Ashoknagar	"	"
21. Pravara	"	Pravaranagar	"	"
22. Sangamner Bhag	"	Sangamner	Sangamner	"
23. Rahuri	"	Shivajinagar	Rahuri	"
*24. Mula	"	Sonai	Newasa	"
25. Dnyaneshwar	"	Bhende	"	"
26. Vrudhyeshwar	"	Pathardi	Pathardi	"
27. Shrigonda	"	Belwandi	Shrigonda	"
28. Jagadamba	"	Rashin	Karjat	"
29. Bhima	"	Patas	Dhond	Poona
30. Yashwant	"	Theur	Haveli	"
31. Chhatrapati	"	Bhawaninagar	Indapur	"
32. Malegaon	"	Malegaon	Baramati	"
33. Someshwar	"	Someshwar	"	"
34. Walchandnagar	"	Walchandnagar	"	"
*35. Shri Adinath	"	Karmala	Karmala	Sholapur
36. Yashwant	"	Yashwantnagar	Malshiras	"
37. Shri Shankar	"	Sadashivnagar	"	"
38. Saswad Mali	"	Malinagar	"	"
39. Brihan Maharashtra Sugar Syndicate	Private	Shripur	"	"
*40. Vithal	Cooperative	Isabhavi	Pandharpur	"
*41. Bhima	"	Shikandar	Mohol	"
42. Bhagawati	"	Pangarhan	Barsi	"
43. Sidhyeshwar	"	"	West-	"
44. Shriram	"	Phaltan	Phaltan	Satara

Table 1.3: contd.

Name of Sugar Factory	Co-operative/ Private	Location	Taluka	District
45. Phaltan Sugar Works	Private	Phaltan	Wai	Satara
46. Satara	Co-operative	Bhuing	"	"
*47. Ajinkya Tara	"	Shahunagar	Satara	"
*48. Yeshwantrao Chavan	"	Karmavirnagar	"	"
49. Krishna	"	Rethare Bru.	Karad	"
50. Sahyadri	"	Shirwade	Karad	"
51. Balasaheb Desai	"	Patan	Patan	"
52. Shetakari	"	Sangli	Tasgaon	Sangli
53. Valva Taluka	"	Sakharale	Valava	"
54. Vishvas	"	Yeshwantnagar	Shirala	"
55. Shri Varana	"	Varnanagar	Panhala	Kolhapur
56. Dat	"	Asurle	"	"
*57. Shahuwadi Taluka	"	Malkapur	Shahuwadi	"
58. Bhogawati	"	Parinche	Karveer	"
59. Kumbhi	"	Kuditre	"	"
60. Kolhapur Cane Sug. Works	Private	Kasaba Bavada	"	"
61. Shri Panchaganga	Co-operative	Inchalkaranji	Hatkangale	"
62. Dat	"	Shirol	Shirol	"
63. Shri Dudhganga Vedganga	"	Bidsi	Kagal	"
*64. Gadhinglaj	"	Gadhinglaj	Gadhinglaj	"
*65. Ajara Taluka	"		Ajara	"
*66. Daulat	"	Nesari	Chandgad	"
67. Siddheshvar	"	Sillod	Sillod	Aurangabad
68. Kannad	"	Kannad	Kannad	"
69. Vinayak	"	Deodonagari	Vaijapur	"
70. Gangapur	"	Raghunathnagar	Gangapur	"
*71. Shri Sant Eknath	"	Paithan	Paithan	"
*72. Jaibhavani	"	Gevarai	Gevarai	"
*73. Kada	"	Sundarnagar	Ashti	"
*74. Ambejogari	"	Ambejogai	Ambejogai	"
*75. Marathwada	"	Gongarkada	Kalamnuri	Parbhani
*76. Godavari Dudhana	"	Pathari	Pathari	"
*77. Purna	"	Basmatnagar	Basmatnagar	"
78. Kalamber Vibhag	"	Gandhinagar	Kadhon	Nanded
*79. Godavari Manar	"	Biloti	Biloti	"
80. Terna Shetakari	"	Dhoki	Ausa	Osmanabad
81. Shetakari	"	Killari	"	"
82. Jeejamata	"	Durasibid	Mehekar	Buldhana
83. Vasant	"	Pusad	Pusad	Yevatmal
*84. Parashuram	"	Chiplun	Chiplun	Ratnagiri

\* N.B. Those with an asterisk are the factories under construction. The rest are those already operating.

Source: N.C. Kharkar, "Parisamwad" (Marathi), Maharashtraatil Sakhar Karkhanyache Mulyamapan, published by the Deccan Sugar Technologists Association, Pune, 1976, pp.100-104.



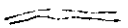




Ahmednagar district, all in the private sector. After 1947, 12 sugar factories were established on a co-operative basis in this district. Of the 18 sugar factories in the Ahmednagar district, 6 are in Kopargaoon taluka.

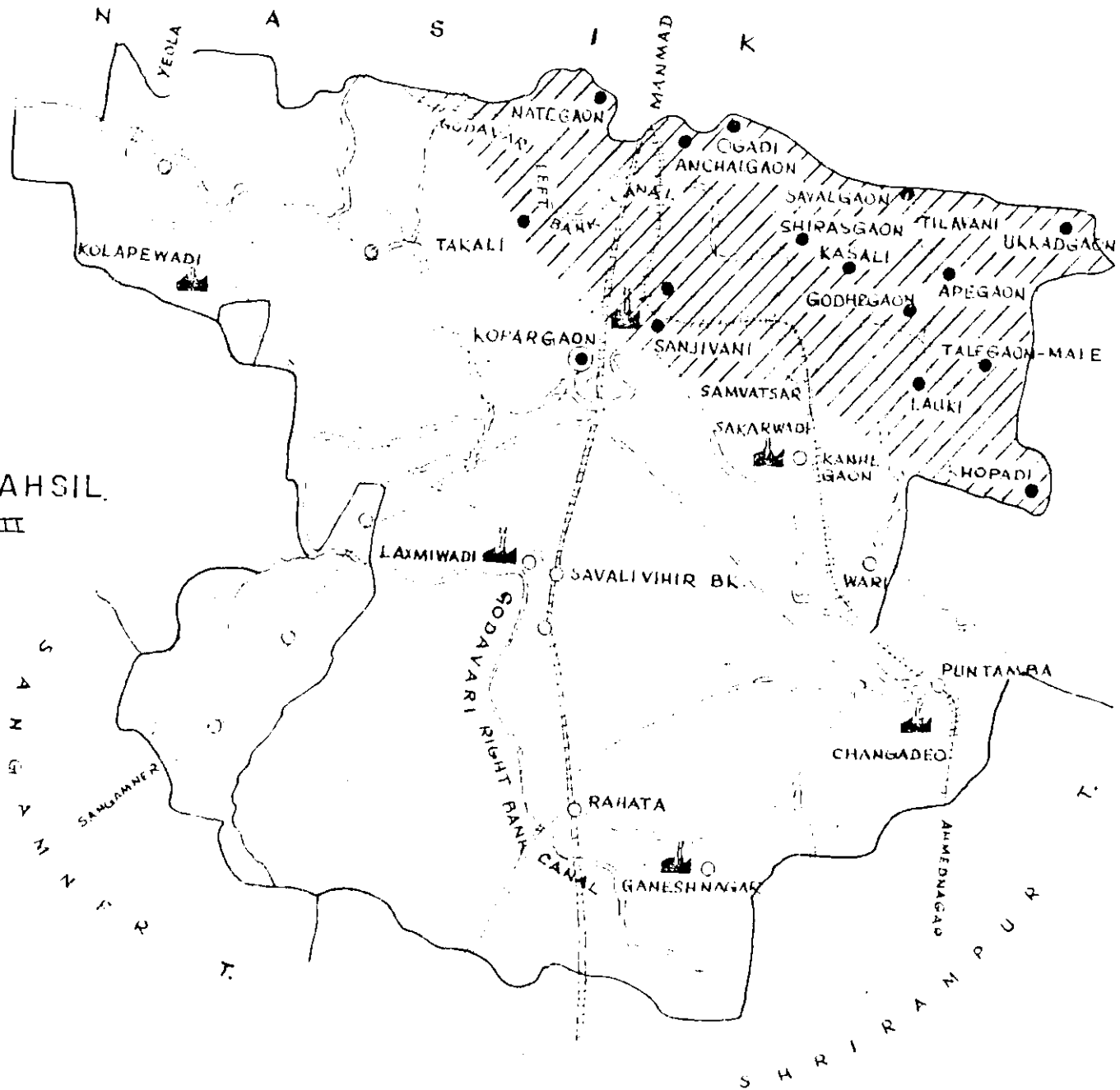
1.6 Kopargaoon Taluka : Climate, general situation and sugar factories

Agriculture is the major occupation in Kopargaoon taluka. As per the Census of 1971, the total population of the Taluka was 2,62,619. Out of this, 76,386 or 29.09 per cent depend upon agriculture and the remaining depend upon other occupations in various fields such as industry, trade, commerce, transport, construction and other services. The Tahsil contains 102 villages. The remarkable characteristic of the taluka is the extensive agro-industrial sector containing six sugar factories and two alcohol factories, one in the private sector and the other in the co-operative sector. The alcohol factory in the co-operative sector, viz., KOSANG was started by the three co-operative sugar factories in Kopargaoon taluka. Along with these factories there exists a relatively more developed agriculture and ample natural resources like rivers, grazing land, transport facilities, marketing centres, a small fertilizer factory, dairy, etc.

Situation: Kopargaoon taluka is so situated as to adjoin the districts of Nasik and Aurangabad. It is approxi-

# KOPARGAON TAHSIL.

- state highway 
- other roads 
- river 
- canal 
- sub canal 
- selected villages ●
- taluka place ○
- other imp. villages ◊
- sugar factory 
- surveyed area 



mately 210 kms. away from Pune city, 90 kms. from Ahmednagar town, 110 kms. from Aurangabad town, and 115 kms. from Nasik town.

Soil and Climate: Especially in Kopergaon taluka the soil is black and rich, having adequate depth for sugarcane cultivation. Due to the Godavari river it has been possible to develop lift irrigation to some extent in this part of the district. As regards the climate, there are three seasons. The rainy season starts from the middle of June and lasts to the middle of October. It is then followed by winter from the end of October and it lasts till the end of February. The summer starts from March and lasts upto the end of May.

Irrigation: One of the main reasons of the economic development of the area is the availability of canal irrigation in some parts of the taluka. The Nandur Madmeshwar Dam is built on the Godavari river. From the dam two canals are constructed. One on the right side of the Godavari river which is 60 miles long, serves the northern part of the Ahmednagar district. The second canal is on the left bank of the river, being forty-eight miles in length. It serves Nasik and Ahmednagar districts. Out of the total 1,07,252 acres of land of Kopergaon taluka nearly 22,084 acres of land i.e. 20.59 per cent are under canal irrigation. Part of the remaining land is under well irrigation and the rest depends on the vagaries of the monsoon.



Prior to the construction of the canal, the tract was entirely dependent on seasonal monsoon and Koprgaon taluka was also traditionally known as a famine area. The cropping pattern was traditional and farmers were familiar with cereals and oilseeds. In 1911, the canals were first constructed in the taluka, but the local farmers were ignorant of the possibility of utilising canal water for the betterment of agriculture. The immigrant agriculturists from neighbouring districts being acquainted with irrigated farming, purchased and acquired on lease land in Kopargaon taluka and started irrigated farming.<sup>10</sup> The local agriculturists were slow in following the example of the immigrants.

#### 1.7 A Brief History of the Sugar Factories in the Kopargaon Taluka

Upto 1914, the sugarcane farming made considerable progress, but the fall in gur prices brought this progress to an end. The gur price situation led to the decline in the area under sugarcane farming. Cultivators became less interested in taking advantage of the canal water and hence the collection of water revenue decreased.<sup>11</sup> In order to find out reasons and a solution, Government appointed a Committee under the Chairmanship of Shri Kamat. In 1932 the Committee recommended the establishment of a sugar factory in the area. The Committee also suggested the

grant of special concessions to the new sugar factories.

Some cultivators from Wari, Kopargaon and Samvatsar approached the promoters of the Godavari Sugar Mills and the Government. M/s. Karimshah Somaiya who were working as sugar commission agents acquired land on lease from the local farmers and established the first sugar factory on the left bank of the Godavari river at Sakharwadi. The factory purchased and acquired on lease nearly 14,000 acres of land at Nighoj-Nimgaon, Rui Shirdi, Rastapur, Samvatsar, Padhegaon, Wari and Kanhegaon. The crushing capacity of the factory was 650 tonnes per day in the beginning. By 1955-56 it was increased to 1016 tonnes.

Godavari Sugar Mills started its second factory on the right bank of Godavari river at Laxmiwadi in 1940 and started its first crushing season in the year 1942-43. Its crushing capacity in the beginning was 800 tonnes and it was increased upto 1,016 tonnes by the year 1957-58.

In 1939-40, when the construction of the Laxmiwadi Sugar Factory was going on, some rich cultivators (big bagaitdars) acquired on lease some land for sugarcane cultivation and tried to get machinery, <sup>for</sup> another sugar factory at Puntamba. But their meagre resources were exhausted in the purchasing and leasing of land. In those days, it was difficult to procure an adequate amount of financial assistance from commercial banks and other sources. Therefore, they approached M/s. Bhiwandiwala and Co. of Bombay, who

agreed to give a certain amount of credit on the condition that they would not take further loan from any other party. Besides, if the cultivators were not able to manage within the given amount of credit, they would have to hand over the factory to M/s. Bhiwandiwala and Co. for its further development.<sup>12</sup> Soon the cultivators found that the amount was too scanty for the construction work, purchase of machinery and appointment of staff. The cultivators again approached M/s. Bhiwandiwala and Co. for financial help; but as per the agreement, the cultivators had to hand over the factory to M/s. Bhiwandiwala and Co. Had the cultivators overcome financial difficulty, this would have been the first sugar factory of cultivators in India in 1940-41.

Of course, some shares were retained by the original owner-cultivators. The factory thus established is the Changdeo Sugar Factory at Puntamba erected in 1940. It started its first crushing season in 1941. The crushing capacity was 350 tonnes in the beginning. It increased to 500 tonnes by 1948-49 and by 1955-56 it increased to 800 tonnes.<sup>13</sup> Soon after the establishment of the Pravara Sugar Factory, the construction of the first co-operative sugar factory of Kopargaon taluka was started in 1953 known as Kopargaon Cooperative Sugar factory at Kolpewadi. Prof. D.R.Gadgil, the noted economist, was one of the Directors of the factory. The factory started its first

crushing season on 12th February 1956. It increased its crushing capacity from 1000 M.T. to 1750 M.T. (Metric tonnes per day) by 1969-70.

Some cooperators from the taluka inspired by the working of the factory decided to start a second cooperative sugar factory in the same taluka at Rahata. On 3rd March 1955 the factory got itself registered and imported machinery from Germany. The factory is known as Shri Ganesh Cooperative Sugar Factory, Rahata. It started production on 22nd November 1957. The crushing capacity of this factory in the beginning was 1000 M.T. and was increased to 1750 M.T. by 1972-73.

The third co-operative sugar factory was started at Shinganapur viz., The Sanjeevani Co-operative Sugar Factory, which has been selected for this study. It was registered on 28th October 1960 and started production on 10th Nov. 1963. Its crushing capacity at the beginning was 1016 M.T. per day. It was increased to 2000 M.T. by 1974-75.

As compared to the private sugar factories like Laxmiwadi, Kanhegaon and Changdeo, working on a joint-stock basis, the position of co-operative sugar factories is more sound. Table 1.4 explains the position of all the sugar factories situated in Kopargaon taluka. The crushing capacity and output of cooperative sugar factories are greater than those of the private sugar factories. Among the cooperative sugar factories, the number of shareholders

**Table 1.4.** The working capital, labourers employed, crushing capacity, output, etc. of the sugar factories in Kopargaoon Taluka.

Details	Private Sector					
	Godavari Sugar Mills, Kanhegaon		Godavari Sugar Mills, Laxmiwadi		Shri Changdeo Sugar Mills, Puntamba	
	1963-64	1973-74	1963-64	1973-74	1963-64	1973-74
1. Date of Registration	1-6-1938		1940		1-6-1939	
2. The first crushing started in the year	1939-40		1942-43		1941-42	
3. Number of producer shareholders	-	-	-	-	-	-
4. Sugarcane area of producer shareholders	-	-	-	-	-	-
5. Sugarcane area of non-shareholders (acres)	4715	N.A.	1650	2083	2562	2294
6. Sugarcane area owned by sugar factory (acres)	N.A.	N.A.	1400	1400	N.A.	N.A.
7. Share capital (Rs.)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
8. Crushing capacity per day (M.T.)	1016	1016	1016	1016	800	800
9. Cane crushed during the year (M.T.)	183733	149495	127180	103309	N.A.	N.A.
10. Output in quintals during the year	194390	147775	145670	114030	86256	74751
11. Employment per day	909	881	826	782	437	472

Source: The information has been obtained from the original records of the concerned sugar factories

Table 1.4: Contd.

Details	Co-operative Sector					
	Kopargaon Co-operative Sugar Factory, Kolpewadi		Ganesh Co-operative Sugar Factory, Ganeshnagar		Sanjivani Cooperative Sugar Factory, Shinganapur	
	1963-64	1973-74	1963-64	1963-74	1963-64	1973-74
1. Date of Registration	4- 4-1953		3- 3-1955		28-10-1960	
2. The first crushing started in the year	1955-56		1956-57		1963-64	
3. Number of producer shareholders	1062	3205	2430	4706	2848	3789
4. Sugarcane area of producer shareholders	3564	5390	5217	N.A.	1210	4466
5. Sugarcane area of non-shareholders (acres)	368	4821	998	N.A.	3130	3338
6. Sugarcane area owned by sugar factory (acres)	-	-	-	-	-	-
7. Share capital (Rs.)	3985794	6657736	4785950	6751702	2913500	54095441
8. Crushing capacity per day (M.T.)	1000	1750	1000	1750	1016	1600
9. Cane crushed during the year (M.T.)	173691	319364	154522	222443	72382	244679
10. Output in quintals during the year	206458	466532	186440	221720	86590	256745
11. Employment per day	870	897	1107	986	414	879

and the share capital of the Ganesh Cooperative Sugar Factory was the highest in the year 1973-74, while the share capital and the crushing capacity of the Sanjeevani Cooperative Sugar Factory was the lowest in the year 1973-74.

1.8 Brief History and Working of the Sanjeevani Co-operative Sugar Factory

As the first co-operative sugar factory in Kopergaon taluka was registered and started working in 1953, a number of rich farmers became the shareholders of the factory. In 1955, when construction of Shri Ganesh Co-operative Factory was in progress, some political leaders of the taluka came together with a view to establishing one more sugar factory. The leaders decided to include a large number of small farmers as shareholders.<sup>14</sup> The leaders had applied for a new sugar factory mentioning the two main objectives: (i) to establish a cooperative sugar factory of small farmers by organizing them, and (ii) to utilise the land for sugarcane cultivation for one more sugar factory.

Sarvashri Y.L.Girme, Shankarrao Kolhe, M.R.Lonawi, Bagaji Kondaji Deokar and other political leaders took the lead in the establishment of the Sanjeevani Co-operative Sugar Factory. The factory started its production within three years of the registration.

### 1.9 Working of the Factory

Initial finance for the factory was raised through sale of equity shares to the farmers in the area of operation of the factory. The face value of a share was Rs. 500. The Government of Maharashtra and the Industrial Finance Corporation of India also subscribed to the share capital of the factory. Information relating to the number of shareholders, shares and share capital collected is shown in Table 1.5.

The table shows that the number of producer-members and co-operative societies as shareholders has been increasing. But in 1966-67 the factory had refunded the share capital of some shareholders who were not regular in supplying sugarcane to the factory. Hence in the said year the number of shareholders and the amount of share capital of the factory decreased. Later on, some other farmers and cooperative societies became the shareholders of the factory. Consequently, in the following years, the number of shareholders and the amount of share capital increased. The share capital of the Government of Maharashtra, however declined to Rs. 11,00,000 in the year 1975-76 from Rs. 15,00,000 in 1962-63.

From Table 1.6 we can get an idea of the working of the factory. The crushing capacity of the factory was 1016 tonnes per day at the beginning which increased to 2000 tonnes per day by the year 1975-76. As the crushing



**Table 1.5. Share capital of the Sanjivani Co-operative Sugar Factory, Ltd., Sahajanandnagar**

Details	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69
<b>I. <u>No. of shareholders</u></b>						
1. Producer members	2848	2923	2998	2302	2331	2751
2. Co-operative Societies	36	39	39	40	45	49
3. Govt. of Maharashtra (Share Anamat)	650	444	375	-	-	-
<b>II. <u>No. of shares</u></b>						
1. Producers' share	10276	10531	10759	8478	8542	9619
2. Societies' share	248	252	252	254	260	264
3. Redeemable preference shares of the Government of Maharashtra	3000	3000	3000	2800	2600	2400
<b>III. <u>Share Capital</u></b>						
1. Producer members	2569000	2624250	2668750	2096750	2125000	4187125
2. Co-operative Societies	124000	126000	126000	127000	130000	132000
3. Government of Maharashtra	1500000	1500000	1500000	1400000	1300000	1200000
4. Shares Anamat	563678	705814	742722	674978	1763024	328725

Source: Annual Reports of the Factory from 1963-64 to 1975-76.

Table 1.5: contd.

Details	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76
<b>I. <u>No. of shareholders</u></b>							
1. Producer members	3051	3070	3113	3340	3789	3834	4026
2. Co-operative Societies	49	51	52	52	52	52	51
3. Government of Maharashtra (Share Anamat)	-	-	-	-	-	-	-
<b>II. <u>No. of shares</u></b>							
1. Producers' share	9946	11848	11848	12302	13305	13305	13603
2. Societies' share	264	266	268	268	268	268	228
3. Redeemable preference shares of the Government of Maharashtra	2400	2400	2400	2400	2200	2200	2200
<b>III. <u>Share Capital</u></b>							
1. Producer members	4341750	5160375	5639250	5913500	6338875	6376000	6498250
2. Co-operative Societies	132000	133000	134000	134000	134000	134000	114000
3. Government of Maharashtra	1200000	1200000	1200000	1200000	1100000	1100000	1100000
4. Shares Anamat	127780	1150042	1317951	1170947	809115	793336	714361

**Table 1.6.** The working of the Sanjivani Co-operative Sugar Factory, Ltd., Sahajanandanagar  
Years 1963-64 to 1975-76

Details	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69
1. Crushing Capacity per day (M.T.)	1016	1016	1016	1016	1016	1200
2. Date of starting season	10.11.63	20.10.64	10.10.65	20.10.66	23.10.67	15.10.68
3. Date of closing season	4. 3.64	10. 4.65	14. 5.66	29. 3.67	6. 4.68	4. 6.69
4. Total days of working	116	173	217	153	167	233
5. Cane crushed in M.T.	72382	145424	231197	173504	161559	253284
6. Recovery (% per M.T.)	10.833	11.457	11.231	11.293	10.948	11.01
7. Sugar production						
(a) White sugar (quintals)	43175	78315	205265	122075	134050	250135
(b) Raw sugar (quintals)	43415	91860	58255	73925	43105	28565
Total	86590	170175	263520	196000	177155	278700

Source: Annual Reports of the Sanjivani Co-operative Sugar Factory from 1963-64 to 1975-76.

Table 1.6: contd.

Details	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76
1. Crushing Capacity per day (M.T.)	1200	1200	1400	1400	1600	2000	2000
2. Date of starting season	2.11.69	5.10.70	5.10.71	1.10.72	7.10.73	20.10.74	20.10.75
3. Date of closing season	14. 5.70	21. 4.71	29. 4.72	11. 4.73	4. 4.74	10. 5.75	8. 5.76
4. Total days of working	194	199	208	193	185	221	194
5. Cane crushed in M.T.	232797	242472	249693	245942	244679	371504	330865
6. Recovery (% per M.T.)	11.198	11.96	10.64	10.40	10.45	10.89	11.01
7. Sugar production							
(a) White sugar (quintals)	206775	192660	235195	234450	222400	404015	365115
(b) Raw sugar (quintals)	54025	75515	31530	25425	34325	-	-
Total	260800	269175	266725	259875	256725	404015	365115

season of the factory depends upon the supply of sugarcane, there are fluctuations in the number of days of the crushing season. There are fluctuations in the recovery of sugarcane. During 1963-64 to 1972-73 the factory was producing both raw sugar and white sugar, but since 1974-75 the factory has been producing only white sugar.

FOOT-NOTES

1. Noel Deerr, History of Sugar, Vol. I, p. 41, 1949, Chapman and Hall, Ltd., London 37, Essex St. US.C.2.
2. Ibid., pp. 25-29.
3. Donald Shay, The Life of Lord Curzon, Vol. II, p.295, 1928, Ernest Benn Ltd., Bouverie Howe Fleet St., London.
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5. Inamdar, N.R., Government and Cooperative Sugar Factories, pages 1 and 2, 1965, Popular Prakashan, Bombay.
6. V. Malyadri, Socio-Economic Impact of Sugar Co-operative Factories, pages 1 and 2, 1975, Commerce Prakashan, Bombay.
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8. Y.J.Mohite, Sugar Industry of Maharashtra, A blue print, Published by Government of Maharashtra, Bombay, 1974, p. 3.
9. N.G.Bapat, op.cit., p. 310.
10. Gadgil, D.R., Peasant Owned Sugar Factory in Bombay State, Pravara Sahakari Sakhar Karkhana, Ltd., page 2 (year not quoted).
11. Ibid., p. 2.
12. The whole history of the Godavari Sugar Mills and the Changdeo Sugar Mills, is as narrated by Shri B.P.Shaha,

the Ex-Chemist of the Godavari Sugar Mills and the General Manager of the Changdeo Sugar Mills, to the author in a personal interview on 24-12-1974.

13. Ibid.

14. From the personal interview of Shri Bagaji Kondaji Deokar, Chief Promoter of the Sanjivani Co-operative Sugar Factory (25-5-1976).

## CHAPTER II

### REVIEW OF LITERATURE AND METHODOLOGY

2.1 It has already been pointed out that the sugar industry being the second largest organised industry in India plays a vital role in the economy of India, particularly in Maharashtra. It is situated in the rural area owing to the highly perishable nature of the raw material, i.e., sugarcane. The agro-industry leaves a deep impact on the rural economy. With the development in agriculture it is felt necessary to start and promote related agro-industries, because they not only convert the agricultural goods into finished product but also increase their value.

"The advent of industry makes for the evolution of social structure and way of life and above all, creates and continually reinforces the dynamic resilience of socio-cultural fabric so necessary for material and social progress. In the absence of industrialisation the forces of change remain weakened. Whatever, if any, betterment of human and material agents of development takes place is lost to the regional community through their emigration to industrialized regions. It is, therefore, necessary that along with the agricultural development, industrialisation of the region is initiated and promoted in a planned manner."<sup>1</sup>



2.2 Till now, a number of researchers have worked on sugar industry. In these research works they have studied various aspects such as the development, problems and prospects of the industry. Similarly, government policy and regional planning for sugar industry area, labour situation of the industry, impact of the industry on the lives of farmers and agriculture, the importance of sugar co-operatives in the rural economy and such other aspects of the industry also have been probed into. A brief review of the work done so far in this context is given below.

2.3 L.D. Deodhar studied labour in the sugar industry in 1950 with reference to Bombay Deccan.<sup>2</sup> In this thesis he has considered the problems of the labourers working in the sugar industry, their standard of living and welfare.

2.4 In 1951, P.M. Devekar studied "The Sugar Industry in Bombay Division."<sup>3</sup> In this study he explains the development of sugar factories and their various problems. He has also discussed the economics of sugarcane and sugar with reference to irrigation, transport, manufacturing, etc. Lastly, he explains the prospects of sugar industry in India. He also points out the necessity and importance of sugar co-operatives in the Indian economy.

2.5 At about the same time, B.P. Pendse<sup>4</sup> studied the large-scale industries of Maharashtra in which he gives

a historical account of sugar industry describing in detail its aspects such as capital, production, employment, etc.

2.6 In 1965, when sugar co-operatives became a significant part of the sugar industry, N.R. Inamdar<sup>5</sup> studied the policy of the Government of Maharashtra regarding sugar industry and the potential and practical difficulties in the way of further development of the sugar industry. In this study he considered the necessity of increasing sugar co-operatives in Maharashtra. The efforts of the State Government for the development of the industry in the co-operative sector and the help rendered by the institutions like Bombay Provincial Co-operative Bank, IFC, etc. are discussed therein. Apart from this, the Administration of the co-operative sugar factories was also studied.

2.7 In 1967, S.L. Shirodkar<sup>6</sup> produced his work on the "Co-operative Movement in Kolhapur District". In this context, he has analysed the impact of co-operative sugar factories on the agriculture of the region. According to him, "co-operative sugar factories have imparted stability to the agricultural income by paying reasonable and guaranteed price for a noticeable increase in production of sugarcane. Not only these factories provide the reasonable and guaranteed price, but also they provide various facilities to agriculturists. As the co-operative sugar

factories are agencies of rural economic development, the factories must be established in the backward area, so that the backward area can get a chance of its all around development."<sup>7</sup>

2.8 N.G. Bapat<sup>8</sup> worked on the Economic Development of Ahmednagar district in 1968. He deals with a brief history of sugar factories in the district. But he has not made any reference to the impact of sugar factories on the rural economy.

2.9 Mrs. Vimala Raghavachari<sup>9</sup> worked on "State and Indian Sugar Industry" in 1973. She has explained the impact of state policy on the development of the sugar industry, particularly with special reference to protection granted to the sugar industry in 1932 and 1956. She considered the problems faced by the industry from 1956 to 1970 with a view to suggesting a suitable long-term policy. The importance of co-operative sugar factories and prospects of sugar industry in future are studied, but no reference is made to the impact of sugar factories on the rural economy.

2.10 In 1976, N.S. Jain<sup>10</sup> worked on the "Regional Economic Planning in a Sugar Factory Area". Dr. Jain had selected the area of the Theur Co-operative Sugar Factory of Haveli taluka in Poona district. According to him, the area has not been developed with due consideration of the requirements of the modern technique of regional planning and the

needs of the region. Dr. Jain has attempted to study the proper demarcation of functions between the sugar factories and other local planning agencies and to determine the propriety of entrusting particular planning functions to an organization like a co-operative sugar factory. Apart from this he has also considered the problems of sugar industry and reference is made to the important aspects of the impact at the micro level such as impact on irrigation facilities, agricultural development, employment in rural area, etc. But the impact on farmers, industrial and agricultural labourers, non-agriculturists, trade and commerce, transport and communication etc. are not studied.

2.11 G.B. Andhale<sup>11</sup> completed his work on "A Study of Impact of Co-operative Sugar Factory on the Lives of Farmers with a special reference to Sangamner Bhag Saha-kari Sakhar Karkhana" in 1972. In this work, he has studied the impact of the sugar factory only on the lives of the producer shareholders of the factory. But it is also clear that non-shareholders are equally important in supplying the cane to the factory as indicated in Table 1.4, in Chapter I. It is, therefore, necessary to consider the impact on the lives of such non-shareholders also.

2.12 In 1975, V. Malyadri<sup>12</sup> analysed certain aspects of socio-economic impact of sugar co-operatives in general. According to him, a sense of consciousness among people

at all the levels has been developed due to the co-operative sugar factories. Every form of economic organisation should conform to the social aspirations and be socially accountable. The sugar co-operatives are encouraged and organized with Government patronage and public funds. This new function of processing sugarcane has initiated a certain reaction of development with far-reaching effects in the area of operation of sugar co-operatives.<sup>13</sup> In this study he has considered the impact of sugar factories on the pattern of cultivation relating to sugarcane cultivation only, not that of all crops. It would be useful to study how the acreage under the various crops has changed with the establishment of a sugar factory. The change in other aspects like irrigation facilities, mobilisation of rural savings, employment in rural area, labour welfare and growth of rural area are also studied in general by Mr. Malyadri. But the impact on other factors such as agriculturists, non-agriculturists, transport, communication, trade and commerce, etc., is not studied.

2.13 Apart from this, Prof. D.R. Gadgil<sup>14</sup> has enriched the literature of sugar co-operatives in Maharashtra with a series of articles on sugar co-operatives. Being a promoter of the co-operative movement, Prof. Gadgil has explained the importance of sugar co-operatives in the rural economy. He has attempted to analyse the impact

of sugar factories on the mechanization of agriculture with its overall development and on the expansion of transport facilities.

The various scholars have studied the various aspects of the sugar industry separately. It should be emphasized here that whenever a particular factory is established in a region, it influences the economy of the region in all its aspects from all the angles. Hence, it would be better to take into consideration the impact of a factory as a whole and not by parts. In the present thesis, in addition to the aspects already mentioned an attempt has been made to study the rural economy as a whole as influenced by the sugar factory in its area of operation.

#### 2.14 The Possible Backward and Forward Linkage Effects of a Sugar Factory

The change in the economy of a region due to the establishment of a sugar factory is the resultant of the backward and forward linkage effects. The main input of a sugar factory is sugarcane. Apart from this, a sugar factory requires other inputs like chemicals, labour, capital and transport facilities. On the output side, the sugar factory produces sugar as its main product. It can also produce alcohol, acid, paper, plywood, etc. Of these the Sanjivani Sugar Factory produces only alcohol. The factory also gets income from the sale of bagasse and

press-mud. The backward linkage effects come into existence due to the derived demand on the input side and forward linkage effects, due to the output utilization on the output side.

2.15 On the input side sugarcane is the main input of a sugar factory. Sugarcane being a cash crop, its importance has increased after the establishment of a sugar factory.

✓ The increase in the production of sugarcane, presumably initiates improvement in irrigation facilities, cropping pattern and hence an increase in the income and standard of living of the farmers. With the increase in the income the farmers can purchase modern implements of agriculture. They can adopt modern methods of farming. The cultivation of sugarcane and the changing cropping pattern can provide employment to agricultural labourers for more days in a year.

The transportation of sugarcane from the farms to sugar factory would provide seasonal employment nearly for six to seven months in a year for harvesting labourers coming from the neighbouring districts. This migration of labourers can result in the demand for consumer goods and for essential services in the region. The increased income of local farmers and agricultural labourers can add to the total demand for consumer goods and services. This can stimulate local trade and other occupations. The sugar factory may construct some link roads or get the

old roads repaired for quick transportation. This is likely to increase the number of vehicles and transport agencies.

The sugar factory would also provide additional and new employment opportunities for the local labourers. Thus some agricultural labourers would become factory labourers. As a result of this, the income of labourers may increase. This would also increase the demand for consumer goods and services. The use of chemicals for the manufacturing of sugar is likely to increase the number of dealers in chemicals in the urban area of the district. It can indirectly stimulate the production of the required chemicals. In case there is a cluster of sugar factories in a region it may lead to the establishment of industrial units producing complementary products.

Capital is an important input of sugar factories. The sugar factory based on co-operation may secure some portion of share capital from the local farmers and obtain the remaining share capital from institutional agencies like Industrial Finance Corporation and the Maharashtra State Co-operative Bank. In order to provide crop loans and long-term loans to the local farmers, the branches of some nationalized banks like the Central Bank of India, the Bank of Maharashtra and some branches of the Ahmednagar District Central Co-operative Bank were established in the region. The establishment of bank promotes the banking



habit among the people. This may result in increasing savings in the rural area.

Thus, on the input side, the possible backward linkage effects are many. They are: increase in the irrigation facilities, change in the cropping pattern, change in the method of farming and in the agricultural implements, increase in the income of farmers, immigration of harvesting labourers from dry areas, stimulation to the local trade and non-agricultural occupations by increasing demand for goods and services, development of transport, increase in the employment opportunities, increase in the income and standard of living of the local non-agriculturists, the development of bank business and therefore increase in capital accumulation, increase in the revenue of Government due to the sugarcane purchase tax paid by a sugar factory and so on.

2.16 On the output side sugar is the main product, and products such as alcohol, bagasse, press-mud are the by-products. The Government may levy excise duty on the production of sugar and alcohol. The sale of sugar may initiate an increase in the number of commission agents. The demand for cash credit by the Commission Agents may increase. This may result in the further development of bank business. Out of the profits of sugar factory the shareholders receive dividends. Moreover, a factory may spend on the various social activities such as education,

medical aid, dairy development, agricultural research and for the provision of irrigation facilities leading both to better human and physical capital.

The requirement of sugarcane transport and the transport of sugar and by-products may result mainly in the development of road transport. Export of sugar and alcohol out of this region may increase railway transport. In this way the output side of a sugar factory may have a far-reaching impact increasing the income of shareholders, the development of Banks, Government revenue, the number of commission agents of sugar, transport facilities and social welfare activities such as education, medical aid, dairy, and irrigation facilities. Thus, a sugar factory may emerge as a centre of economic development in a region. These possible forward and backward linkage effects are shown in the chart. An attempt has been made in this study to analyse some significant aspects of impact of a sugar factory on the rural economy.

2.17 The main objectives of this study are to analyse the impact of sugar factory on :

- (1) Agriculture in the region;
- (2) Income and standard of living of farmers in the region;
- (3) Working conditions and standard of living of sugar factory labourers and agricultural labourers;

- (4) Business of non-agriculturists and their income and standard of living;
- (5) Transport and communication in the rural area;
- (6) Social welfare activities in the rural economy.

2.18 Why is the Sanjivani Co-operative Sugar Factory Selected for the Study?

It is necessary to explain why a particular sugar factory viz., Sanjivani Co-operative Sugar Factory from the co-operative sector is selected for the study, though there are six sugar factories in the Kopargaon taluka of which three are in the private sector working on joint stock company basis. In the first place, we shall see why a sugar factory from the co-operative sector is selected and not from the private sector. A factory from the co-operative sector carries a good many benefits for agriculturists in general. On the contrary, a sugar factory in the private sector is run for the benefit of the shareholders who are normally non-agriculturists from the urban areas.

The private sugar factories have their own sugarcane farms, and hence they are not entirely dependent for the supplies of sugarcane on farmers. Though in 1962-63, the State Farming Corporation took over some land of the private sugar factories, the State Farming Corporation had been supplying sugarcane to the private sugar factories according to the agreement of 1962-63 signed between the State Government and the sugar factories. According to this agreement,

the Corporation was required to supply sugarcane at a fair price to the factories. The fair price is determined by a Committee appointed by the State Government known as the Fair Price Committee. The Committee consists of the representatives of the State Government, the Corporation and one representative of the private sugar factories.<sup>15</sup> As a result of this, there was not sufficient demand for the sugarcane of cultivators. They were forced to produce gur. The production of gur represented loss in the earnings of farmers and the farmers lost their interest in the cultivation of sugarcane.

The establishment of a co-operative sugar factory increased the possibilities of enhancing the mutual benefits arising out of sugar production. It can be said that these benefits percolate to the level of the member farmers of the co-operative sugar factory. This proved to be a boon to the farmers of the region in general and sugarcane growers in particular. The farmers now can be confident that they will get a fair return on their produce owing to the co-operative establishment. With the growth of the co-operative sector a link between the farmers and the factory has been established. So the co-operative sugar factories have more and direct impact on the rural economy than the private sugar factories. It is for these reasons that the sugar factory from the co-operative sector is selected for the study.

2.19 Next come the reasons for considering the Sanjivani Co-operative Sugar Factory from among the three co-operative sugar factories of Kopergaon taluka for this study. The reasons are as follows:

(1) The Sanjivani Cooperative Sugar Factory was established recently i.e. just 15 years ago. On the contrary, other factories were established nearly 25 to 35 years ago. It is difficult to take such factories for the purpose of the survey as they were established long back. The selection of this factory for the purpose of the study was made on the grounds of easy and greater availability of reliable data.

(2) Secondly, it is found that though the factory is established in the recent past, it has developed itself quite efficiently and secured a sound financial position comparable to the other sugar factories. For instance, the crushing capacity of the factory was 1010 MT in the beginning. This has increased to 2000 MT in 1974-75, while in the case of Kopergaon Co-operative Sugar Factory and the Ganesh Co-operative Sugar Factory, the crushing capacity was 1000 MT each at the beginning and it increased to 1750 MT (Table 1.4). This is one of the facts indicating the efficiency of the Sanjivani Sugar Factory. Such a factory is likely to have a significant impact on the rural economy. For these reasons, this particular factory is selected for this study.

## 2.20 Selection of Villages for the Survey

For the purpose of this study 15 villages were selected from the feeding centres of the Sanjivani Co-operative Sugar Factory. The feeding centres are the villages supplying sugarcane to factories. With the rapid growth of the sugar factories in between 1951 and 1962 there arose a cut-throat competition among the sugar factories to obtain sugarcane from the different feeding centres. This competition had affected the cost of production of sugar adversely. In order to avoid all these troubles the Government issued an order viz., 'The Sugarcane Control Order' in 1966 which distributed the sugarcane supplying villages i.e. the feeding centres, among the factories.

According to the sugarcane control order, there are 89 villages in the area of operation of this factory.<sup>16</sup> Of these villages, 23 are from the neighbouring talukas such as Sinnar, Niphad and Yoela. These talukas are in the Nasik district. The remaining 66 villages are from the Kopargaoon taluka. Out of these villages from Kopargaoon taluka, 56 villages constitute the common feeding centres for Kopargaoon Cooperative Sugar Factory and Sanjeevani Co-operative Sugar Factory. The remaining 10 villages only, from Kopargaoon taluka constitute exclusively feeding centres of the Sanjivani Co-operative Sugar Factory. So these ten villages are selected for the purpose of this study. The names of these villages are: Apegaon, Nategaon,

Ogadi, Kasali, Godhegaon, Anchalgaon, Tilawani, Shirasgaon and Ukkadgaon.

Two villages Takali and Singanapur constitute the common feeding centres for two factories, Kopargaon and Sanjivani. These are also selected for this survey.

Takali village is selected because the farmers of the village are promoters of the Sanjivani Sugar Factory. The number of shareholders of the factory from the village is very high.<sup>17</sup> The factory is therefore known also as the Takali Co-operative Sugar Factory. Thus the Takali village is a leading village in the area of operation of the factory. As for Shinganapur, it is selected on the basis of the location of the Sanjivani Sugar Factory. The factory is situated within the area of the Shinganapur village.

Furthermore, some villages are selected for survey which were not included in the sugarcane control order of the Government of Maharashtra, presumably because these villages were not producing any significant quantity of sugarcane upto 1965-66. The names of the villages are also from Kopargaon taluka. The Sanjivani Sugar Factory has included these villages in its area of operation by changing the bye-laws of the factory. Thus, in all, 15 villages are selected on different grounds to find out the impact of the Sanjivani Sugar factory. The villages selected for survey are shown in the map of Kopargaon taluka.

2.21 Data regarding the number of agriculturists, share-

holders of the sugar factory, agricultural labourers and non-agriculturists in the selected villages are shown in Table 2.1. The selected villages are arranged alphabetically in this table. The cultivators, agricultural labourers, non-agriculturists, and the shareholders are defined in the following manner:

(1) Cultivators: Cultivators are the persons who have their own land and are tenants on other people's land and who are engaged among other tasks, in ploughing, sowing, harvesting and production of cereals, pulses, fibre crops, etc. The persons who are engaged in cultivating land in this sense for larger part of year and obtain more than 50 per cent of income from land are included in this category.

(2) Agricultural Labour: Those who do not own any land but work on others' lands for their livelihood are called agricultural labourers. The tenants and the cultivators engaged for larger part of the year on the lands of others and who get more than 50 per cent out of the total income by way of wages for manual labour on land are also considered as agricultural labourers.

(3) Non-agriculturists: People working in household industries such as carpentry, shoe-making, rope-making, dairy, poultry, tailoring, grocery, barber-shop, transport, hotel, etc., come under this category. The persons who have been working in other services such as railway, post,



**Table 2.1. Total number of agriculturists, non-agriculturists, agricultural labourers, and shareholders in the selected villages (1975-76).**

Sr. No.	Name of the village	No. of agriculturists having land				No. of shareholders of the sugar factory *	No. of agricultural labourers	No. of non-agriculturists
		Upto 5.00 acres	5.1-15.0 acres	Above 15.1 acres	Total No. of agriculturists			
1	Anchalgaon	58	40	17	115	12	51	18
2	Apegaon	50	49	21	120	7	124	21
3	Godhegaon	27	60	29	116	20	139	47
4	Kasali	55	60	40	115	10	52	18
5	Khopudi	40	36	26	102	-	50	11
6	Lauki	49	45	17	111	-	80	8
7	Nategaon	58	47	35	140	11	64	27
8	Ogadi	20	50	21	91	2	49	11
9	Savalgaon	20	29	10	59	3	34	3
10	Shinganapur	97	57	13	167	37	476	136
11	Shirasgaon	102	69	23	194	3	69	11
12	Takali	133	95	22	250	113	734	116
13	Talegaon-male	47	103	46	196	-	64	17
14	Tilawani	54	75	23	152	-	30	19
15	Ukkadgaon	52	99	76	157	11	49	25
Total		898	915	419	2195	239	1975	488

Source: The record provided by the Kamgar Talathis of these villages.

\* The data regarding the shareholders of the factory are obtained from the list of shareholders published by the Sanjivani Co-operative Sugar Factory on 30-7-1973.

school, colleges having more than 50 per cent of their total income from non-agricultural occupations are included in this category.

(4) Shareholders: This category comprises the producer members of the Sanjivani Co-operative Sugar Factory.

#### 2.22 Sugar Factory Labourers

Persons employed in the sugar factory are included in this category. The employment may be of permanent, temporary or seasonal nature. The number of workers employed in the Sanjivani Co-operative Sugar Factory is shown in Table 2.2.

The various categories of workers can be defined as under:

- (A) Permanent: Workers who get full-time job for the whole year.
- (B) Temporary: Workers who get work for some days of the year especially in crushing season and sometimes in off season. The workers do not get retention allowance during the off season or period.
- (C) Seasonal: Workers employed only in crushing season. The workers get retention allowance during the off season. Immigrant seasonal harvesting labour is not included in it.

#### 2.23 Attempt to separate the overall impact of the sugar factory from other impacts

The object of the study is to analyse the overall

**Table 2.2. Labourers employed in Sanjivani Co-operative sugar factory in 1975-76**

Sr. No.	Name of the factory-section	Perma- nent	Tempo- rary	Sea- sonal	Total
1	Mill section	13	-	-	13
2	Workshop	30	-	-	330
3	Boiler section	13	15	-	28
4	Boiling house	30	-	-	30
5	Manufacturing	26	-	171	197
6	Engineering	15	-	101	116
7	Civil	10	-	-	10
8	Electric	34	-	-	34
9	Account	34	4	-	38
10	Agriculture	33	20	-	53
11	Garage	37	8	2	47
12	General office	18	4	47	69
13	Watch and Ward	29	2	18	49
14	Time office	6	-	2	8
15	Sanitation	9	1	-	10
16	Store	10	-	2	12
17	Cane yard	3	-	29	32
18	Sugar godown and house	2	-	40	42
19	Press-mud	-	-	9	9
20	Chuna-bhatti	-	-	9	9
21	Guest house	5	1	-	6
22	Gavhan	-	-	28	28
23	Others	9	-	-	9
Total		366	55	458	879

**Source:** Record provided by the Time Office of Sanjivani Co-operative Sugar Factory.

economic impact of the sugar factory on the rural economy. The problem of quantifying the economic impact exclusively of a sugar factory in a given area is very complicated. As a result of general and specific economic measures undertaken by the Central, State and local governments there might have occurred some economic transformation in the given area even without the establishment of a sugar factory. Apart from this, each area develops in the natural course; but natural development takes place in the long run i.e. more than 25 to 30 years. It cannot be experienced in a short period. Therefore we need not consider it here in the short-period context, but it is necessary to consider the development brought about by the Government and other agencies.

2.24 Two possible approaches can be made use of to distinguish between the economic impact generated by the installation of sugar factory and that brought about by the measures undertaken by the Government and voluntary institutions. Firstly, we take two different areas at a period of time and measure their respective levels of economic achievement. Suppose that at this point of time in one area a sugar factory was installed, whereas in the second area no sugar factory was installed. When the sugar factory is fairly developed, we again measure the respective levels of economic achievement at a second point of time in the two areas. The area without sugar factory is sup-

posed to grow in a normal manner under the impact of general measures undertaken by the Central, State and Local Governments. The difference between the level of economic development of the area with the sugar factory and the area without sugar factory, can be identified as the net impact of the sugar factory in the region. This approach is useful for our purpose. But there are two main difficulties in the adoption of this approach.

Firstly, the two areas at the first point of time must be homogeneous in all respects, viz., climate, soil, irrigation, population, etc. Moreover, it has also to be assumed that the area without the sugar factory does not attract or develop any other type of manufacturing concern. But the two areas can not be homogeneous at a point of time. The second difficulty is that this approach requires, for comparison, coverage of large areas both with sugar factory and without sugar factory. This is beyond the capacity of an individual research worker on account of constraints such as time, money, and so on.

2.25 The second alternative is to analyse the level of economic achievement of an area with a sugar factory, at two points of time, i.e., firstly, before the sugar factory is established and secondly, sufficiently after the establishment of a successful sugar factory. The economic development in the area of sugar factory during this period may be partly due to the factory and partly due to the

general measures of economic development adopted by Central, State and local governments. Attempt should be made to identify the impact of the specific measures in relation to that of the sugar factory. Similarly, while separating the impact of a sugar factory one has to take into account the effect of the other factors such as the effect of the infrastructure provided by the Government for industrialization in the region and the impact of manufacturing concern or any other project undertaken by the Government or any other agency, which may affect the economic conditions of the region. After separating these effects, we can realise the real impact of the sugar factory.

Of course, in this approach also it is very difficult to separate the exclusive impact of the sugar factory from the total impact. In case it is found that the impact of the sugar factory cannot be separated easily from the total impact of all the economic measures adapted, then one should analyse the factor mainly and evidently responsible for the economic change in the region. After taking into consideration the significance of the factor in relation to the impact one should say that a change is due to the particular factor. If a factor is the major cause of bringing about the economic change in the region, it becomes the main source of the impact.

2.26 While analysing the impact of the Sanjivani Co-operative Sugar Factory in its area of operation the second

approach is adopted. It should be noted that the infrastructure in the region provided by the government (transport and irrigation) long before the establishment of the sugar factory remained almost unchanged. The meagre means of communication like post and telephone office have been provided for the area after the establishment of the sugar factory. This increase in the means of communication is also the result of the sugar factory (Table 8.8, Chapter VIII). The infrastructure growing in this region is given below.

(i) Transport and Communication: Prior to the establishment of the sugar factory some roads had already been constructed. For instance, the Manmad-Daund State highway passes through Kopergaon. There were some major district roads such as Sangamner-Kopergaon via Talegaon, Kopergaon-Shrirampur via Puntamba and Kanhegaon, Kopergaon-Shinganapur and Kopergaon-Dharangaon. Apart from these roads, there were some other district roads like Kopergaon railway station to Padhegaon and Samvatsar to Bhojade Chowki. There has been no increase in the number of these roads or in their length, nor in the length of railway track in the region after the establishment of the factory.<sup>18</sup> The village roads and link roads constructed in this region by the sugar factory are shown in Table 8.2 in Chapter VIII.

(ii) Irrigation: Irrigation facilities were first

provided in this region in 1915-16 by constructing the left bank and the right bank canals on the Godavari river.<sup>19</sup> After the establishment of the sugar factory only well and lift irrigation facilities have increased.<sup>20</sup>

(iii) Power: By the end of 1964 only four municipal towns, viz., Ahmednagar, Kopargaon, Shrirampur, Sangamner and one village viz. Belapur (Bk.) were electrified by the Maharashtra State Electricity Board.<sup>21</sup> All the sugar factories made provisions for their own electricity requirements. From this it is clear that the electrification in the rural area took place only after 1964. The sugar factory has been trying to complete the work of rural electrification with the help of the Maharashtra State Electricity Board<sup>22</sup> as we shall see later.

From the situation mentioned above, it is clear that whatever infrastructure existed in the region, was completed long before the establishment of the sugar factory. At the first point of data the impact of the infrastructure is already measured. So there is no necessity of analysing and separating the impact of infrastructure at the second point of time. In the same way there is no problem of separating the impact of other manufacturing concerns, or any other important project as there has been no such project established in this region. The alcohol factory and other types of production units such as dairy, have come into existence by way of secondary effects of this



sugar factory.<sup>23</sup> During the village survey it is observed that even a single Village Panchayat has not reported any significant project either of production or of irrigation sanctioned by the Government. This makes it easier to separate the overall impact of the sugar factory from the total impact of all the measures of economic development.

### 2.27 Methodology

In the foregoing paragraphs we have discussed two approaches regarding the methodology applicable to this study. Taking into consideration different limitations of the first approach, the second approach is adopted for the study. The details are as given below:

In order to find out the impact of sugar factories on the rural economy some experts who have been working in the field of sugar industry were interviewed. Some of the interviewed experts are officers in the sugar factory and some of them are agriculturists. The work of interviewing these experts was completed during March 1974 to June 1974 (Appendix I). Then the collected information from the interviews was analysed and accordingly questionnaires were prepared for the survey. The questionnaires of five types were prepared for the interviews being administered to farmers, agricultural labourers and factory labourers, sarpancha of selected villages, non-agriculturists and the sugar factory (Appendix IV). The main survey was preceded by a small survey in which the hypothesis of a substantial

impact of sugar factory on rural economy was tested. Subsequently the questionnaires were finalised on obtaining a positive result.

It was decided to follow the random sampling system for the survey. For the selection of random numbers, the lists of farmers, non-agriculturists, agricultural labourers, were obtained from the Kangar Talathi of each village. The list of the workers of the Sanjivani Sugar Factory was obtained from the Time Office of the factory. The names were arranged alphabetically. Out of the total number of farmers, non-agriculturists, agricultural and sugar factory labourers, 10 per cent of each were selected. Thus, 239 farmers, 204 agricultural labourers, 51 non-agriculturists, and 87 sugar factory labourers were selected. The Sarpanch of each village was interviewed. Thus, 15 sarpanchas were interviewed. Questionnaire No. 4 was prepared to collect the data from the record of the sugar factory.

The work of survey was completed in three rounds. The first round was completed in 1974-75 that is between 15th October 1974 and 14th November 1974 and between 16th March 1975 and 14th June 1975. In the first round, the data regarding crushing capacity, shareholders, capital, labourers, production, etc. was collected from the sugar factory. The second round was started on 2nd April 1976 and finished on 27th April 1976. In this round the selected agriculturists were interviewed.

The third round of the survey was conducted between the period of 7th May 1976 to 12th June 1976. In this round the non-agriculturists, sugar factory labourers and Sarpanchas of villages were interviewed. The data relating to two points of time viz., before the establishment of the sugar factory (1961-62) and sufficiently after the establishment of the sugar factory (1975-76), were collected in this survey.

2.28 The Difficulties Experienced at the time of conducting survey

In the first round of the survey no difficulty was experienced mainly because the staff of the Sanjivani Sugar Factory helped a lot in the collection of relevant information. In the case of the second round, many a time, it so happened that some agriculturists, selected as per random numbers could not be met because of their absence during the author's visits. For instance, in Takali, Shrirasgaon, Shinganapur, Godhegaon and Ogadi villages the author could not meet 15 agriculturists. Therefore, some other agriculturists, who were in the same categories were interviewed.

The second difficulty was that some farmers were unable to answer the questions asked in the questionnaire especially about income and expenditure, while some of them were reluctant to answer the questions. In such cases the author has tried to solve the difficulty by taking information from their relatives who were living in the same village,

as well as from their neighbours, Sarpanch and Kamgar Talathi of the village. Nearly 25 cases were of this type. In the case of the information regarding loan, a good many farmers have not given correct information.

In the third round the author did not experience much difficulty. The non-agriculturists and industrial labourers gave the necessary information in a satisfactory manner. The agricultural labourers also furnished the required information. Some agricultural labourers, selected according to the random sampling system, were not available in this round. Some other agricultural labourers were selected from the villages. Sometimes it also happened that more than one person were selected from a family under the random number. In such cases one person from a family was selected.

## 2.29 Data Processing

The data was scrutinized for inconsistency and was transferred on 40 column punch cards and processed at the Gokhale Institute of Politics and Economics, Poona. One card per individual was prepared under different designs for agricultural and non-agricultural schedules. Most of the data in both the types of schedules was codified using numeric code numbers except for area and production of cropwise data. The data was listed and processed manually. For data on cards ICL 40 column equipment including sorters and tabulators were used. Besides the survey data some additional data such as commoditywise prices were collected from Marketing Committee,

Kopargaon, and the information about wells, tanks and of various crops was collected from the Tehasildar's Office at Kopargaon, the Manager of KOSANG Distillery and the Manager, Godavari Khore Milk Producers' Sangh. The data collected from the Sanjivani Sugar Factory and other Sugar Factories of the taluka did not require much processing because some data were already sorted out at the time of collection. The data collected in schedule No. 5 was sorted out and processed manually.

FOOT-NOTES

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## CHAPTER III

### PROBABLE IMPACT OF THE SUGAR FACTORIES ON AGRICULTURE

3.1 The sugar industry, being an agro-based industry, has presumably influenced the process of intensification of agricultural operations in the area of the Sanjivani Co-operative Sugar Factory. This influence, which is a part of economic impact, examined by the changes in quantity and quality of agricultural inputs used in the area between two points of time, viz., 1961-62 and 1975-76. While analysing the impact on agriculture and agriculturists the farmers are classified into four groups according to their land holdings. These groups are: (i) Landholdings upto 5.00 acres, (ii) landholdings between 5.1 and 10.00 acres, (iii) landholdings between 10.1 and 15.00 acres, and (iv) landholdings from 15.1 acres and above. Since we shall be required to use this classification in several contexts below we may for the sake of convenience designate these classes respectively as "Marginal", "Small", "Medium", and "Big" farmers.

3.2 In the Kopargaon taluka some land is brought under irrigation with the help of left and right bank canals of the Godavari river. However, most of the land was unirrigated and depended on the vagaries of monsoon. The sugar factory is trying to increase the total acreage under irrigation.



It has constructed some lift irrigation dams, percolation tanks and community wells. These irrigation schemes are discussed in detail in Chapter VIII.

The sugar factory has been advancing loans to the farmers for the construction of new wells and for the repairs to the old unused wells. A majority of the shareholders of the sugar factory holds 1 to 3 acres of land and many of them grow sugarcane on well irrigation. Due to lack of finance, it is often not possible to carry out repairs to old wells or to dig new wells. In this context, in order to facilitate a flow of credit through banks for construction of wells, the sugar factory has been acting as guarantee to the loans advanced by the Central Bank of India, Land Development Bank, and the Ahmednagar District Central Co-operative Bank. Hundreds of cultivators have taken advantage of the scheme of loans for construction of wells. The factory has also been providing boring unit facility for construction of wells. It has resulted in the increase of sugarcane cultivation.<sup>1</sup>

To speed up the process of credit finance under the scheme, the factory has established a special mechanism for the purpose. The decisions regarding the loan proposal were taken quickly by the advisory committee, formed by seven directors of the sugar factory. The Committee was supervising the day-to-day working of the scheme. This mechanism has succeeded in securing credit worth Rs. 45 lakhs for the

farmers so far. Consequently the area under sugarcane cultivation has increased.<sup>2</sup> Under this scheme, the sugar factory advanced loans for the repairs of 819 old wells and for digging 397 new wells up to the year 1971.<sup>3</sup>

3.4 Data regarding irrigated and unirrigated land at the two points before and after the establishment of the sugar factory, collected in the survey, is presented in Table 3.1.

The total land under cultivation in the surveyed area was 2519.9 acres which has increased upto 2578.1 acres i.e. by 2.31 per cent. It means some fallow land had been brought under cultivation. Before the establishment of the sugar factory, the irrigated area was 840.00 acres which increased to 1068.8 acres in 1975-76. It means 27.24 per cent more area is brought under irrigation. The proportion of irrigated area has changed to 41.46 per cent of the gross cultivated area in 1975-76 from 33.33 per cent in 1961-62.

3.5 Though the factory has constructed some lift irrigation projects in its area of operation, no lift irrigation project is located in the surveyed area. In this area the acreage under well irrigation has increased from 27.29 per cent of the gross cultivated area to 35.06 per cent in the later period. The acreage under canal irrigation has also increased, but the increase is not very significant, i.e. from 6.04 per cent to 6.40 per cent. As for increase of well and canal irrigation, we find from the table that the area under well irrigation has increased by 31.44 per cent

**Table 3.1. Irrigated and unirrigated land before (1961-62) and after (1975-76) the establishment of the sugar factory (area in acres)**

Particulars  (1)	Land irrigated under			Total irrigated area (acres) (5)	Unirrigated area (acres) (6)	Gross cultivated area (acres) (7)
	Wells (acres) (2)	Canal (acres) (3)	Other sources (acres) (4)			
Before	687.7 (27.29)	152.3 (6.04)	-	840.00 (33.33)	1679.9 (66.67)	2519.9 (100.00)
After	903.9 (35.06)	164.9 (6.40)	-	1068.8 (41.46)	1509.3 (58.54)	2578.1 (100.00)
Net increase (+) or decrease(-) in the area	+216.2 (31.44)	+12.6 (8.27)	-	+228.8 (+27.24)	-170.6 (-10.16)	+ 58.2 (+2.31)

(Figures in parenthesis indicate percentages to the gross cultivated area in column 7).

as compared to what it was before the establishment of the sugar factory. In the case of canal irrigation there is a net increase of acreage by 8.27 per cent. The net increase in the area under irrigation is by 27.24 per cent. Thus the data from Table 3.1 suggests that the establishment of sugar factory has led to an increase in the acreage under irrigation.

We have seen that the total area under irrigation has increased mainly because of the increase in well irrigation. The increase in the well irrigation is clearly shown by the data given in Table 3.2. In this table the number of wells in good condition and the wells not in use are given according to the size groups of holding, before and after the establishment of the sugar factory.

3.6 Prior to the establishment of the sugar factory, the total number of wells in good condition was 126. The number of wells increased upto 166 long after the sugar factory came into existence i.e. in the year 1975-76. With this increase the number of wells not in use has also increased from 22 to 24. The number of wells in good condition increased by 31.75 per cent as against 4.55 per cent in the case of wells not in use. The old wells become dilapidated over a long period and also due to natural calamities like famine, earthquake etc., which has resulted in the increased number of unused wells.

The proportion of wells in good condition to the total

Table 3.2. Number of wells before (1961-62) and after (1975-76) the establishment of the sugar factory

Land holding group	No. of families in the group	Point of time	Number of wells in good condition	Number of wells not in use
Upto 5.00 acres (Marginal)	92	Before the sugar factory	38	9
		After the sugar factory	58	8
		Increase or decrease	+20	-1
		Percentage change	+52.62	-11.22
5.1 to 10.00 acres (Small)	60	Before the sugar factory	28	3
		After the sugar factory	38	4
		Increase or decrease	+10	+1
		Percentage change	+35.70	+33.33
10.1 to 15.00 acres (Medium)	37	Before the sugar factory	21	3
		After the sugar factory	25	3
		Increase or decrease	+4	Nil
		Percentage change	+19.05	Nil
15.1 acres and above (Big)	50	Before the sugar factory	39	7
		After the sugar factory	45	9
		Increase or decrease	+6	+2
		Percentage change	+15.38	+28.57
Total	239	Before the sugar factory	126	22
		After the sugar factory	166	24
		Increase or decrease	+40	+2
		Percentage change	+31.75	+4.55

wells owned by the big landholders (category 4) was more than that of the relatively smaller (i.e. the other three categories) landholders prior to the establishment of the sugar factory. After the establishment of the sugar factory the number of wells owned by the group of relatively smaller landholders has increased proportionately as compared to those owned by the large landholders. The increases in the percentage of wells in the different size-groups of holdings are shown in Table 3.2. For instance, the percentage changes for the marginal, small, medium and big landholders are respectively 52.62 per cent, 35.70 per cent, 19.05 per cent and 15.38 per cent. Thus smaller the landholding, the larger will be the percentage increase in the number of wells-in-use.

3.7 The number of wells not in use decreased by 11.22 per cent in the case of marginal landholders. It remained the same for medium farmers. However, its proportion to all wells has evidently decreased. It means that after the establishment of the sugar factory, the relatively smaller landholders constructed more wells than the larger ones. Prior to the establishment of the sugar factory many large landholders already had wells in good condition and probably therefore they did not find any need for construction of additional wells.

3.8 Increase in the number of wells can be attributed to two factors. Firstly, with the establishment of the sugar factory the small farmers started cultivation of sugarcane.

As compared to other crops like wheat, jowar, bajra, cotton, groundnut, etc., sugarcane requires more water supply. Only if sugarcane gets adequate water supply, it gives higher returns. In order to obtain more tonnage per acre, the small farmers started digging wells. Credit facilities on the guarantee of the sugar factory were made available by the Central Bank of India<sup>4</sup> for this and other purposes like installation of syphons for watering fields. Secondly, many small landholders could take advantage of the credit facility provided by the factory itself for digging new wells. Thus, the number of wells and well irrigation increased in the region.

In agricultural production water forms an important input. Its immediate impact can be grasped by way of change in the cropping pattern which is analysed below.

### 3.9 Change in the Cropping Pattern

Before the establishment of the sugar factory, the farmers in the region were cultivating mainly jowar, bajra and wheat. Although they still produce these crops on a large-scale, acreage under these crops has decreased. Table 3.3 shows the change in the acreage under various crops after the establishment of the sugar factory in the region.

Previously, the cultivated area in the villages surveyed was 2519.9 acres which increased to 2578.1 acres at the later time point after the installation of the

Table 3.3. Change in the area under various crops, before (1961-62) and after (1975-76) the establishment of Sugar Factory in the surveyed villages (The figures are in acres)

Size Group of Holding	(1) Jowar/Bajra			
	Before	After	Difference	Percentage change
1. Upto 5.00 acres (Marginal farmers)	206.34	179.87	-27.47	-13.31
2. 5.1 to 10.00 acres (Small farmers)	298.35	274.85	-23.50	- 7.88
3. 10.1 to 15.00 acres (Medium farmers)	321.20	301.65	-19.55	- 6.08
4. 15.1 acres and above (Big farmers)	1004.00	950.75	-53.25	- 5.30
Total areas of each crop	1829.89	1707.76	-122.13	- 6.67
Percentage of the gross cultivated area	72.61	66.24		
Size Group of Holding	(2) Wheat			
	Before	After	Difference	Percentage change
1. Upto 5.00 acres (Marginal farmers)	84.91	81.91	- 3.00	- 3.53
2. 5.1 to 10.00 acres (Small farmers)	104.75	90.00	-14.75	-14.08
3. 10.1 to 15.00 acres (Medium farmers)	102.45	85.00	-17.45	-17.03
4. 15.1 acres and above (Big farmers)	210.71	200.50	- 8.79	- 4.17
Total area of each crop	502.82	457.41	-45.41	- 9.03
Percentage of the gross cultivated area	19.95	17.74		



Table 3.3: Contd.

Size Group of Holding	(3) Sugarcane			
	Before	After	Difference	Percentage change
1. Upto 5.00 acres (Marginal farmers)	14.63	50.38	+ 35.65	+243.68
2. 5.1 to 10.00 acres (Small farmers)	15.5	47.75	+ 32.25	+208.06
3. 10.1 to 15.00 acres (Medium farmers)	16.25	74.25	+ 57.93	+356.49
4. 15.1 acres and above (Big farmers)	44.50	128.50	+ 84.00	+188.76
Total area of each crop	90.88	300.88	+210.20	+231.29
Percentage of the gross cultivated area	3.61	11.67		
Size Group of Holding	(4) Fruits			
	Before	After	Difference	Percentage change
1. Upto 5.00 acres (Marginal farmers)	9.75	8.05	-1.70	-17.43
2. 5.1 to 10.00 acres (Small farmers)	5.50	8.40	+2.90	+52.72
3. 10.1 to 15.00 acres (Medium farmers)	0.25	1.50	+1.25	+500
4. 15.1 acres and above (Big farmers)	13.50	13.50	-	-
Total area of each crop	29.00	31.45	+2.45	+ 8.45
Percentage of the gross cultivated area	1.15	1.22		

Table 3.3: contd.

Size Group of Holding	(5) Vegetables			
	Before	After	Difference	Percentage change
1. Upto 5.00 acres (Marginal farmers)	2.65	5.65	+ 3.00	+113.20
2. 5.1 to 10.00 acres (Small farmers)	3.43	5.20	+ 1.77	+ 51.60
3. 10.1 to 15.00 acres (Medium farmers)	7.75	9.75	+ 2.00	+ 25.80
4. 15.1 acres and above (Big farmers)	11.25	16.00	+ 4.75	+ 42.22
Total area of each crop	25.08	36.60	+11.51	+ 45.89
Percentage of the gross cultivated area	1.00	1.42		
Size Group of Holding	(6) Groundnut			
	Before	After	Difference	Percentage change
1. Upto 5.00 acres (Marginal farmers)	2.17	1.00	- 1.75	-63.64
2. 5.1 to 10.00 acres (Small farmers)	3.5	2.00	- 1.5	-42.85
3. 10.1 to 15.00 acres (Medium farmers)	2.5	4.00	+ 1.50	+60.00
4. 15.1 acres and above (Big farmers)	8.00	9.00	+ 1.00	+12.50
Total area of each crop	16.75	16.00	- 0.75	- 4.47
Percentage of the gross cultivated area	0.66	0.62		

Table 3.3: contd.

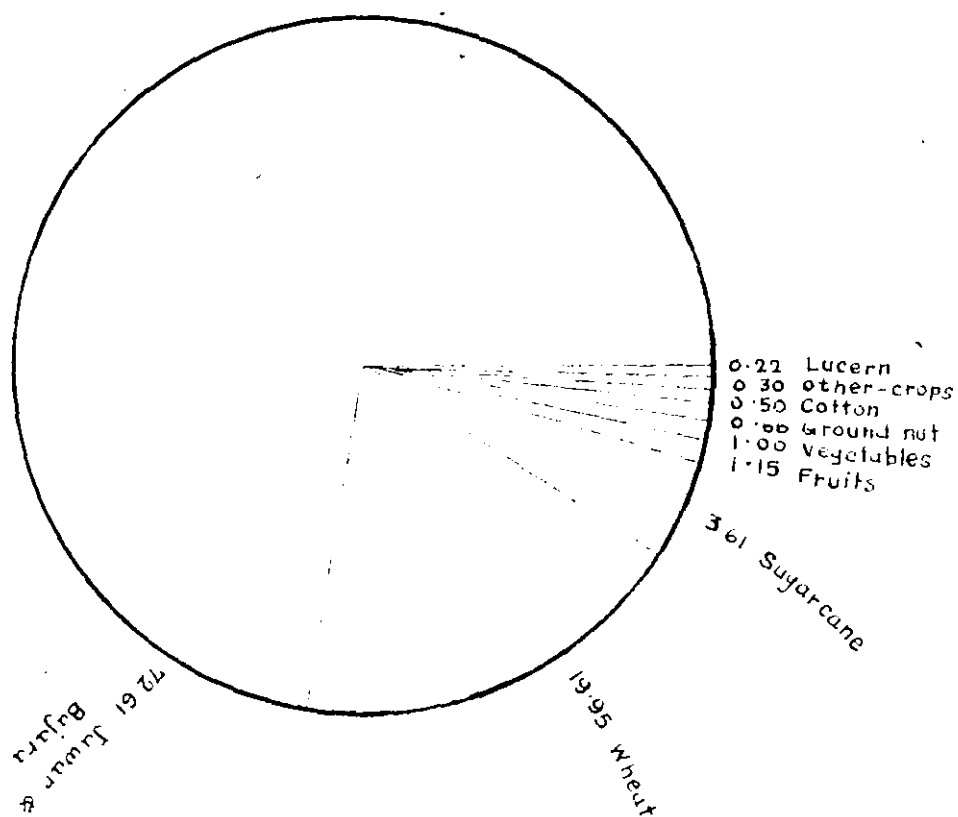
Size Group of Holding	(7) Cotton			
	Before	After	Difference	Percentage change
1. Upto 5.00 acres (Marginal farmers)	-	-	-	-
2. 5.1 to 10.00 acres (Small farmers)	2.5	5.00	+ 2.5	+100.00
3. 10.1 to 15.00 acres (Medium farmers)	3.00	1.00	- 2.00	- 66.67
4. 15.1 acres and above (Big farmers)	7.00	6.00	- 1.00	- 12.50
Total area of each group	12.50	12.00	- 0.50	- 4.00
Percentage of the gross cultivated area	0.50	0.47		
Size Group of Holding	(8) Others (Rice, maize, grain, etc.)			
	Before	After	Difference	Percentage change
1. Upto 5.00 acres (Marginal farmers)	0.23	0.25	+ 0.02	+ 8.69
2. 5.1 to 10.00 acres (Small farmers)	-	-	-	-
3. 10.1 to 15.00 acres (Medium farmers)	2.00	3.00	+ 1.00	+50.00
4. 15.1 acres and above (Big farmers)	5.25	7.00	+ 1.75	+33.33
Total area of each crop	7.48	10.25	+ 2.77	+37.97
Percentage of the gross cultivated area	0.30	0.40		

Table 3.3: Cohtd.

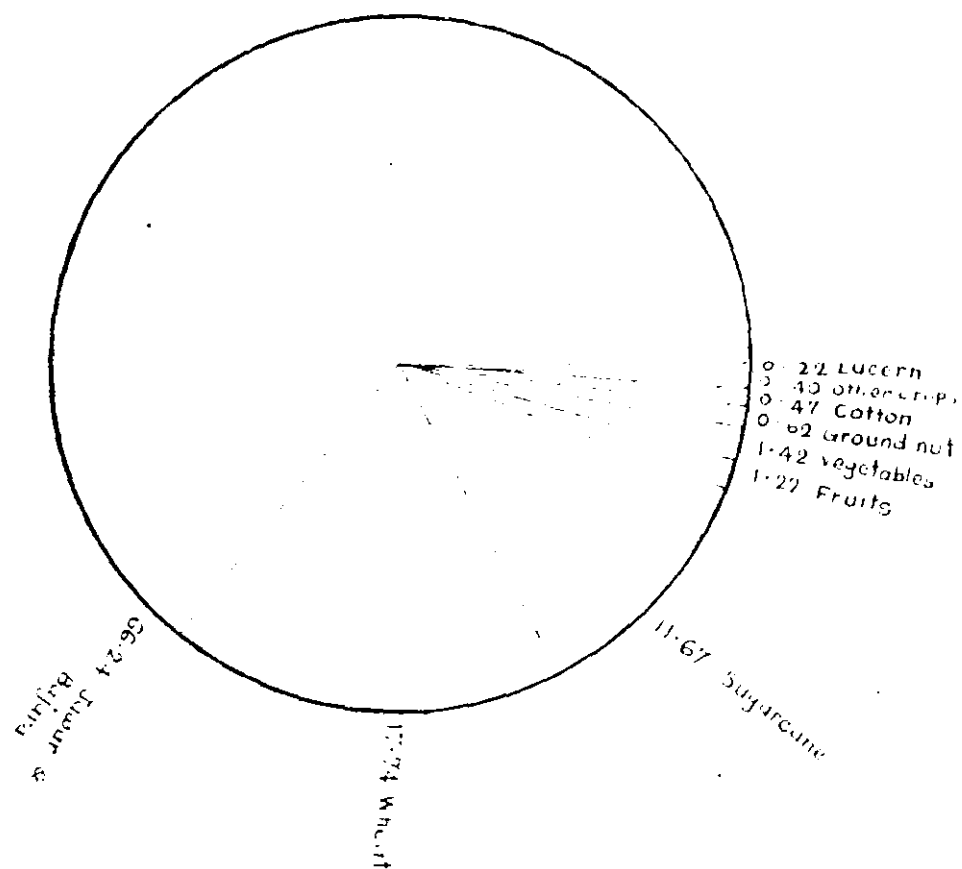
Size Group of Holding	(9) Lucerne			
	Before	After	Difference	Percentage change
1. Upto 5.00 acres (Marginal farmers)	1.50	1.15	0.35	-23.30
2. 5.1 to 10.00 acres (Small farmers)	0.50	0.60	+0.10	+20.00
3. 10.1 to 15.00 acres (Medium farmers)	0.50	0.50	-	-
4. 15.1 acres and above (Big farmers)	3.00	3.50	+0.50	+16.66
Total area of each crop	5.50	5.75	+0.25	+ 0.45
Percentage of the gross cultivated area	0.22	0.22		
Size Group of Holding	Gross cultivated area under crop			
	Before	After	Difference	Percentage change
1. Upto 5.00 acres (Marginal farmers)	322.76	328.26	+ 5.5	+ 1.70
2. 5.1 to 10.00 acres (Small farmers)	434.03	433.8	- 0.23	- 0.05
3. 10.1 to 15.00 acres (Medium farmers)	455.9	480.65	+24.75	+ 5.43
4. 15.1 acres and above (Big farmers)	1307.21	1335.39	+28.18	+ 2.16
Total area of each crop	2519.9	2578.1	+58.2	+ 2.31
Percentage of the gross cultivated area	100.0	100.0		

## Change in the Area under various crops

Before Sugar factory  
(i.e. 1961-62)



After Sugar factory  
(i.e. 1975-76)



sugar factory. The total area under cultivation increased by 2.31 per cent. The maximum proportionate increase has been for medium farmers followed by big and marginal farmers in that order. In the case of small farmers there was actually a decrease.

The figures for the two years 1961-62 and 1975-76 may be compared crop-wise. In 1961-62 the area under jowar/bajra was 72.61 per cent of the gross cultivated area. But it decreased to 66.24 per cent in 1975-76. In the case of wheat, the relevant proportion was 19.95 per cent which declined to 17.74 per cent. In the case of fruits, vegetables, groundnut, cotton, other crops and lucern initial proportions were extremely small and changes therein, in either direction, have been more or less insignificant. On the contrary, the proportion for sugarcane increased significantly from 3.61 per cent to 11.67 per cent. Thus, from this data it is clear that the proportionate area under foodgrains like jowar, bajra and wheat has decreased. It has also decreased in the case of cash crops like groundnut and cotton. However, it has increased for cash crops like sugarcane, fruits and vegetables significantly, so in the case of sugarcane. The change in the cultivated area under different crops is shown in the diagram.

Now, we shall examine the data in Table 3.3 about the area under different crops separately for the different size-groups of landholdings so that we may get an idea of

the change in the cropping pattern with reference to these different categories of holdings.

3.10 Change in the Area under Various Crops in Different Size Groups of Holding

(1) Jowar and Bajra: From the table it is clear that these are the crops with the highest acreage before and after the establishment of the sugar factory. Previously area under these crops was 1829.89 acres which decreased to 1707.76 acres. Thus the total acreage decreased by 6.67 per cent at the second point of time. When we consider the decline of acreage with reference to the different size-groups of holding, we find that decline is a common feature to all these size groups of holdings. The marginal farmers reduced the area under these crops by 13.31 per cent. The percentage decline for small, medium and big farmers respectively has been 7.88 per cent, 6.08 per cent and 5.30 per cent. Thus smaller the category, the greater has been the percentage of decline.

(2) Wheat: The area under wheat cultivation comes second. There has been a decline here also. The area under this crop declined by 9.03 per cent. The percentages of decline in the area under wheat for the different sizes of holdings is as follows: Marginal, 3.53 per cent; Small, 14.08 per cent; Medium, 17.03 per cent; Big, 4.17 per cent.

(3) Sugarcane: Before establishment of the sugar factory, the area under sugarcane was very small. A majority

of the farmers who were cultivating sugarcane before the establishment of the sugar factory were preparing gur from sugarcane. Formerly the prices of gur fluctuated to a greater extent so that the cultivators were not interested in the cultivation of sugarcane. Apart from this, the cultivation of sugarcane requires more water as compared to other crops in the area. We have observed that after the establishment of the sugar factory, technical help and credit facility were easily made available for the construction of the new wells and the repairs of old wells. Some lift irrigation schemes are also undertaken by the sugar factory and some of them had already been completed by the end of 1971. But it does not cover the surveyed villages. The sugar factory has been providing chemical fertilizers, seeds, pesticides and insecticides for sugarcane plantation. It has also been advancing loans for other expenses of sugarcane cultivation. All these facilities have enhanced sugarcane cultivation to a great extent.<sup>5</sup> Previously the total area under sugarcane was 90.88 acres, but at the second point of time, it increased to 300.88 acres. From the data it seems that the percentage increase in the area under sugarcane is the highest in the case of medium farmers. It is least in the case of the big landholders. Comparatively, proportionate increase has been higher in the case of marginal and small farmers.

The reason for this state of affairs appears to be



that even before the sugar factory came into existence the big farmers were cultivating sugarcane on a large scale. But the farmers in other size-groups of holdings were cultivating sugarcane on a relatively smaller scale. In fact nearly half of the land under sugarcane in 1961-62 was cultivated by the big landholders, the remaining half being distributed among the other three categories of farmers. Prior to the establishment of sugar factory farmers in the last three groups of holdings increased the cultivation of sugarcane on a large scale. Hence, for them the percentage increase in the case of area under sugarcane has been very high. This has also been brought out by the table. The percentage of increase of sugarcane cultivation by each of the first three landholding groups has been more than that of the fourth size-group of big farmers. All the same the acreage under the sugarcane cultivation of the fourth group in 1975-76 was more than that of each of the first three groups.

(4) Fruits: The cultivators in the region generally cultivate pomegranate, guava, chikku, grapes, sweet oranges, papaya, etc. The total area under fruits increased by 8.45 per cent. But there is a decrease of 17.43 per cent only in the case of the marginal farmers. The reason, evidently is that they have given preference to sugarcane cultivation. The area under fruits increased for the second and the third size-groups of holding. It remained constant for the fourth size-group of holding. The data indicate the increasing

tendency of growing cash crops among the farmers.

(5) Vegetables: Generally, the cultivators in the region cultivate brinjal, onion, garlic, chilly, coriander, methi, beans, tomato, etc. From the table it is clear that the cultivators from all groups of landholding have increased the area under vegetables. The marginal farmer brought more area under vegetable cultivation compared to others in the higher size-groups. These farmers increased the area under vegetables by 113.20 per cent. For the small, medium and big farmers the percentage increases are respectively 51.60 per cent, 25.80 per cent and 42.22 per cent. The aggregate area under cultivation of vegetable increased by 45.89 per cent.

The vegetables constitute a group of cash crops. The farmers can get more money from the sale of vegetables in the weekly market with which they can defray their short-term agricultural and household miscellaneous expenses. With the increased well and canal irrigation it has become possible to cultivate vegetables to meet these short-term expenses. However, sugarcane is more profitable than vegetables and hence the area under cultivation of vegetables still remains small.

(6) Groundnut: The total area under groundnut decreased by 4.47 per cent. From Table 3.3 we find that the area under groundnut in the case of the first two landholding groups, decreased by 63.64 per cent and 42.85 per cent respectively.

But it increased for the third and the fourth size-groups of farmers relatively large by 60 per cent and 12.50 per cent respectively. From this data it appears that due to the increased irrigation facility, small farmers have turned to sugarcane as the major cash crop. Though groundnuts are known as cash crop, the relatively smaller farmers have decreased the area of cultivation under this crop for the reason that farmers are getting loans and advances against the sugarcane crop from the sugar factory to meet their short term and medium term agricultural expenses, and not against the groundnut crop. Hence the smaller landholders prefer to concentrate on sugarcane to the virtual exclusion of other cash-crops. So the relatively smaller farmers have decreased the area under groundnut and increased it under sugarcane. On the contrary the larger landholders have increased the area under groundnut crop, because of two reasons. Firstly, due to the increase in the irrigation facility dry land came under irrigation, and it became possible to increase the area under cash crops like groundnut. Secondly, the financial position of the larger landholders is relatively sound, so that they need not depend solely upon the loans and advances from the sugar factory. In brief, the small cultivators have decreased the area of cultivation under groundnut, while they have increased the area under sugarcane cultivation. On the contrary the large landholders have increased the area under both the crops.

(7) Cotton: Like groundnut, vegetables, and sugarcane, cotton is also known as an important cash crop. The total area under cotton decreased by 4.00 per cent after the establishment of the sugar factory. The marginal farmers in the first size group of holding were not cultivating cotton before the establishment of the factory, and have not started cultivating it thereafter. So we can say that their attitude regarding this crop remained the same. The small farmers in the second holding group increased the area under cotton cultivation but the medium and big farmers in the third and the fourth size groups of holding have reduced the area under cotton cultivation. From the survey undertaken it seems that the overall decrease in the area under cotton has been due to the fluctuation in the price of cotton. The price of sugarcane, on the other hand, has been on the increase.

(8) Other crops: The area under other crops like rice, maize, green fodder, sunflower, grain, carrot, safflowers, kulith, math, etc., has increased after the establishment of the sugar factory. From the table it is clear that the marginal farmers in the first holding group were cultivating these crops to a very small extent, before the establishment of sugar factory. The small farmers in the second size group of holding were not cultivating these crops before and they did not start after the establishment of sugar factory. The cultivators in the third and the fourth

size-groups of holding have increased the area under these crops by 50.00 per cent and 33.33 per cent respectively. The total increase in the area under these crops is 37.97 per cent. The farmers in the third and the fourth size-groups of holdings have increased the area under these crops, because of the increase in irrigation after the establishment of sugar factory.

(9) Lucerne: Traditionally, a number of farmers have been cultivating lucerne, a green fodder for the cattle. But it is different from other green fodder because it is like a cash crop and gives more returns continuously for three years after its cultivation. From the table we find that the area under lucerne cultivation has increased by 0.45 per cent. The increase is not remarkable. This can be explained by the fact that the farmers use the green cane tops also as fodder. At the crushing season the green cane tops can be bought at very cheap price and this can be used as substitute for lucerne. But the green cane tops can be available only at the time of crushing season. It seems that after the establishment of the sugar factory the farmers have increased milch cattle like cows, she-buffaloes, she-goat, etc. The dairy development scheme of the sugar factory has promoted the growth of the dairy farming in the area.<sup>6</sup> Due to this reason demand for green fodder has increased. Hence the area under lucerne has increased.

From the table we can conclude that after the establish-

ment of the sugar factory, area under the crops like jowar, bajra, wheat, groundnut and cotton decreased and the area under sugarcane, fruits, vegetables, lucerne and other crops has increased. As compared to all other crops, the area under sugarcane has increased to a much greater extent.

Sugarcane being the main cash crop in this region, it may be useful to consider how many cultivators have started growing sugarcane and to what extent they have succeeded in increasing the cultivation of sugarcane at the second point of time.

### 3.11 Change in the Number of Sugarcane Cultivators and the Area under Sugarcane

The change in the number of sugarcane cultivators after the establishment of sugarcane factory is shown in Table 3.4. After visiting some experts in the field of sugar industry, the reasons for the meagre number of sugarcane cultivators and very small acreage under sugarcane prior to the establishment of the sugar factory became evident. These reasons are enumerated below:

(1) The prices of sugarcane were not remunerative and gur preparation was not much profitable due to fluctuations in the gur prices. (2) Water, an important input for sugarcane cultivation, was not in ample supply due to the inadequate irrigation facilities. Sugarcane crop requires relatively larger capital for seed, fertilizers, labourers, etc., as compared to other crops. The farmers in the region

were not getting loans easily from banks. This state of affairs changed after the factory came into existence.

(3) Prior to the establishment of the sugar factory, the farmers did not realise the income potential of sugarcane cultivation. They could experience this after the establishment of the sugar factory. In consequence, the old sugarcane cultivators started sugarcane cultivation in a big way and some new sugarcane cultivators entered the field. The changes observed in the table regarding the number of sugarcane cultivators indicated by the area under sugarcane have been explained groupwise.

From Table 3.4 it is clear that after the establishment of the sugar factory the number of sugarcane cultivators has increased from 76 to 143. Formerly 31.80 per cent of the farmers were cane cultivators which proportion has now increased upto 59.83 per cent. Previously the cultivators were cultivating sugarcane upto a maximum of three acres individually. But after the establishment of the factory 10.05 per cent of the cultivators have started sugarcane cultivation in the range of 3.1 to 10.1 acres and above. Thus the table gives an idea as to the increase in the number of sugarcane cultivators and the area under sugarcane cultivation.

Now we turn to the groupwise change in the sugarcane cultivators and the average acreage under sugarcane cultivation.

**Table 3.4. Classification of cultivators according to the areas under sugarcane cultivation before (1961-62) and after (1975-76) the establishment of the sugar factory**

Size groups of holdings (1)	Point of time (2)	Distribution of cultivators according to the area under sugarcane						
		Upto 1 acre (3)	1.1 to 2 acres (4)	2.1 to 3 acres (5)	3.1 to 4 acres (6)	4.1 to 5 acres (7)	5.1 to 6 acres (8)	6.1 to 7 acres (9)
Upto 5.00 acres (Marginal farmers)	Before	22 (23.90)	-	-	-	-	-	-
	After	32 (34.79)	24 (15.21)	-	-	-	-	-
5.1 to 10.00 acres (Small farmers)	Before	9 (15.00)	5 ( 8.33)	1 ( 1.67)	-	-	-	-
	After	14 (23.33)	13 (18.33)	1 ( 1.67)	2 ( 3.33)	-	-	-
10.1 to 15.00 acres (Medium farmers)	Before	9 (24.32)	1 ( 2.70)	-	-	-	-	-
	After	6 (16.22)	11 (29.73)	4 (10.81)	5 (13.52)	1 ( 2.70)	2 ( 5.41)	-
15.1 acres and above (Big farmers)	Before	17 (34.00)	9 (18.00)	3 ( 6.00)	-	-	-	-
	After	3 ( 6.00)	14 (28.00)	7 (14.00)	7 (14.00)	1 (2.00)	2 ( 4.00)	1 (2.00)
(Total)	Before	57 (23.85)	15 ( 6.23)	4 ( 1.67)	-	-	-	-
	After	55 (23.01)	52 (21.76)	12 ( 5.02)	14 ( 5.86)	2 (0.84)	4 ( 1.67)	1 (0.42)

Bracketed figures indicate the ratio of the concerned number of cultivators to the total number of cultivators i.e. column 15.



Table 3.4: contd.

Size group of holdings	Point of time	Distribution of cultivators according to the area under sugarcane			Total No. of farmers cultivating sugarcane (13)	Farmers not cultivating sugarcane (14)	Total of the cols 3 to 14 (15)
		7.1 to 8 acres (10)	8.1 to 9 acres (11)	9.1 to 10 acres (12)			
Upto 5.00 acres (Marginal farmers)	Before	-	-	-	22 (23.90)	70 (76.10)	92 (100.00)
	After	-	-	-	46 (50.00)	46 (50.00)	92 (100.00)
5.1 to 10.00 acres (Small farmers)	Before	-	-	-	15 (25.00)	45 (75.00)	60 (100.00)
	After	-	-	-	30 (50.00)	30 (50.00)	60 (100.00)
10.11 to 15.00 acres (Medium farmers)	Before	-	-	-	10 (27.03)	27 (72.97)	37 (100.00)
	After	-	-	-	29 (78.38)	8 (21.62)	37 (100.00)
15.1 acres and above (Big farmers)	Before	-	-	-	29 (58.00)	21 (42.00)	50 (100.00)
	After	1 (2.00)	-	2 (4.00)	38 (76.00)	12 (24.00)	50 (100.00)
(Total)	Before	-	-	-	76 (31.80)	163 (68.20)	239 (100.00)
	After	1 (0.42)	-	2 (0.84)	143 (59.83)	96 (40.17)	239 (100.00)

3.12 (I) Change in the Number of Sugarcane Cultivators and the Area under Sugarcane in the First Size Group of Holding (i.e. Marginal farmers)

Previously, out of the 92 farmers in the group, only 23.90 per cent of the farmers were cultivating sugarcane and that too only upto one acre. But after the establishment of sugar factory the proportion of sugarcane cultivators increased to 50.00 per cent. Out of these cultivators 15.21 per cent cultivators started cultivating sugarcane in the area of 1.1 to 2.00 acres. Thus the increases in the number of cultivators and in the area under sugarcane are significant. Previously no farmer from this marginal group was cultivating sugarcane upto 2 acres, but in this range 15.21 per cent of the cultivators are cultivating sugarcane.

3.13 (II) Second Size Group of Holding (Small farmers) and the Change in Sugarcane Cultivators and Area Under Sugarcane

From this holding group 25.00 per cent of the farmers were cultivating sugarcane before the establishment of the sugar factory. Now the proportion of sugarcane cultivators has increased upto 50.00 per cent. Out of the cultivators, 3.33 per cent of the cultivators have started cultivating sugarcane in the range between 3.1 and 4.00 acres. Before the establishment of sugar factory only 1.67 per cent of the farmers were cultivating sugarcane in the smaller range between 2.1 and 3.00 acres.

3.14 (III) Third Size Group of Holding (Medium farmers)  
and the Change in the Number of Sugarcane  
Cultivators and the Area under Sugarcane

In this group there were 27.03 per cent sugarcane cultivators formerly. Out of them 24.32 per cent were cultivating upto one acre and only 2.70 per cent were cultivating in the range between 1.1 and 2.00 acres. But after the establishment of the sugar factory the proportion of sugarcane cultivators rose to 78.38 per cent. Some of them are cultivating sugarcane in area above 2.00 acres and upto 6.00 acres. Previously there was not a single farmer cultivating sugarcane in this range of acreage. Thus the number of sugarcane cultivators increased nearly by three times. This increase in the number of sugarcane cultivators in this size group of holding is the highest among the different groups. Moreover, larger area is brought under sugarcane cultivation by several families.

3.15 (IV) The change in the Fourth Size Group of Holding  
(Big Farmers) regarding sugarcane cultivators  
and the area under Sugarcane

The percentage of farmers cultivating sugarcane in this size group of holding was 58.00. Now the percentage of sugarcane cultivators has increased to 76. Previously the sugarcane cultivators in this group were cultivating sugarcane in the range of 1.1 acres to 3.00 acres. A majority of them were cultivating sugarcane upto one acre only. At present many of them are cultivating more than

three acres of sugarcane. Thus the increase in the land under sugarcane is significant.

With the increase in irrigation facility cropping pattern changed. The area under cash crops like sugarcane, fruits, and vegetables, etc., has increased, while it has decreased under the foodgrains like jowar, bajra and wheat. After the establishment of the sugar factory and the consequent change in the cropping pattern the method of cultivation also changed. Perhaps the farmers have realised that the modern methods of cultivation lead to higher yields as compared to the traditional methods. We shall now turn to this aspect of the matter.

### 3.16 Change in the Ownership of Agricultural Implements

The survey reveals that prior to the sugar factory, the farmers were cultivating land with traditional methods and traditional implements. Generally, farmers were using wooden and/or iron plough, harrow and seed driller. They were using leather mhot and bullocks for lifting water from wells. For the levelling of land, they were using iron Keny (an agricultural instrument for levelling of land) because they were not getting bulldozers easily from Government concerns.

The use of tractor in land cultivation has increased after the establishment of the sugar factory. Due to the increased income they could purchase modern implements of agriculture, such as tractors, harrows, seed drillers, and

oil engines and electric motors for lifting water, trucks for the transport of manure, fertilizers and other agricultural inputs. For the transport of agricultural products such as sugarcane, cotton, foodgrains, vegetables, fodder, etc., from farm to market or warehouse and sugar factory, farmers started using tractors. From Table 3.5, we find the change in the equipment used by the farmers after establishment of the sugar factory.

(1) Plough: Out of the total families surveyed, 56.48 per cent were owning traditional plough in 1961-62, but in 1975-76 the percentage decreased to 55.64 per cent. In the case of marginal and small farmers, percentage of those using traditional plough has increased. The percentage remained constant in the case of medium farmers and it has decreased for big farmers.

(2) Harrow: Previously, 80.33 per cent of the farmers were using traditional (wooden) implements. Now the proportion of farmers using this implement increased upto 82.42 per cent. The percentage increase is very slight. The number of farmers using this implement has increased in the categories of marginal and small farmers and decreased in the case of medium farmers. It remained constant in the case of big farmers. This also shows that the use of the harrow by relatively smaller landholders has increased after the establishment of the sugar factory.

(3) Seed Driller: There is no significant change

**Table 3.5. Change in the number of -62) and after (1975-76)  
the establishment of the**

Size groups of holding	Before and after the estab- lishment of the sugar factory (2)	No. of families fami- lies in th group (3)	No. of families		
			Truck (10)	Tractor (11)	Bull- dozer (12)
(1)		(3)	(10)	(11)	(12)
Upto 5.00 acres (Marginal farmers)	Before	92 (100)	-	-	-
	After	92 (100)	-	-	-
5.1 to 10.00 acres (Small farmers)	Before	60 (100)	-	-	-
	After	60 (100)	1 (1.67)	2 (3.33)	-
10.1 to 15.00 acres (Medium farmers)	Before	37 (100)	-	1 (2.70)	-
	After	37 (100)	1 (2.70)	3 (8.11)	-
15.1 acres and above (Big farmers)	Before	50 (100)	-	1 (2.00)	-
	After	50 (100)	1 (2.00)	3 (6.00)	-
All size groups of land hold- ings	Before	239 (100)	-	2 (0.84)	-
	After	239 (100)	3 (1.26)	6 (3.35)	-

(Bracketed figures indicate the number of families  
in each group shown in column 3)

**Table 3.5. Change in the number of families possessing Agricultural Implements before (1961-62) and after (1975-76) the establishment of the sugar factory**

Size groups of holding (1)	Before and after the establishment of the sugar factory (2)	No. of families in the group (3)	Agricultural Implements possessed by No. of families								
			Plough (4)	Harrow (5)	Seed driller (6)	Mhot (7)	Oil Engine (8)	Electric motor (9)	Truck (10)	Tractor (11)	Bull-dozer (12)
Upto 5.00 acres (Marginal farmers)	Before	92 (100.00)	29 (31.53)	59 (64.13)	58 (63.05)	33 (34.78)	5 (5.43)	1 (1.08)	-	-	-
	After	92 (100.00)	30 (32.61)	63 (68.48)	60 (65.22)	17 (18.48)	14 (15.22)	18 (19.57)	-	-	-
5.1 to 10.00 acres (Small farmers)	Before	60 (100.00)	32 (53.35)	47 (78.33)	47 (78.33)	29 (48.35)	10 (16.66)	-	-	-	-
	After	60 (100.00)	33 (55.00)	49 (81.67)	48 (80.00)	12 (20.00)	9 (15.00)	13 (21.65)	1 (1.67)	2 (3.33)	-
10.1 to 15.00 acres (Medium farmers)	Before	37 (100.00)	30 (81.08)	36 (97.30)	36 (97.30)	20 (54.06)	5 (13.52)	-	-	1 (2.70)	-
	After	37 (100.00)	30 (81.08)	35 (94.59)	35 (94.59)	12 (32.43)	11 (29.73)	14 (37.84)	1 (2.70)	3 (8.11)	-
15.1 acres and above (Big farmers)	Before	50 (100.00)	44 (88.00)	50 (100.00)	48 (96.00)	30 (60.00)	8 (16.00)	2 (4.00)	-	1 (2.00)	-
	After	50 (100.00)	40 (80.00)	50 (100.00)	48 (96.00)	14 (28.00)	20 (40.00)	22 (44.00)	1 (2.00)	3 (6.00)	-
All size groups of land holdings	Before	239 (100.00)	135 (56.48)	142 (80.33)	189 (79.07)	111 (46.44)	29 (12.13)	3 (1.26)	-	2 (0.84)	-
	After	239 (100.00)	133 (55.64)	197 (82.42)	191 (79.83)	55 (23.02)	54 (22.60)	67 (28.03)	3 (1.26)	8 (3.35)	-

(Bracketed figures indicate the percentages of unbracketed figures in columns 4 to 12 to the number of families in each group shown in column No. 3).

in the proportion of farmers using this implement. Previously the percentage of owners of seed-drillers was 79.07 per cent and now it is 79.83 per cent. In the first and the second categories of farmers, the proportion of farmers using seed-drillers has increased, in the third category, it has decreased, and it is constant in the fourth category of holdings.

(4) Mhot (a big leather bag made for lifting water from well): Prior to the establishment of the sugar factory, 46.44 per cent of the cultivators' families were using mhots; but now only 23.02 per cent of the farmers use it. There is decline in the proportion of mhot-owners and users from every category of landholders. Table 3.5 shows that the farmers have been using oil engines and electric motors instead of mhots owing to the increase in their income.

(5) Oil Engines and Electric Motors: Farmers who were using mhots started using oil engines and electric motors as it was more economical and less time-consuming. Formerly, the income of farmers was low. Hence, they could not purchase oil engine or electric motor. After the establishment of the sugar factory, farmers could purchase these implements, due to increased income. It seems that the percentage of users of the mhot decreased due to this reason. Previously only 12.13 per cent of the farmers used oil engines but the percentage increased to 22.60 per cent. The proportion of oil engine owners in the case of the marginal, small,



medium and big landholders was 5.43 per cent, 16.66 per cent, 13.52 per cent and 16.00 per cent respectively which increased to 15.22 per cent, 15.00 per cent, 29.73 per cent and 40.00 per cent respectively. In the case of electric motors, it has increased to 28.03 per cent from 1.26 per cent.

(6) Tractors and Trucks: Generally tractors are being used for land cultivation and also for the transport of agricultural inputs and the agricultural products. Previously only 0.84 per cent of the families had tractors; now the percentage has increased to 3.35. In the case of trucks, there was not a single family having a truck of its own. But now 1.26 per cent of the families own trucks. The proportions of truck-owners in the case of small, medium and big farmers are 1.67 per cent, 2.70 per cent and 2.00 per cent respectively. No family from the first category of landholders owns a truck. After the establishment of the sugar factory farmers were provided with loans for buying trucks and tractors by the Central Bank of India on the guarantee given by the sugar factory. Some farmers have purchased trucks and tractors also because additional source of income had emerged.

From Table 3.5 we find that the number of wooden equipment holders has decreased in the third and the fourth size groups of holdings. This is evidently because their income increased to such an extent that they were now in a position to pay for modern machines to substitute for their

traditional implements.

### 3.17 Changes in the Ownership of Cattle

After the establishment of the sugar factory the ownership of cattle has also changed. Large landholders started using tractors and other modern equipment which naturally led to a decrease in the number of bullocks. But at the same time they were trying to invest their additional income in purchasing milch cattle. The sugar factory also promoted dairy farming and poultry. Many farmers adopted these subsidiary occupations as additional sources of income. Table 3.6 shows the change in the picture of ownership of cattle after the establishment of the sugar factory.

(1) Bullocks: Previously 72.80 per cent of the farmers owned bullocks. Now the proportion has decreased to 71.55 per cent. The change is not significant. In the case of large landholders the number of bullock-owners remained the same. In the case of small and medium farmers it decreased and in the case of marginal farmers it has increased. But all these are minor changes.

(2) Cows: The number of cow owners has increased. Before the establishment of the sugar factory, 35.14 per cent of the families had cows. The proportion has increased to 64.86 per cent. The proportion of cow owners is higher in the case of big farmers. Previously it was 58.00 per cent which increased to 82.00 per cent. The proportion of cow owners among the marginal, small, and medium farmers was

**Table 3.6.** Composition of cattle ownership before (1961-62) and after (1975-76) the establishment of the sugar factory

(No. of families owning the cattle)

Size groups of holding (1)	No. of families in the group (2)	Bullocks		Cows		Buffalos	
		Before (3)	After (4)	Before (5)	After (6)	Before (7)	After (8)
Upto 5 acres (Marginal farmers)	92	50 (54.35)	51 (55.43)	23 (25.00)	57 (61.96)	-	14 (15.22)
5.1 to 10.00 acres (Small farmers)	60	44 (73.34)	41 (61.34)	18 (30.00)	29 (47.34)	1 (1.67)	10 (16.67)
10.1 to 15.00 acres (Medium farmers)	37	32 (86.49)	31 (83.69)	14 (37.84)	28 (38.68)	2 (5.40)	12 (32.46)
15.1 acres and above	50	48 (94.0)	48 (94.0)	29 (58.0)	41 (82.0)	5 (10.0)	15 (30.0)
Total	239	174 (72.80)	171 (71.55)	84 (35.14)	155 (64.86)	8 (3.35)	51 (21.34)

(Figures in the parenthesis indicate percentages of unbracketed figures in column 3 to 15 to the total in the second column)

Table 3.6: contd.

Size groups of holding (1)	No. of families in the group (2)	She-goats		Sheep		Hens	
		Before (9)	After (10)	Before (11)	After (12)	Before (13)	After (14)
Upto 5 acres (Marginal farmers)	92	13 (14.13)	43 (46.73)	1 (1.08)	3 (3.26)	-	2 (2.17)
5.1 to 10.00 acres (Small farmers)	60	11 (18.33)	28 (46.67)	-	3 (5.00)	-	5 (8.33)
10.1 to 15.00 acres (Medium farmers)	37	2 (5.40)	24 (64.86)	-	2 (5.40)	1 (2.70)	1 (2.70)
15.1 acres and above	50	14 (28.0)	30 (60.0)	-	-	-	4 (8.0)
Total	239	40 (16.74)	125 (52.30)	1 (.42)	8 (3.34)	1 (.42)	12 (5.02)

25.00 per cent, 30.00 per cent and 37.84 per cent respectively which has increased to 61.96 per cent, 47.34 per cent and 38.68 per cent respectively. The proportion of cow owners is much smaller in the case of medium farmers. During the survey it is observed that some farmers in the first and fourth size group of holding are doing dairy farming as an additional source of income.

(3) Buffaloes: After the establishment of the sugar factory there was an increase in the proportion of the buffalo owners. Previously 3.35 per cent of the farmers owned buffaloes. Now the percentage has increased to 21.34 per cent. Previously, not marginal farmer owned a buffalo, but now 15.22 per cent of the marginal farmers own buffaloes. The proportion of buffalo owners from the small, medium and big farmers was 1.67 per cent, 5.40 per cent and 10.00 per cent respectively. Now the proportion has increased to 16.67 per cent, 32.46 per cent and 30.00 per cent respectively in the case of second, third and fourth size groups of holdings. Out of the total farmers surveyed, the proportion of buffalo owners from medium farmers is the largest. Due to the increase in the area under sugarcane, fodder problem is solved to a large extent. During the crushing season, the green tops of sugarcane are available in plenty and can be obtained easily in sufficient quantities at a lower price.

(4) She-goats: The proportion of she-goat owners has

also increased after the establishment of the sugar factory. Previously there were 16.74 per cent of she-goat owners. Now the proportion has increased to 52.30 per cent. The percentage of she-goat owners is relatively higher among the medium and big landholders. This may be due to greater availability of green fodder. The percentage is relatively less in the case of the marginal and small landholders. But even for them the proportion increased at the <sup>later</sup> point of time.

(5) Sheep: Previously the percentage of sheep-owners was very small. Now it has increased some what from 0.42 per cent to 3.34 per cent. Among the smal, medium and big landholders there was not a single farmer owning sheep. At present some of the marginal, small and medium farmers own sheep. As for the marginal farmers, the number of sheep owners has increased. The number of sheep owners in this region is very small because only the shepherd community owns sheep traditionally. Other farmers generally do not own sheep.

(6) Hens: Some farmers in the region have started poultry on a small scale. Prior to the factory the percentage of poultry owners was very low but at present it has increased from 0.42 per cent to 5.02 per cent. Previously there was only one poultry owner. He was from the category of medium farmers. But at present some farmers from all the size groups are maintaining some poultry.

Thus, from Table 3.6 we can conclude that the number of cattle owners has increased after the establishment of sugar factory. Secondly, many farmers have started keeping milch cattle as an additional source of income.

### 3.18 Use of Modern Methods of Farming

Traditionally, the farmers were growing a single crop in a year. Generally they were growing jowar, bajra and wheat on a large scale and they were growing other crops like sugarcane, cotton, fruits, etc., on a small scale. After the sugar factory, the acreage under irrigation increased. With adequate and reliable availability of water the farmers started taking two and some times three crops in a year. From the survey it is found that the sugar factory provided incentives directly and indirectly to take more than one crop in a year. It has already been mentioned that well irrigation and lift irrigation are promoted by the sugar factory directly. Apart from this, technical help and guidance for scientific farming are provided by the factory.<sup>7</sup> The provision of credit facility, improved varieties of seeds, fertilizers, etc., by the sugar factory has made it possible for the farmers to grow more than one crop in a year.

3.19 In 1973-74 the sugar factory provided fertilizers and seeds of hybrid bajra to 1226 cultivators for 4000 acres. In 1974-75, the factory provided financial assistance to 34 farmers towards the expenses incurred on sugar-

cane cultivation. The factory has appointed 26 agricultural assistants for introduction and propagation of modern methods of farming.<sup>8</sup>

The establishment of a new factory or a firm generates certain effects, from its beginning, on the environment indirectly. With the establishment of the sugar factory the farmers started using the modern methods of farming in order to get two or more crops in a year. The methods adopted by the farmers in the various size groups of holding, are shown in Tables 3.7 to 3.11. Non-users mean the farmers who have not adopted the methods. Thus these tables show the number of farmers adopting modern methods and the length of period of the adoption.

3.20 Table 3.7 shows the overall adoption of the modern methods of farming. It has already been explained that previously the majority of the farmers were taking a single crop in a year. But after the establishment of the sugar factory the farmers could get various facilities, such as irrigation, credit and other agricultural assistance. Hence, gradually the farmers in the region started growing more than a single crop. Formerly 8.79 per cent of the farmers were growing multiple crops. After the establishment of the sugar factory, 48.54 per cent of the farmers started growing multiple crops in their irrigated land, with the help of modern methods such as improved seeds, chemical fertilizers, etc.



Table 3.7. Classification of farmers according to the use of modern methods of farming before (1961-62) and after (1975-76) the establishment of the sugar factory  
(All size groups of Holding)

Sr No.	Particulars of the modern methods of farming	No. of farmers using modern methods		No. of non-users of modern methods	Total of the cols 4 and 5
		Before the sugar factory	After the sugar factory		
1	2	3	4	5	6
1	Multiple cropping	21 (8.79)	116 (48.54)	123 (51.46)	239 (100.00)
2	Use of improved seeds				
	(a) Hybrid seeds of Jowar/Bajra etc.	15 (6.28)	138 (57.74)	101 (42.26)	239 (100.00)
	(b) Hybrid seed of cotton	2 (.84)	41 (17.15)	198 (82.85)	239 (100.00)
	(c) Improved variety of wheat	10 (4.18)	149 (62.34)	90 (37.66)	239 (100.00)
3	Use of Fertilizers				
	(a) In-organic	21 (8.79)	148 (61.92)	91 (38.08)	239 (100.00)
	(b) Organic				
	(i) Green manure	13 (5.44)	37 (15.48)	202 (84.52)	239 (100.00)
	(ii) Compose	5 (2.10)	73 (30.54)	166 (69.46)	239 (100.00)
4	Use of Pesticides				
	(a) Before sowing	5 (2.10)	105 (43.94)	134 (56.06)	239 (100.00)
	(b) After sowing	5 (2.10)	144 (60.25)	94 (39.75)	239 (100.00)
5	Scientific method of irrigation	1 (.42)	85 (35.56)	154 (64.44)	239 (100.00)
6	Practice of mechanical farming	7 (2.93)	63 (26.36)	176 (73.64)	239 (100.00)

Figures in the parenthesis indicate percentages to the total in the last column.

3.21 The farmers were not accustomed to the use of hybrid seeds of jowar, bajra, cotton and they were rarely using improved varieties of wheat. But the sugar factory has introduced these hybrid and improved varieties of seeds, and it has also provided these varieties of improved seeds to the farmers.<sup>9</sup> Taluka Panchayat Samiti provides seeds to the farmers on a small scale, but the farmers have to pay in cash. On the other hand, the factory provides seeds to the farmers on a large-scale basis and that too on credit. Naturally, farmers take advantage of this facility. Hence, since the establishment of the factory, the use of hybrid and improved seeds has been increasing. Previously 6.28 per cent of the farmers were using the seeds of hybrid jowar and bajra. Now 57.74 per cent of the farmers have started using the seeds of hybrid jowar and bajra. The percentages of users of hybrid seed of cotton and improved varieties of wheat have increased respectively from 0.84 per cent to 17.15 per cent, and from 4.18 per cent to 62.34 per cent.

3.24 The proportion of users of inorganic fertilizers has also increased from 8.79 per cent to 61.92 per cent. But as compared to the use of inorganic fertilizers, the use of organic fertilizers such as green manure and compost manure has increased to a smaller extent. Previously 5.44 per cent of the families were using green manure and 2.10 per cent were using compost manure. But after the estab-

lishment of sugar factory the proportion of the users of green manure increased to 15.48 per cent and the proportion of users of compost-manure increased to 30.54 per cent.

3.23 In the case of users of pesticides, before and after sowing, the proportion was 2.10 per cent. After the establishment of the sugar factory, 43.94 per cent farmers were using it before sowing land, 60.25 per cent after sowing. After the establishment of the sugar factory proportion of the users of scientific method of irrigation has increased from 0.42 per cent to 35.56 per cent. The scientific method of irrigation does not refer here to graded furrow irrigation, because this method is applicable only on big farms. Here it refers to the use of adequate water according to the regular time schedule. For instance, a crop like sugarcane requires water after an interval of every 20 days in this region. Similarly it requires adequate but not excessive use of water. The excessive use of water harms the proper growth of the crop. The farmers having the facility of irrigation can use the water scientifically. Those who have to depend upon canal irrigation cannot use the method properly because of the irregularity in canal rotation. The most important reasons for the adoption of scientific methods of irrigation are firstly, the increase in the well, lift and canal irrigation facilities and secondly, demonstrations of new scientific methods of irrigation given by the sugar factory.<sup>10</sup>

With increased availability of tractors the farmers in the region have been adopting the practice of mechanical farming. The proportion of farmers using modern techniques has increased from 2.93 per cent to 26.36 per cent. Thus, in general, we can say that after the establishment of the sugar factory many farmers in the region have adopted the modern methods of farming.

3.24 Now, we shall analyse the details of the adoption of these scientific methods of farming with reference to each category of landholders. Tables 3.8, 3.9, 3.10 and 3.11 show the adoption of the scientific methods of farming by the marginal, small, medium and big landholders respectively.

3.25 (1) Multiple Cropping: The farmers who used to grow a single crop in a year cultivated generally kharif jowar, bajra or rabi wheat. Even now those who grow a single crop in a year cultivate one of these crops only. The farmers who are growing more than one crop generally cultivate both the kharif and rabi crops and with the coming of summer (by the end of February or at the beginning of March) they start cultivating a third crop such as groundnut, vegetables, green fodder, etc. In this area sugarcane cultivation starts from the first week of June. It is known as Adsali. Some farmers start sugarcane cultivation in the months of October and November which is known as 'Sooru'. Some cultivators take one crop before the culti-

**Table 3.8. Classification of farmers according to the use of Modern Methods of Farming before (1961-62) and after (1975-76) the establishment of the sugar factory (First size group of holding i.e. Marginal farmers)**

Sr. No.	Particulars of the Modern Methods of farming	No. of farmers using modern methods		No. of non-users of modern methods	Total of the cols 4 and 5
		Before the sugar factory (3)	After the sugar factory (4)		
(1)	(2)	(3)	(4)	(5)	(6)
1.	Multiple cropping	10 (10.87)	39 (42.39)	53 (57.61)	92 (100.00)
2.	<u>Use of improved seeds</u>				
	(a) Hybrid seeds of Jowar/Bajra, etc.	7 ( 7.61)	47 (51.09)	45 (48.91)	92 (100.00)
	(b) Hybrid seed of cotton	-	-	92 (100.00)	92 (100.00)
	(c) Improved variety of wheat	4 ( 4.35)	53 (57.61)	39 (40.39)	92 (100.00)
3.	<u>Use of fertilizers</u>				
	(a) In-organic	3 ( 3.36)	50 (54.35)	42 (45.65)	92 (100.00)
	(b) <u>Organic</u>				
	(i) Green manure	5 ( 5.44)	11 (11.96)	81 (88.04)	92 (100.00)
	(ii) Compost	2 ( 2.17)	21 (22.82)	71 (77.18)	92 (100.00)
4.	<u>Use of pesticides</u>				
	(a) Before sowing	3 ( 3.26)	32 (34.78)	60 (65.22)	92 (100.00)
	(b) After sowing	2 ( 2.17)	47 (51.08)	45 (48.92)	92 (100.00)
5.	Scientific method of irrigation	-	30 (32.61)	62 (67.39)	92 (100.00)
6.	Practice of mechanical farming	1 ( 1.08)	15 (16.30)	77 (83.70)	92 (100.00)

Figures in parenthesis indicate percentages to the total in last column.

**Table 3.9. Classification of farmers according to the use of Modern Methods of Farming before (1961-62) and after (1975-76) the establishment of the sugar factory**

(Second size group of holding i.e. Small farmers)

Sr. No.	Particulars of the Modern Methods of farming	No. of farmers using modern methods		No. of non-users of modern methods	Total of the cols 4 and 5
		Before the sugar factory (3)	After the sugar factory (4)		
(1)	(2)	(3)	(4)	(5)	(6)
1.	Multiple cropping	5 (8.33)	26 (43.33)	34 (56.67)	60 (100.00)
2.	<u>Use of improved seeds</u>				
	(a) Hybrid seed of Jowar/Bajara, etc.	3 (5.00)	29 (48.33)	31 (51.67)	60 (100.00)
	(b) Hybrid seed of cotton	-	10 (16.66)	50 (83.34)	60 (100.00)
	(c) Improved variety of wheat	1 (1.67)	29 (48.33)	31 (51.67)	60 (100.00)
3.	<u>Use of Fertilizers</u>				
	(a) In-organic	5 (8.33)	29 (48.33)	31 (51.67)	60 (100.00)
	(b) <u>Organic</u>				
	(i) Green manure	3 (5.00)	8 (13.33)	52 (86.67)	60 (100.00)
	(ii) Compost	-	17 (28.33)	43 (71.67)	60 (100.00)
4.	<u>Use of Pesticides</u>				
	(a) Before sowing	-	21 (35.00)	39 (65.00)	60 (100.00)
	(b) After sowing	-	29 (48.33)	31 (51.67)	60 (100.00)
5.	Scientific method of irrigation	-	16 (26.67)	44 (73.33)	60 (100.00)
6.	Practice of mechanical farming	1 (1.67)	14 (23.33)	46 (76.67)	60 (100.00)

Figures in parenthesis indicate percentages to the total in last column.

**Table 3.10.** Classification of farmers according to the use of Modern Methods of Farming before (1961-62) and after (1975-76) the establishment of the sugar factory  
(Third size group of holding i.e. Medium farmers)

Sr. No.	Particulars of the Modern Methods of farming	No. of farmers using modern methods		No. of non-users of modern methods	Total of the cols 4 and 5
		Before the sugar factory (3)	After the sugar factory (4)		
(1)	(2)	(3)	(4)	(5)	(6)
1.	Multiple cropping	2 (5.41)	21 (56.76)	16 (43.24)	37 (100.00)
2.	<u>Use of improved seeds</u>				
	(a) Hybrid seeds of Jowar/Bajara, etc.	2 (5.41)	25 (67.57)	12 (32.43)	37 (100.00)
	(b) Hybrid seed of cotton	-	13 (35.14)	24 (64.86)	37 (100.00)
	(c) Improved variety of wheat	2 (5.41)	27 (72.97)	10 (27.03)	37 (100.00)
3.	<u>Use of fertilizers</u>				
	(a) In-organic	1 (2.70)	29 (78.38)	8 (21.62)	37 (100.00)
	(b) <u>Organic</u>				
	(i) Green manure	3 (8.11)	8 (21.62)	29 (78.38)	37 (100.00)
	(ii) Compost	1 (2.70)	15 (40.54)	22 (59.46)	37 (100.00)
4.	<u>Use of pesticides</u>				
	(a) Before sowing	-	21 (56.76)	16 (43.24)	37 (100.00)
	(b) After sowing	1 (2.70)	28 (75.67)	9 (24.33)	37 (100.00)
5.	Scientific method of irrigation	-	18 (48.64)	19 (51.36)	37 (100.00)
6.	Practice of mechanical farming	3 (8.11)	16 (43.24)	21 (56.76)	37 (100.00)

Figures in parenthesis indicate percentages to the total in last column.

**Table 3.11.** Classification of farmers according to the use of Modern Methods of Farming before (1961-62) and after (1975-76) the establishment of the sugar factory  
(Fourth size group of holding i.e. Big farmers)

Sr. No.	Particulars of the Modern Methods of farming	No. of farmers using modern methods		No. of non-users of modern methods	Total of the cols 4 and 5
		Before the sugar factory (3)	After the sugar factory (4)		
(1)	(2)	(3)	(4)	(5)	(6)
1.	Multiple cropping	4 (8.00)	30 (60.00)	20 (40.00)	50 (100.00)
2.	<u>Use of improved seeds</u>				
	(a) Hybrid seeds of Jowar/Bajra, etc.	3 (6.00)	37 (74.00)	13 (26.00)	50 (100.00)
	(b) Hybrid seed of cotton	2 (4.00)	16 (32.00)	34 (68.00)	50 (100.00)
	(c) Improved variety of wheat	3 (6.00)	40 (80.00)	10 (20.00)	50 (100.00)
3.	<u>Use of fertilizers</u>				
	(a) In-organic	12 (24.00)	40 (80.00)	10 (80.00)	50 (100.00)
	(b) <u>Organic</u>				
	(i) Green manure	2 (4.00)	10 (20.00)	40 (80.00)	50 (100.00)
	(ii) Compost	2 (4.00)	20 (40.00)	30 (60.00)	50 (100.00)
4.	<u>Use of pesticides</u>				
	(a) Before sowing	2 (4.00)	31 (62.00)	19 (38.00)	50 (100.00)
	(b) After sowing	2 (4.00)	40 (80.00)	10 (20.00)	50 (100.00)
5.	Scientific method of irrigation	1 (2.00)	21 (42.00)	29 (58.00)	50 (100.00)
6.	Practice of mechanical farming	2 (4.00)	8 (36.00)	32 (64.00)	50 (100.00)

Figures in the parenthesis indicate percentages to the total in last column.



vation of 'Sooru' sugarcane (between June and September). After the sugarcane planting the farmers grow maize, sunflower, vegetables, etc., during the earlier months of the season in the same field. During the earlier months the height of sugarcane crop is much less and continues to remain so upto two to three months and it is quite possible to grow the above mentioned crops in the same sugarcane field. The period of maturity of sugarcane is 16 to 18 months. After the period of maturity the sugarcane is harvested. The sugarcane cultivators can again take the same crop for the second time which is known as 'Ratoon' (Khodawa). This time also farmers can take the same crops which they used to take in the sugarcane field at the beginning of Ratoon. But at present, the majority of the farmers prefer to plough or furrow the sugarcane harvested field for sowing wheat because it gives more yield. Thus, during the survey time, it was observed that the farmers having irrigation facility generally grow several crops in a year. Because of multiple cropping the crop intensity has increased. But in the dry land area it has remained unchanged.

10.87 per cent and 8.33 per cent of the farmers from the categories of marginal and small farmers were taking more than a single crop before the establishment of the sugar factory. It was 5.41 per cent and 8.00 per cent in the case of the medium and the big farmers. The proportions

have increased to 42.39 per cent, 43.33 per cent, 56.76 per cent, and 60.00 per cent respectively in the case of four categories of farmers. From Table 3.8 to 3.11 it is very clear that at the later time point the proportion of the multiple croppers in the third and the fourth categories of farmers is more than that in the first two categories.

3.26 (2) Use of Improved Seeds: During the last 25 years the Agricultural Universities and various Research Institutions have developed a number of improved seeds of various crops. In order to encourage the use of these seeds, various Government agencies have been trying to introduce the same to farmers. But it is generally observed that farmers are reluctant to follow their advice initially. On the other hand, when new methods of whatever type are adopted by a co-operative sugar factory, farmers not only believe in them but they follow them quickly being in close contact with the factory. The sugar factory has been introducing the use of improved seeds of sugarcane, wheat, bajra, jowar, cotton, etc. The factory is having its own farm in which the factory has been demonstrating the use of seeds, fertilizers and manures. In 1975-76 a pilot scheme was undertaken for the introduction of improved seeds of wheat and special experts were appointed by the sugar factory. In this scheme 310 farmers participated who used improved seeds for 1021 acres of land.<sup>11</sup>

(a) Hybrid Seeds of Jowar, Bajra, etc.: Prior to the

sugar factory, very few farmers were using hybrid seeds of jowar, bajara, maize, etc. The percentage of users of hybrid seeds was 7.61 per cent among the marginal farmers; while it was 5.0 per cent in the case of the small farmers. In the case of marginal and big farmers it was 5.41 per cent and 6.0 per cent respectively. After the establishment of the sugar factory the proportion from first to fourth categories of farmers increased to 51.09 per cent, 48.33 per cent, 67.57 per cent and 74.0 per cent respectively.

(b) Use of Hybrid Seed of Cotton: There was no cotton cultivator before and after the establishment of the sugar factory among the marginal farmers. The big farmers only were using hybrid seed of cotton. Before the sugar factory the percentage of such farmers was 4.0 and it increased to 32.00 per cent after the sugar factory. The small and marginal farmers were cultivating cotton even before the establishment of the sugar factory. But they were not using hybrid seed of cotton. After the establishment of the sugar factory, 16.66 per cent and 35.14 per cent of the farmers respectively from the category of small and marginal farmers have been using the hybrid seed of cotton.

(c) Improved variety of wheat: Prior to the factory, the percentages of users of the improved seeds of wheat among the marginal and small farmers were 4.35 and 1.67 respectively. This percentage among the big farmers was only 6.0. There were 5.41% of farmers using the improved seed among

the category of medium farmers. Now the percentages have increased to 57.71, 48.33, 72.97 and 80.00 for the first to fourth categories of farmers respectively. The percentage of the fourth category of farmers is the highest at both the time points.

(3) Use of Fertilizer: With the change in cropping pattern, the use of chemical fertilizers has also increased. The sugar factory has been supplying chemical fertilizers to the farmers on credit. The shareholders of the factory also get molasses and presumed at a very low rate. Now the farmers are acquainted with the fact that to get higher yields of crops like sugarcane, cotton, wheat, jowar, bajra, etc., it is necessary to make adequate use of chemical fertilizers and of manures. This naturally induced them to use fertilizers in greater quantities than before.

Previously a small number of farmers were using chemical fertilizers. Now the medium and big farmers are using more fertilizers. As compared to other size groups of holding, the proportion of fertilizer users is more in the case of medium and big farmers i.e. 78.38 per cent and 80 per cent respectively.

(4) Use of Manure: The proportion of farmers, in all the categories using green manure was very small. As compared to the use of chemical fertilizers and compost manure, the use of green manure is very low.

Excepting for only the small farmers, the farmers in

the rest of the categories were using compost. Out of the total farmers, 2.10 per cent were using compost. This proportion has now increased to 30.54 per cent. From Tables 3.8 to 3.11 it is clear that a large percentage of the farmers in the third and fourth categories have been using compost manure as compared to the farmers in the first and the second categories.

3.28 (5) Use of Pesticides and Insecticides: With the introduction of hybrid and improved seeds, the farmers of the region became acquainted with the fact that the use of pesticides and insecticides also is essential along with the use of water and fertilizers for higher yields. If a farm remains free of pests and diseases, the quantity and quality of a crop is bound to be high. The factory also provides insecticides and pesticides to the farmers in time to enable them to keep the crops healthy and disease-free. At present quite a large number of farmers are using the insecticides and pesticides.

(a) Use of Pesticides and Insecticides before sowing

It is found that before the establishment of sugar factory, farmers in the first and fourth categories were using pesticides before sowing. Now the percentage of users among the relatively smaller farmers is less than that among large landholders. It can be observed from Table 3.11 that 62.0 per cent of the farmers from the fourth category have started using pesticides before sowing, while the percentage

of users in other size groups of holding is relatively less.

(b) Use of Pesticides and Insecticides after sowing

The use of pesticides and insecticides after planting or sowing is necessary for the healthy growth of crops. Before the establishment of the sugar factory all farmers except the farmers from the second category were using it. The percentages of users for the first, third and fourth categories were 2.17, 2.70 and 4.00 respectively. After the establishment of the sugar factory the proportion of users of pesticides and insecticides has increased among all the four categories.

3.29 (6) Scientific Method of Irrigation

Prior to the establishment of the sugar factory 2.00 per cent of the farmers from the fourth category were using this method. But after the establishment of the factory some farmers from the other categories have started using the scientific method of irrigation. The percentages of the users of the method in the first to the fourth categories are 32.6, 26.67, 48.64 and 42.00 respectively.

3.30 (7) Practice of Mechanical Farming

This means the use of tractor for deep ploughing, harrowing and seed drilling as also the use of bulldozer for levelling land, etc. We have already seen from Table 3.7 that prior to the establishment of the factory only 2.93 per cent of the farmers in the region were practising mechanical farming. It means 97.07 per cent of the farmers

were using old type of equipment for the cultivation of land. At that time some big landholders owned tractors and the use of tractor was limited only to their farms. Occasionally, the small land holders hired tractors from the big landholders. After the establishment of the sugar factory some shareholders of the factory were given tractors through the Central Bank of India. The poor farmers who could not have their own tractors, could hire them from the sugar factory or from the big landholders. After the establishment of the sugar factory some shareholders of the factory were given tractors through the Central Bank of India. The poor farmers who could not have their own tractors, could hire them from the sugar factory or from the big landholders. The tractors are now also being used for the purpose of transport of agricultural and other types of goods.

The proportion of the cultivators adopting mechanical farming in the four categories respectively were 1.08 per cent, 1.67 per cent, 8.11 per cent and 4 per cent. Now the proportions have increased to 16.30 per cent, 23.33 per cent, 43.24 per cent and 36.00 per cent respectively in the first, second, third and fourth categories of farmers.

3.31 From Tables 3.7 to 3.11 we can conclude that after the establishment of the sugar factory the farmers have been turning more and more towards modern methods of agriculture. Thus it can be definitely said that with adequate provision

of irrigation and credit facilities, a larger number of farmers will adopt modern methods of agriculture which will lead to increased agricultural productivity.

The change in the cropping pattern and the application of modern methods of cultivation have increased demand for various agricultural inputs and equipments. Change in the demand for these inputs like fertilizers, seeds, pesticides, insecticides, other types of agricultural inputs and equipments, has increased the number of supply agencies. We shall now turn to the aspect of changes in the supply agencies.

3.32 Previously a number of farmers were using home-made inputs and the traditional equipments. The main reason was that the financial condition of the farmers was not enough to afford the purchase of the agricultural inputs and modern equipments from outside. In addition, it was due to the ignorance and doubts of farmers about the quality of these inputs. Furthermore, they had no knowledge of the application of improved seeds and equipments. Hence the farmers were using home-made and only home-made seeds, manure and traditional equipments. Sometimes, they used to purchase some agricultural implements or hire them from co-operative societies. At the time of establishment of the sugar factory taluka Panchayat Samitis were just coming into existence, but many farmers were ignorant of the functions of the Panchayat Samitis. Only a few farmers



consulted the Gramsevak and Panchayat Samitis.

Due to the establishment of the sugar factory the contact between the farmers on the one hand, and the leaders of the sugar factories and of Zilla Parishad on the other, increased gradually. The farmers became acquainted with improved seeds, chemical fertilizers, modern methods of cultivation, functions of co-operative societies and the Panchayats, etc. The farmers were also provided credit facility for the purchase of agricultural inputs and equipments by the sugar factory. It has already been mentioned earlier in this chapter that the sugar factory has been implementing a special scheme of providing tractors to the cultivators. Thus, after the establishment of the sugar factory, the demand for the agricultural inputs and agricultural implements has increased, which resulted in the increased number of supplying agencies.

3.33 Table 3.12 indicates the changes in the supply agencies of agricultural inputs and implements as also the tendency of the cultivators to purchase from various supply agencies, after the establishment of sugar factory.

(1) Pesticides and insecticides: Previously, the use of pesticides and insecticides was much less. From the table it is clear that farmers were purchasing them only from co-operative credit societies. After the establishment of the sugar factory, the use of this input and also the number of supply agencies have increased. People

**Table 3.12.** Classification of surveyed families of cultivators according to their purchase of agricultural inputs and equipments from various supply agencies before (1961-62) and after (1975-76) the establishment of the sugar factory

Item	Before and after the establishment of the sugar factory	Type of supply agencies									Total
		Home-made	Coop. society	Home-made and coop. society	Market	Sugar factory	Society and sugar factory	Society and Panchayat Samiti	Society, P. Samiti S. factory	Non-users	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1. Pesticides	Before	-	6 ( 2.51)	-	-	-	-	-	-	233 (97.49)	239 (100.00)
	After	-	67 (28.03)	-	7 ( 2.93)	15 ( 8.28)	34 (14.22)	12 ( 5.02)	7 ( 2.93)	97 (38.59)	239 (100.00)
2. Seeds	Before	60 (25.10)	159 (66.53)	15 ( 6.28)	5 ( 6.28)	-	-	-	-	-	239 (100.00)
	After	25 (10.46)	86 (35.98)	11 ( 4.60)	4 ( 1.67)	1 ( 0.42)	86 (35.98)	11 ( 4.60)	15 ( 6.28)	-	239 (100.00)
3. Fertilizers	Before	31 (12.97)	15 ( 8.28)	6 ( 2.51)	6 ( 2.51)	-	-	-	-	181 (75.73)	239 (100.00)
	After	10 ( 4.17)	11 ( 4.69)	87 (36.41)	5 ( 2.09)	1 ( 0.42)	87 (36.41)	11 ( 4.60)	15 ( 6.28)	12 ( 5.02)	239 (100.00)
4. Tractor	Before	2 ( 0.84)	-	-	2 ( 0.84)	-	-	-	-	235 (98.22)	239 (100.00)
	After	8 ( 3.35)	-	-	47 (19.66)	8 ( 3.35)	-	-	-	176 (73.34)	239 (100.00)
5. Bulldozer	Before	-	-	-	2 ( 0.84)	-	-	-	-	237 (99.16)	239 (100.00)
	After	-	-	-	-	13 ( 5.45)	-	-	-	226 (94.55)	239 (100.00)
6. Blasting machine	Before	-	-	-	3 ( 1.26)	-	-	-	-	236 (98.76)	239 (100.00)
	After	-	-	-	20 ( 8.34)	-	-	3 ( 1.26)	-	216 (91.40)	239 (100.00)
7. Agricultural Implements	Before	180 (75.31)	45 (18.83)	14 ( 5.86)	-	-	-	-	-	-	239 (100.00)
	After	110 (46.04)	24 (10.04)	10 ( 4.17)	6 ( 2.51)	1 ( 0.42)	64 (26.78)	12 ( 5.02)	12 ( 5.02)	-	239 (100.00)

Bracketed figures indicate percentages of unbracketed figures in columns 3 to 11 to the total in the last column.

started purchasing them from the market, Panchayat Samiti and sugar factory. The proportion of the purchasers from the sugar factory and cooperative credit societies is relatively greater. It is 8.28 per cent and 28.03 per cent respectively.

(2) Seeds: Before the establishment of the sugar factory 159 farmers were purchasing seeds from co-operative credit societies and 60 farmers were using home-made seeds; for instance, seeds of jowar, bajra and wheat, etc. After the establishment of the sugar factory the percentage of home-made seed-users declined from 25.10 per cent to 10.46 per cent and the proportion of the purchasers from co-operative credit societies declined from 66.53 per cent to 35.98 per cent. The farmers have started purchasing these inputs from the market, the Panchayat Samiti and the sugar factory. The increased income of farmers and availability of improved seeds which they could not get from the societies have enabled them to purchase the seeds from the market.

(3) Fertilizers and Manures: From Table 3.12, it is seen that 12.97 per cent and 8.26 per cent of the farmers surveyed depended on credit societies and home-made fertilizers and manures respectively before the establishment of the sugar factory these percentages have declined to 4.17 per cent and 4.69 per cent respectively. Now some farmers have started purchasing the inputs from the sugar factory and Panchayat Samiti.

(4) Tractors: Prior to the establishment of the factory the farmers were dependent only on the private tractors. Now they can hire them from the sugar factory. Previously only 0.84 per cent of the farmers were using their own tractors for cultivating land. At the second point of time it is found that 3.35 per cent of the farmers have their own tractors and 19.66 per cent of the farmers hire them from the market.

(5) Bulldozers: Previously, no private agency in the region was supplying bulldozers. Farmers had to depend only on the Government bulldozers units. Now the sugar factory has been providing this facility.

(6) Blasting Machine: Farmers were making use of the traditional method of gunpowder available from the private agencies for blasting. Now they can hire blasting machine from Panchayat Samiti and the sugar factory.

(7) Agricultural implements: Before the establishment of the sugar factory, 75.31 per cent of the farmers had their own agricultural implements and 13.83 per cent were hiring them from the co-operative credit societies. The farmers owned old types of implements. After the establishment of sugar factory the farmers could get the modern type of implements from the various supply agencies. Thus, from the table we can observe that the number of agencies supplying agricultural inputs has increased after the establishment of the sugar factory.

3.34 We conclude that after the establishment of the sugar factory, the cultivable area under irrigation has increased as a result of the increased well and lift irrigation. With the increase in the irrigation facilities, the cropping pattern in the region has changed. The area under jowar, bajra, wheat, groundnuts and cotton has decreased. On the contrary, the area under sugarcane, fruits, vegetables, lucerne and other crops like rice, maize, green fodder, gram, kulith, math, etc., has increased. As a result of the changed cropping pattern, the farmers started adopting modern methods of farming. The adoption of modern methods has created demand for the agricultural inputs like improved variety of seeds, fertilizers, pesticides and agricultural implements like iron ploughs, harrows, seed drillers, tractors, bulldozers, blasting machines, oil engines, electric motors and so on. The increased demand for these inputs and agricultural implements has induced the opening of a large number of supply agencies. The increased irrigation facilities and changed cropping pattern has had also a significant impact on the incomes and standard of living of the farmers. These aspects are studied in the next chapter.

FOOTNOTES

1. Annual Report of the Sanjivani Cooperative Sugar Factory, 1970-71, p. 9. (N.B. The Annual Report of the Sanjivani Co-operative Sugar Factory is hereafter referred to as "The Annual Report" for convenience.
2. Annual Report, 1968-69, p. 8.
3. Annual Report, 1969-70, p. 7, 1970-71, pp. 7, 9.
4. Annual Report, 1970-71, p. 9.
5. Annual Report, 1969-70, 1970-71 and 1971-72, pp.66-67.
6. Annual Report, 1973-74, p. 14.
7. Annual Report, 1975-76, pp. 6 and 7.
8. Annual Report, 1973-74, p. 9.
9. Annual Reports, 1973-74, p. 9 and 1975-76, p. 7.
10. Annual Report, 1975-76, p. 7 and personal discussion with the agricultural assistants appointed by the factory.
11. Annual Report, 1975-76, p. 7.

## CHAPTER IV

### IMPACT OF THE SUGAR FACTORIES ON AGRICULTURISTS

4.1 In the last chapter we have seen the impact of sugar factory on agriculture. The impact on agriculture ultimately influences the standard of living of farmers. In this chapter the impact of sugar factory on the economic conditions of farmers is analysed. The families of farmers surveyed are classified according to the number of family members. Table 4.1 shows the total population covered in the survey.

Thus the number of families surveyed on the basis of which the picture of the impact of the sugar factory on the lives of farmers is to be analysed, is quite exhaustive.

#### 4.2 Change in the Source of Family Income of Cultivators

After the establishment of the sugar factory, the sources of income have increased to some extent raising the standard of living of farmers in the region. It has already been explained that probably the increase in the area of sugarcane is the main reason for the increase in the sources of income of cultivators.

The second reason for this rise in the sources of income of the farmers is the establishment of the sugar factory. It is explained with the help of data collected and presented in Table 4.2 while the actual increase in

**Table 4.1.** The classification of families of cultivators according to the family members and total population covered

Family size according to number of families	Families in the group	Total population	Family size according to number of families	Families in the group	Total population
1	4	4	13	7	91
2	6	12	14	4	56
3	16	48	15	5	75
4	23	92	16	2	32
5	31	155	17	1	17
6	29	174	18	2	36
7	27	189	19	2	38
8	28	224	20	1	20
9	22	198	21	2	42
10	9	10	23	1	23
11	10	110	33	1	33
12	6	72	Total	239	1831



**Table 4.2.** Classification of the families of cultivators in the different size groups of holding according to their sources of income before (1961-62) and after (1975-76) the establishment of sugar factories

Size group of holdings	Point of time	No. of families in the group	Sources of income					
			Land	Service	Hiring of agricultural implements	Subsidiary occupations	Labour	Pension and Honorarium
1	2	3	4	5	6	7	8	9
Upto 5.00 acres (Marginal farmers)	Before	92 (100.00)	91 (98.91)	1 (1.09)	-	5 (5.45)	60 (65.22)	-
	After	92 (100.00)	92 (100)	13 (14.13)	-	12 (13.04)	55 (59.78)	-
5.1 to 10.00 acres (Small farmers)	Before	60 (100.00)	60 (100)	-	-	4 (6.67)	27 (45.00)	-
	After	60 (100.00)	59 (98.33)	2 (3.33)	2 (3.33)	6 (10.00)	28 (28.67)	-
10.1 to 15.00 acres (Medium farmers)	Before	37 (100.00)	37 (100)	1 (2.70)	-	3 (8.11)	7 (15.91)	-
	After	37 (100.00)	37 (100)	5 (13.51)	1 (2.70)	8 (21.62)	4 (10.81)	2 (5.40)
15.1 acres and above (Big farmers)	Before	50 (100.00)	50 (100)	1 (2.00)	-	3 (6.00)	10 (20.00)	-
	After	50 (100.00)	50 (100)	7 (14.00)	2 (4.00)	7 (14.00)	8 (16.00)	-
Total	Before	239 (100.00)	238 (99.58)	3 (1.25)	-	15 (6.28)	104 (43.51)	-
	After	239 (100.00)	238 (99.58)	27 (11.30)	5 (2.09)	33 (13.81)	95 (39.75)	2 (0.84)

Figures in parenthesis indicate percentages of unbracketed figures in the columns 4 to 9 to the total in column No. 3.

income by every source is shown later in Table 4.3.

The Sources of Income

(1) Land: Out of the 239 families of cultivators, 238 are getting income from this source. This is the main source of income. Prior to the establishment of the factory, out of 92 families in the category of marginal farmers, 91 families were getting income from this source and one family was landless. As for the small farmers there were sixty families who were getting income from their land but now one farmer has become landless from the group, because of the construction of percolation tank on the land of the family. In the case of the medium and big farmers all the cultivators were getting income from the land. Their situation so far as this source of income is concerned, has remained unchanged.

(2) Service: After the establishment of the sugar factory some private transport agencies, banks, primary schools, secondary schools, hospitals, dairies, etc., came into existence and some persons from the cultivator families could get jobs in these various concerns. Besides these agencies many members of the cultivator families have got employment in the sugar factory. Previously 1.26 per cent of the families were engaged in services. After the establishment of the sugar factory 11.30 per cent of the families have been getting income from services.

(3) Agricultural Implements: Some families provide

agricultural implements to other cultivators on a hire basis. These hiring charges constitute one of the sources of additional income. Generally, families of farmers get income from the hiring out of tractors, plough, harrow, seed-driller, bulls, etc. Prior to the establishment of the sugar factory not even a single family surveyed in the region was getting income from this source. After the establishment of the sugar factory, 2.09 per cent of the families have been getting income from this source.

(4) Subsidiary occupations: The types of subsidiary occupations from which these families have been getting income are sources such as dairy, poultry, hotels, grocery, cycle shops, etc. Before the establishment of the factory 6.28 per cent of the families were getting income from subsidiary occupations. Now 13.81 per cent of the families are getting income from this source. There were only 8.11 per cent of the families from the category of medium farmers who had formerly some income from subsidiary occupations. Now the percentage has increased to 21.62. This percentage increase is higher as compared to the other categories of farmers. But a few families from the category of small farmers are also getting income from this source.

(5) Labour - The holders of dry land and small land-holders get less income from land. In order to satisfy basic necessities and to maintain their standard of living they have to work as manual labourers. 43.51 per cent of

the families surveyed had to work as labourers for subsistence before the establishment of the factory. Now the percentage has decreased to 39.75. Thus 3.76 per cent of the families from all the size-groups of holding are getting income from land as a result of which they do not feel any more need to work as manual labour. However, 16 per cent of the families from the category of big farmers are doing manual labour; probably these families are not getting sufficient income from land. From this, one can say that after the establishment of the sugar factory, income from the cultivators from other sources might have increased to the extent where they can maintain their standard of living without working as casual labourers. Further, it is also clear from Table 4.2 that the percentage of families working as agricultural labourers, decreased in all the categories of farming families.

(6) Pension and Honorarium : The retired persons from the cultivator families get pension after their retirement and the persons like 'Kangar Patil' of a village get honorarium. However, it is clear that these sources of income are not related to the impact of sugar factory.

In brief, we come to the conclusion that the sources of income for cultivators have increased due to the establishment of the sugar factory.

#### 4.3 Change in the Family Income of Farmers

We have already seen that after the establishment of

the sugar factory a change in the cropping pattern took place. The local farmers started cultivating cash crops like sugarcane, fruits, vegetables, etc., and the area under the traditional crops like jowar, bajra and wheat decreased. The change in the cropping pattern must have increased the income of families from agriculture. Then again, apart from the increase in agricultural income, other sources of additional income emerged after the establishment of the sugar factory.

From Table 4.3 we can get the idea of the change in family income of farmers in terms of money.

4.4 (1) Income from land: After the establishment of the sugar factory money income from land of the families from the category of marginal farmers increased by 107.26 per cent. But its proportion to the total income decreased from 78.70 per cent to 69.31 per cent. The proportion of income from land to the total income of the families from the category of small farmers was 82.38 per cent. But it has decreased to 73.97 per cent. However, their income from this source has increased by 121.72 per cent after the setting up of the sugar factory. A similar feature is observed in the case of families from the category of medium and big farmers. Their net income from this source has increased by 141.52 per cent and 156.55 per cent respectively. At the same time the proportion of the income from land in the total income of the families in these groups has decreased

**Table 4.3.** Money income of the farmers from various sources before (1961-62) and after (1975-76) the establishment of the sugar factory in the various size groups of holdings

(Figures of income are in Rupees)

Size groups of holding	Particulars*	No. of families in the group	Different sources of income						Total yearly income of the family in the group	Average Annual Income per family in the group
			Land	Services	Agricultural imple-ments	Subsi- diary occupa- tions	Labour	Pension and hono- rarium		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Upto 5.00 acres (Marginal farmers)	Before	92	1,38,500 (78.70)	2,400 (1.36)	-	3,400 (1.93)	31,700 (18.01)	-	1,76,000 (100)	1913.04
	After	92	2,87,050 (69.31)	44,700 (10.80)	-	23,500 (5.67)	58,900 (14.22)	-	4,14,150 (100)	4501.63
	Net in-crease(%)		107.26	1763	-	591	86	-	135.31	135.31
5.1 acres to 10.00 acres (Small farmers)	Before	60	1,41,600 (82.38)	-	-	16,200 (9.42)	14,100 (8.20)	-	1,71,900 (100)	2865.00
	After	60	3,13,950 (73.97)	7,800 (1.84)	35,000 (8.24)	17,300 (3.79)	30,400 (7.16)	-	4,24,450 (100)	7074.17
	Net in-crease(%)		121.72	-	-	130.25	115.60	-	146.92	146.92
10.1 acres to 15.00 acres (Medium farmers)	Before	37	1,48,600 (91.45)	4,000 (2.47)	-	6,000 (3.68)	3,900 (2.40)	-	1,62,500 (100)	4391.89
	After	37	3,58,900 (78.19)	28,600 (6.23)	18,000 (3.92)	47,500 (10.35)	4,500 (0.98)	1,500 (0.33)	4,59,000 (100)	12405.41
	Net in-crease(%)		141.52	615	-	691.67	15.39	-	182.46	182.46
15.1 acres and above	Before	50	2,94,700 (95.68)	4,000 (2.30)	-	5,000 (1.62)	4,300 (1.40)	-	3,08,000 (100)	6160.00
	After	50	7,56,050 (88.55)	36,300 (4.25)	38,000 (4.45)	16,300 (1.91)	7,200 (0.84)	-	8,53,850 (100)	17077.00
	Net in-crease(%)		156.55	807.50	-	226	67.44	-	177.22	177.22
Total or Overall charge	Before	239	7,23,400 (88.39)	10,400 (1.27)	-	30,600 (3.74)	54,000 (6.60)	-	8,18,400 (100)	3424.27
	After	239	17,15,950 (79.76)	1,17,400 (5.46)	91,000 (4.23)	1,24,600 (5.79)	1,01,000 (4.69)	1,500 (0.07)	21,51,450 (100)	9001.88
	Net in-crease(%)		137.21	1028.85	-	307.19	87.04	-	162.88	162.88

Figures in parenthesis indicate percentages of the unbracketed figures in columns 4 to 9 to total income given in column 10.

\* Particulars: After = After the sugar factory. Before = Before the sugar factory.

from 91.45 per cent to 78.19 per cent and from 95.68 per cent to 88.55 per cent respectively. The income from land of the farmers in all the four categories was formerly 88.39 per cent of the total which decreased to 79.76 per cent after the establishment of the factory. However, the increase in the income from agriculture is 137.21 per cent.

From table 4.3 it is clear that money income of all the families of cultivators from land has increased. The income of the families from all categories has shown a progressively increasing trend. Higher the size group of holding, larger the increase has been in income from land.

Prior to the establishment of the sugar factory, the proportion of the income from land was greater. But it has increased relatively after the establishment of the sugar factory.

4.5 (2) Income from services: Here income from services includes income from all types of services in the sugar factory and from the services in other institutions owned privately or by the Government. Before the establishment of the sugar factory some persons from the cultivator families were in the services of other private and public concerns. Due to the establishment of the sugar factory, local farmers could sell their services to the factory. It has been observed that among the factory labourers, the proportion of the persons from the surveyed families

employed in the factory is quite high. In brief, we can say that, the income of farmers from the services has also increased due to the establishment of the sugar factory. Out of the categories of the families of farmers, proportion of income from services to the total income of the marginal farmers has increased from 1.36 per cent to 10.80 per cent. This increase in the proportion of income from services for them is higher than for the farmers in the other categories. Previously the families of the small farmers were not earning any income from services. But after the establishment of the sugar factory, they started earning some income from this source. The net income from services of the families of medium and big farmers increased by 615.0 per cent and 807.50 per cent. The overall increase in the income from service is 1028.85 per cent. Before the establishment of the sugar factory, the proportion of the income from service to the total income was 1.27 per cent which increased to 5.46 per cent after the establishment of the factory.

#### 4.6 (3) Income from agricultural implements

Another source of income to the farmers is the charges on the use of agricultural implements such as ploughs, harrow, bullock carts, bullocks and tractors, etc., which are sometimes supplied on hire basis to other cultivators. Before the establishment of the sugar factory very few families had tractors. After the establishment of the



sugar factory, the number of tractor-owners increased. As noted in the third chapter, the factory has helped the farmers in the region in a number of ways in this respect. The factory has been working as a guarantor of the shareholders to the Central Bank of India in purchasing the tractors on a credit basis. This helped the farmers to improve their standard of living because the tractor constitutes an additional source of income. So income from this source has increased only after the establishment of the sugar factory. At present 4.23 per cent of the total income of the surveyed families is derived from this source which did not exist before the establishment of the factory.

4.7 (4) Subsidiary occupations: The subsidiary occupations include grocery, textile shops, bicycle shops, dairy, poultry, hair-cutting saloons, etc. Before the establishment of the sugar factory, income from the subsidiary occupations was very low. After the establishment of the sugar factory income from these occupations has increased evidently due to the increased demand for the related goods and services. During the survey it is observed that the families who were having subsidiary occupations previously, expanded their occupations and some families entered these occupations. Thus after the establishment of the sugar factory the income from subsidiary occupations has increased.

Out of the total income, farmers were getting 3.74

income from the subsidiary occupations. After the establishment of the sugar factory it increased to 5.79 per cent. The absolute increase of this income is by 307.19 per cent in the case of all families in the different size-groups of holding. This increase of the income is by 5.91.0 per cent, 130.25 per cent, 691.67 per cent and 226.0 per cent respectively for the four categories of families. Previously, out of the total income, the income from this source, for the marginal farmers was 1.93 per cent. Now this proportion has increased to 5.67 per cent. In the case of the small farmers it was 9.42 per cent which now has decreased to 8.79 per cent. In the case of medium and big farmers income from this source was 1.68 per cent and 1.62 per cent respectively which has increased to 10.35 per cent and 1.91 per cent respectively. Out of these four categories of families it seems that the families from the category of medium farmers get relatively more of this income than the families belonging to other categories.

4.8 (5) Income from labour: Some farmers have to work on daily wages at the farms of other cultivators to supplement their incomes. Even when families have land, their acreage under irrigation is very small. Similarly, some families do not have irrigation facility even for small pieces of land as a result of which they have to depend upon the monsoon. If the rainfall is good the farmers get

sufficient income to support their families. But if there is inadequate rainfall the families do not get sufficient income for subsistence and they are forced to work as manual labourers. After the establishment of the sugar factory, the irrigation facilities have increased to some extent which has resulted in increasing income from land. So the proportion of the farmers working as manual labourers has to some extent declined. Hence we see from the table that proportion of income to the total income from this source has declined from 6.60 per cent to 4.69 per cent after the sugar factory. But in the case of all the families taken together income from this source has increased by 87.04 per cent. Another thing to note is that the income from this source has increased by 86.0 per cent, 115.60 per cent, 15.39 per cent and 67.44 per cent respectively for the four categories of families. Previously, the proportion of income from this source to total income was 18.01 per cent, 8.20 per cent, 2.40 per cent and 1.40 per cent for the first, second, third and fourth categories of families. But after the establishment of the sugar factory this proportion has declined to 14.22 per cent, 7.16 per cent, 0.98 per cent and 0.84 per cent respectively.

4.9 (6) Pension and Honorarium: Some members of the farming families who are pensioners get pensions and some are getting honorarium of Patilki (village headman) from the State Government. Of course, these incomes have no

relation to the establishment of sugar factory. However, some farmers in the third size group of holding are getting income from this source also. The income is not significant.

4.10 (7) Annual average income : Income from the various sources such as land, services, hire of implements, subsidiary occupations, labour, pension and honorarium is consolidated groupwise and the consolidated income is then divided by the number of families in the respective groups. We then get average income per family in the respective size groups of land holding. Previously it was Rs. 3,424.27. Now it has increased to Rs. 9001.88. The net increase in the average income is of 162.88 per cent.

The average income per family of a marginal farmer was Rs. 1,913.04, before the establishment of the sugar factory. After the establishment of the sugar factory the average income increased to Rs. 4,501.63. It means that the average income of this group increased by 135.31 per cent after the establishment of sugar factory.

In the case of the small farmers, the annual average income of a family was Rs. 2,865.00 which increased Rs. 7,074.17 after the establishment of sugar factory. The annual average income of a family in this group has increased by 146.92 per cent. The average income of a family, in the case of medium farmers was Rs. 4,391.89 which has increased to Rs. 12,405.41. Thus the income

# CHANGE IN THE ANNUAL AVERAGE INCOME OF THE FARMERS

SCALE : Rs.1000 = 1 Cm.

BAR DIAGRAM - I

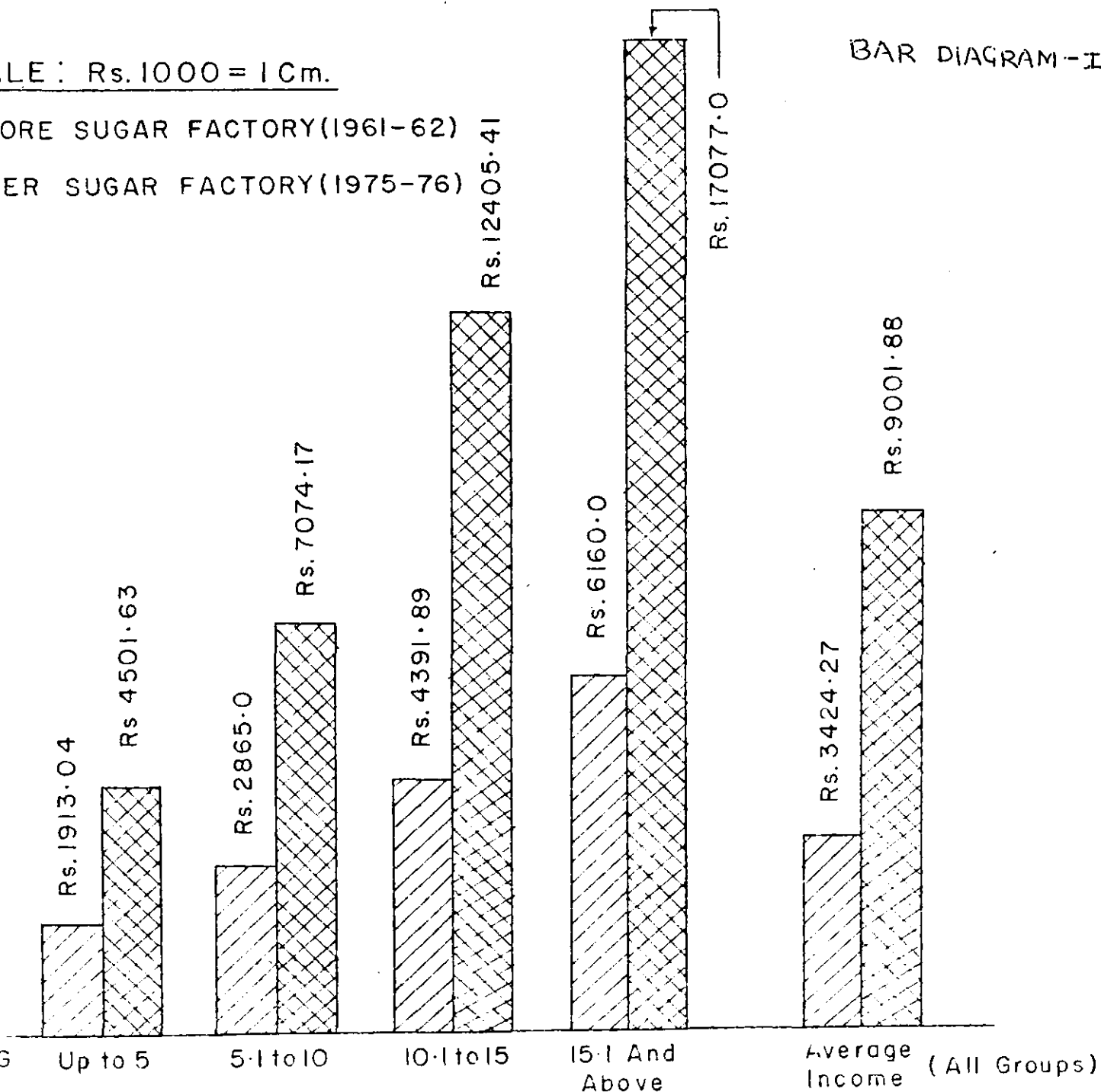


BEFORE SUGAR FACTORY (1961-62)



AFTER SUGAR FACTORY (1975-76)

LAND HOLDING  
GROUPS  
IN ACRES



increased by 182.46 per cent. Income of a family in the fourth size group of holding was Rs. 6,160.00. It has increased to Rs. 17,077.00. The increase in the average income of the families in this group is of 177.22 per cent.

The increase in the average income of a family from second landholding group is a little higher than the increase in the average income of a family from the first landholding group. The medium farmers have enjoyed the highest increase in the average income of a family, followed by the big farmers. The change in the average annual income of farmers is shown with the help of a bar diagram-I.

After the establishment of the sugar factory, some families of cultivators could start subsidiary occupations, such as grocery, hotels, cycle shops, dairy, poultry, etc. Similarly, those who were carrying on their traditional occupations along with agriculture, have been getting more income from the same. Hence their income from all the sources together has also increased. But the percentage increases in the income from various sources are different. From Table 4.3 we can conclude that the proportion of increase in the income from subsidiary occupations to the total increase in income is higher than that in any other sources of income followed by that in the income from services the income from land and the income from labour in that order. In brief, due to the changes in cropping pattern and the expanded scope for the traditional occupa-

tions, the total family income of farmers has increased after the establishment of the sugar factory.

#### 4.11 Change in the Real Income of Farmers

From Table 4.3 it is seen that money income of farmers has increased by 162.88 per cent over the period under study. What is more important is however the change in real income. To find out the change in real income the effect of change in price level must be eliminated. To find out the change in the price level during the period 1961-62 to 1975-76 weighted index numbers of wholesale prices of the agricultural commodities are specially constructed in both the periods i.e. before (1961-62) and after (1975-76) the establishment of the sugar factory by taking into account those commodities which are being cultivated in this region. The prices of jowar, bajra, wheat, cotton, groundnut, gram, safflower, gur and sugarcane are taken into account because these are the main crops being cultivated in this region (see Appendix II). The wholesale prices and quantities of these commodities are obtained from the Marketing Committee of Kopergaon taluka for both the years except for sugarcane and cotton for 1975-76. The quantity of sugarcane and its price for the year 1975-76 is obtained from the Sanjivani Co-operative Sugar Factory. The quantity for the 1961-62 is estimated on the grounds of per acre productivity of sugarcane given in the Season and Crop Report of Maharashtra State, 1962-63. The price of sugar-

cane given by the Kopergaon Cooperative Sugar Factory is presumed as the standard price for the estimated quantity of sugarcane in the year 1961-62. Likewise the quantity of cotton for the year 1975-76 is estimated on the per acre average yield given in the Season and Crop Report of Maharashtra State, 1974-75. The price of cotton in the year 1975-76 under Government monopoly procurement is taken as standard price for the quantity of cotton.

There are some limitations of such an index number constructed to find out the change in the price level over the period (1961-62 to 1975-76). Firstly, in the base year the quantity of sugarcane was not available and in the late year it was not available in the case of cotton. The quantities of both the commodities for the region were calculated on the basis of the productivity given in Season and Crop Report of Maharashtra for the respective years. Apart from this, the price of sugarcane for the base year is obtained from the Kopergaon Cooperative Sugar Factory presumed as the standard price though the price of sugarcane varies from factory to factory. Despite all these limitations on its construction, this weighted index number is adopted to find out the changes in the price level, because it is probably the best under the given conditions.

The method of construction of Weighted Average Price of agricultural commodities produced for the period



is as given below:

$$P = \frac{\sum_{i=1}^n Q_{it} P'_{it}}{\sum_{i=1}^n Q_{it}}$$

where P = weighted price of agricultural products

Q = quantities of different commodities

p' = prices of different commodities produced

t = year of reference

n = number of commodities produced

i = particular commodity

The wholesale price level of the base year is derived in the following way: The annual value of every commodity is computed by multiplying monthly quantity sold by the monthly price and the monthly net values are summed up. The annual quantity of each commodity is obtained by summing up the monthly quantities. Then the annual quantities of all the commodities, as well as the annual values of all the commodities are separately summed up giving up the total quantity of all the commodities and the total annual value of all the commodities. After dividing the total value by the total quantity, the wholesale price level per quintal is found. The average price per quintal in the base year was Rs. 9.28. By adopting the same method, the wholesale price level for the later year (1975-76) is computed. The average price per quintal in the year was Rs. 21.11.

4.12 Then the percentage increase in price level of the agricultural commodities from 1961-62 to 1975-76 is calculated, which is 127.37 per cent. After finding the increase in price level with the help of weighted index number, the real income of farmers is obtained by deflating the money income in the second period and then the percentage increase is calculated on the basis of this deflated figure. The percentage change in the real income of farmers of size groups of holding is shown in Table 4.4.

In the base year the average income for all families was Rs. 3424.27 and in the later year it increased to Rs. 9001.88. Thus the money income of the farmers has increased by 162.88 per cent over the period, whereas the prices of agricultural commodities have gone up by 127.37 per cent. It means that the increase in real income is of 15.62 per cent.

In the case of marginal farmers the increase in real income is only 3.49 per cent. In the case of the small and the medium farmers the increase in real income is 8.59 per cent and 24.23 per cent respectively, whereas it has increased by 21.92 per cent in the case of big farmers. It is to be noted here that the real income of the big farmers has increased proportionately less than that of the medium farmers. This can perhaps be explained by the fact that the latter get more income from the subsidiary occupations than the former in the fourth size group of

**Table 4.4.** Change in the real income of farmers from agriculture and income from all sources after (1975-76) the establishment of the sugar factory

Size group of land holding	Point of time	Average money income from agriculture	Average money income from all sources	Deflation (Average price index of the agri. commodities)	Deflated money income from agriculture	Deflated money income from all sources
1	2	3	4	5	6	7
Upto 5.00 acres (Marginal farmers)	Before After % change	1505.43 3120.11 107.26	1913.04 4501.63 135.31	100.00 227.37	1505.43 1373.26 - 8.84	1913.04 1979.86 + 3.49
5.1 to 10.00 acres (Small farmers)	Before After % change	2360.00 5232.5 121.72	2865.00 7074.17 146.92	100.00 227.37	2360.00 2301.32 - 2.49	2865.00 3111.22 + 8.59
10.1 to 15 acres (Medium farmers)	Before After % change	4016.22 9700.00 141.42	4391.89 12405.41 182.46	100.00 227.37	4016.22 4266.77 + 6.22	4391.89 5455.90 + 24.23
15.1 acres and above (Big farmers)	Before After % change	5894.00 15121.00 156.55	6160.00 17077.00 177.22	100.00 227.37	5894.00 6650.39 + 12.83	6160.00 7510.46 + 21.92
All size groups of Holding	Before After % change	3026.78 7179.71 137.21	3424.27 9001.88 162.88	100.00 227.37	3026.78 3228.72 + 6.65	3424.27 3959.03 + 15.62

holding. It can probably be said that for the farmers from the fourth size group of holding the differential impact of the sugar factory on services and jobs was not very great because of the large holdings of land.

If we take into account the increase in real income with reference to agricultural income as the main source of income of the farmers, the increase in real income is very low. The income from agriculture has increased by 137.21 per cent whereas the rise in the prices of the agricultural commodities is of 127.37 per cent. It means that the real income from agriculture has increased only by 6.65 per cent. But the increase in the real income from agriculture in the case of medium and big farmers is 6.22 per cent and 12.83 per cent respectively. On the contrary, the real income from agriculture has decreased in the case of marginal and small farmers by 8.84 per cent and 2.49 per cent respectively. Hence we can conclude that after the establishment of the sugar factory the income of farmers in the third and the fourth size groups of holding has increased not mainly due to the rise in the income from agriculture but due to the increase in income by other sources. On the other hand in the case of marginal and small farmers it has increased mainly due to the rise in the income from other sources generated by the establishment of the sugar factory. Thus the marginal and the small farmers are relatively less better off

than the farmers in the other two size groups of holding.

#### 4.13 Change in the Income Level

It is generally presumed that after the establishment of the sugar factory inequality in income distribution has increased. Table 4.3 seems to indicate that after the establishment of the sugar factory the relatively bigger landholders have become better off whereas the smaller landholders got much less benefits and hence presumably the gap between the two has increased. The available data are analysed, and the results are shown in Table 4.5. It shows the level of income of the families of the farmers in the different size groups of holding.

#### 4.14 (I) Change in the Income Level of the Families in the First Size Group of Holding (i.e. Marginal Farmers)

There were 92 families in the group before the establishment of the sugar factory. Out of them, 34.78 per cent farmers had income in the range between Rs. 1001 and Rs. 2000, 26.21 per cent in the range of Rs. 2001 and Rs. 3000, 14.13 per cent from Rs. 3001 to Rs. 5000. The remaining 2.17 per cent of families had income only upto Rs. 500. After the establishment of the sugar factory, no family remained in this low income group. The number of families having income between the range of Rs. 500 and Rs. 2000 declined. 20.65 per cent of the families are in the income group between Rs. 3001 and Rs. 5000 and the same proportion is in the income group of Rs. 5001

**Table 4.5. Classification of the families of cultivators according to size group of holding and Income Level before (1961-62) and after (1975-76) the establishment of the sugar factory**

Size groups	Point of time	Upto Rs.500	Rs.501 to Rs.1000	Rs.1001 to Rs.2000	Rs.2001 to Rs.3000	Rs.3001 to Rs.5000	Rs.5001 to Rs.7000	Rs.7001 to Rs.10000	Rs.10001 to Rs.15000	Rs.15001 to Rs.20000	Rs.20001 to Rs. and above	Total of cols 3 to 12 (13)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Upto 5.00 acres (Marginal farmers)	Before	2 (2.17)	21 (22.82)	32 (34.78)	24 (26.21)	13 (14.13)	-	-	-	-	-	92 (100.00)
	After	-	3 (3.26)	21 (22.82)	18 (19.56)	19 (20.65)	19 (20.65)	8 (8.69)	3 (3.26)	1 (1.09)	-	92 (100.00)
5.1 to 10.00 acres (Small farmers)	Before	1 (1.67)	3 (5.00)	21 (35.00)	19 (31.67)	14 (23.33)	2 (3.33)	-	-	-	-	60 (100.00)
	After	-	1 (1.67)	4 (13.34)	13 (21.66)	13 (20.00)	10 (16.66)	7 (11.66)	7 (11.66)	-	2 (3.33)	60 (100.00)
10.1 to 15.00 acres (Medium farmers)	Before	-	-	4 (4.81)	11 (29.73)	12 (32.43)	5 (13.51)	2 (5.41)	3 (8.11)	-	-	37 (100.00)
	After	-	-	-	2 (5.40)	6 (16.22)	5 (13.51)	10 (27.03)	8 (13.51)	3 (8.11)	6 (16.22)	37 (100.00)
15.1 acres and above (Big farmers)	Before	-	-	1 (2.00)	7 (14.00)	14 (28.00)	10 (20.00)	7 (14.00)	9 (18.00)	2 (4.00)	-	50 (100.00)
	After	-	-	-	1 (2.00)	7 (14.00)	4 (8.00)	6 (12.00)	15 (30.00)	8 (16.00)	9 (18.00)	50 (100.00)
Total	Before	3 (1.26)	24 (10.04)	58 (24.26)	61 (25.52)	53 (22.18)	17 (7.11)	9 (3.77)	12 (5.02)	2 (0.84)	-	239 (100.00)
	After	-	4 (1.67)	29 (12.13)	34 (14.23)	44 (18.41)	38 (15.89)	31 (12.98)	30 (12.55)	12 (5.00)	17 (7.11)	239 (100.00)

Notes: (1) Income figures are annual.

(2) Income means income from all sources.

(3) Unbracketed figures indicate cultivating families.

Figures in parenthesis indicate percentage of the unbracketed figures in columns 3 to 12 size group of holding given in column 13.

to Rs. 7000. 8.69 per cent of the families have income between Rs. 7001 and Rs. 10,000 and 3.26 per cent of the families have income in the range between Rs. 10,001 and Rs. 15,000. Only one family has income above Rs.15001. This means the families from the lower income group have shifted to higher income groups.

4.15 (II) Change in the Income Level of the Families in the Second Size Group of Holding (i.e. Small Farmers)

In this group there was one family whose income was below Rs. 500 before the sugar factory came into being. But at present there is not a single family in this income range. 96.67 per cent of the families had income in the range between Rs. 500 and Rs. 5000. 3.33 per cent of the families were in the income range between Rs. 5,001 and Rs. 7,000 and no family was having income above Rs.7,000. After the establishment of the sugar factory the families from the lower income level have shifted to the higher income level. Now there is no family having income below Rs.1000. On the other hand 56.67 per cent of the families have income in the range between Rs.1001 and Rs.5000 and 40.00 per cent of the families have income in the range between Rs. 5001 and Rs.15,000, 3.33 per cent of the families have income above Rs. 20001.

4.16 (III) Change in the Income Level of the Families in the Third Size Group of Holding i.e. medium farmers

In this size-group of holding, 66.97 per cent of the

families were below the income level of Rs. 5000 and 27.03 per cent of the families were in the range of Rs. 5001 to Rs. 15000 before the establishment of the sugar factory. After the establishment of the sugar factory many families have obviously crossed into higher income groups. Now 27.03 per cent of the families have income in the range between Rs. 7,001 and Rs. 10,000. Previously there was no family above the income level of Rs. 15,001. Now 24.33 per cent of the families have the income above Rs.15,001.

4.17 (IV) Change in the Income Level of the Families in the Fourth Size Group of Holding (i.e. Big Farmers)

Prior to the sugar factory there was still one family whose income was below Rs. 2001. Now that family has shifted to a higher income level. Out of the total, 76.00 per cent of the families were in the income range of Rs. 2001 to Rs. 10001 and 22.00 per cent of the families were in the income range of Rs. 10,001 to Rs. 20,000. After the establishment of the sugar factory, a number of families from the lower income group has shifted to the higher income-group. Now there are 18.00 per cent of the families having income more than Rs. 20,001.

4.18 Overall Change in the Income Level of the Farmers

Out of the 239 families, there were 1.26 per cent of the families whose income was below Rs. 500 per annum prior to the establishment of the sugar factory. 83.26 per cent



of the families were in the income range of Rs. 501 to Rs. 5000, and 16.74 per cent of the families were in the income range of Rs. 5,001 to Rs. 20,000 and none above Rs. 20,000. But 15 years after the establishment of the sugar factory, only a few families remained in the lowest income group and the proportion of the families in the higher income groups increased. Now there is not a single family having income below Rs. 500. The number of families in the income range of Rs. 501 to Rs. 5000 has decreased from 83.27 per cent to 46.44 per cent. The proportion of the families in the high income level of Rs. 5001 and above has increased from 16.73 per cent to 53.56 per cent. Before the establishment of the sugar factory there was no family above the income level of Rs. 20,001. But now there are 7.11 per cent of the families in the said income group. Thus from Table 4.5 it is clear that money income of farmers from all size groups of holding has increased. Of course, the bigger landholders have raised their earnings more than the smaller landholders.

The main reason for the change in the income level of the families seems to be the change in the cropping pattern. The farmers started cultivating cash crops like sugarcane to a greater extent in preference to other cash crops. The change in the area under various crops is shown in Table 3.3 in Chapter III. This has enabled the farmers

to make more money in the sugarcane cultivation. The second reason is that some farmers could make additional money from the subsidiary occupations. The increase in the income of cultivators has changed their pattern of expenditure and ultimately standard of living.

#### 4.19 Change in the expenditure pattern of farmers

Previously the farmers were mainly spending on household purchases like food, clothes and utensils, etc. But after the establishment of the sugar factory, their pattern of expenditure has undergone a change. Now they can spend for productive purpose like development of land as also on luxuries. In Table 4.6 the change in the pattern of expenditure of farmers is shown.

#### 4.20 (1) Expenditure on Land Development

Activities: It is found that previously the farmers were not able to spend on long term development of land such as bunding, levelling, construction of wells, etc. They were mainly depending upon the loan facilities from the Co-operative and Land Development Banks. But now they can also spend out of their income for the betterment of land.

From Table 4.6 it is clear that out of the total, 22.59 per cent of the families have spent on the levelling of land. 32.61 per cent of farmers from the first category spend their income on the levelling of land. This is the biggest percentage as compared to the other categories.

**Table 4.6. Classification of the cultivator families according to the use of surplus income**

Size groups of holding	No. of families in the group	Land Developmental activities		Purchase of land	Share purchase			Deposited in Bank	House construction in city	House construction in village	Purchase of furniture	Other expenditure
		Leveling and bunding of land	To dig a well		Shares of factory	Shares of coop. society	Bank Shares					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Upto 5.00 acres (Marginal farmers)	92 (100.00)	30 (32.61)	47 (51.09)	8 (8.70)	34 (36.96)	66 (71.73)	8 (8.70)	6 (6.52)	-	11 (11.96)	5 (5.44)	30 (32.61)
5.1 to 10.00 acres (Small farmers)	60 (100.00)	16 (26.67)	32 (53.35)	4 (6.67)	26 (43.33)	37 (61.67)	3 (5.00)	8 (13.34)	3 (5.00)	8 (13.34)	5 (8.33)	30 (50.00)
10.1 to 15.00 acres (Medium farmers)	37 (100.00)	10 (27.03)	27 (72.97)	9 (24.32)	24 (64.86)	33 (89.19)	2 (5.41)	5 (13.52)	2 (5.41)	7 (18.92)	7 (18.92)	15 (40.54)
15.1 acres and above (Big farmers)	50 (100.00)	11 (22.00)	38 (76.00)	6 (12.00)	31 (62.00)	35 (70.00)	4 (8.00)	5 (10.00)	-	8 (16.00)	11 (22.00)	22 (44.00)
<b>Total</b>	<b>239</b> (100.00)	<b>54</b> (22.59)	<b>144</b> (60.25)	<b>27</b> (11.30)	<b>115</b> (48.12)	<b>171</b> (71.55)	<b>17</b> (7.11)	<b>24</b> (10.05)	<b>5</b> (2.09)	<b>34</b> (14.23)	<b>28</b> (11.72)	<b>97</b> (40.59)

(Figures in parenthesis indicate the percentages of the cultivators' families (columns 1 to 11) to the total number of families according to their expenditure pattern in each category of tenurial families).

It is 22.00 per cent in the case of the fourth category. The number of farmers spending on the construction of wells is also high. Out of the total, 60.25 per cent have spent on the construction of wells. From the table it is clear that the highest percentage of families spending on this item is from the fourth category viz., 76.0 per cent. The lowest percentage of spending on this item is in the first category i.e. 51.09 per cent. The proportion of spending on the construction of wells by the four groups has varied directly with the size of land holding.

4.21 (2) Land Purchase: In addition to the above mentioned purposes some farmers started purchasing more land. Of course, by realizing the limitations of Land Ceiling Act, the farmers in the bigger landholding groups have spent smaller amounts of land purchase. Out of the total cultivator families, 11.30 per cent have spent on this item. Farmers from the third category have spent more on this item compared to the farmers from other categories.

4.22 (3) Share Purchase: With the establishment of the factory some institutions like cooperative bank, cooperative societies, etc., have increased. Out of the total farmers, 48.12 per cent have purchased shares of the sugar factories. The proportion of shareholders of co-operative societies is quite high because the co-operative societies give crop loans and medium term loans for land development.

The percentage of shareholders is the highest among the farmers of the third size group of holding.

From Table 4.6 it is clear that 71.55 per cent of the cultivating families are shareholders of the co-operative credit societies. The percentage of cultivating families who are banks' shareholders is very small. It is only 7.11 per cent. The number of shareholders who have purchased shares of the Ahmednagar District Central Cooperative Bank and the Ahmednagar District Land Development Bank is quite large. The reason for this is that while advancing loans to a farmer the bank first makes the farmer its shareholder and deducts 10 per cent of the amount of the share capital from the loans advanced to him.<sup>1</sup>

4.23 (4) Deposits in Banks: From the information gathered it is found that 10.05 per cent of the farmers are depositing money in Banks. The percentage of depositors among the marginal and small farmers is 6.52 per cent and 13.34 per cent respectively. It is 13.52 per cent and 10.00 per cent in the case of marginal and big farmers.

4.24 (5) Other expenditures: The charges regarding expenditure on house construction and purchase of furniture has already been explained with reference to the housing conditions and household equipments. The other expenditures include expenditure incurred on the education of children, medical purpose and marriage ceremony, etc.

#### 4.25 Change in the Standard of Living of Farmers

It is an accepted proposition that with the increase in income the standard of living also increases. Has this happened in the case of farmers who had increased incomes after the establishment of the sugar factory? As an evident indicator of such an improvement in the standard of living, we can consider the change in the housing conditions as also the changing nature of household equipment. After the establishment of the sugar factory the farmers' contact with the nearby cities increased. Some farmers have built houses at taluka places and at district places. Those who could not afford the construction of good houses in the cities built houses in villages. From the survey it is found that out of the total cultivating families, 14.23 per cent of the families have constructed houses in villages and 2.09 per cent have constructed houses in cities after the establishment of the factory.

#### 4.26 Housing conditions

Generally it is a well-known fact that housing conditions in the rural area are deplorable. In the rural area there is no space problem for houses but there has been almost a total absence of even the essential sanitation and other facilities so essential for the health and comforts of the occupants. Modern conceptions of health and sanitation demand certain standard of housing for decent living. Besides, there are considerations of

environmental sanitation and provision of common amenities such as water supply, drainage, roads, lighting, etc.<sup>2</sup> But many of the houses in the rural areas lack in adequate water supply and sanitary facilities. On this background of housing situation the houses are classified into three categories i.e. houses in good, medium and dilapidated conditions. These three categories of houses can be defined as follows:

(1) Houses in Good Condition: These are houses that contain a drawing room, store-cum-kitchen, bed-room and provision of sanitary blocks, lighting, and ample ventilation, etc. These houses are generally well built.

(2) Medium Houses: Construction of such houses is a kaccha type. The houses are generally built up by clay bricks and they do not have good and proper sanitation facilities. These houses have windows but not adequate or appropriate for proper ventilation.

(3) Dilapidated Houses: The temporary constructed huts and the dilapidated houses in villages are included in this category. Table 4.7 gives information about the housing conditions of farmers.

Prior to the establishment of the sugar factory 22.59 per cent of the families were living in houses in good condition. Now the percentage has increased to 32.64. With the increase in the number of well built and decent houses, the number of families who were living in dilapidated

**Table 4.7.** Classification of cultivators families according to the housing condition before (1961-62) and after (1975-76) the establishment of the sugar factory

Size group of holding  (1)	No. of families in the group  (2)	Families having					
		House in good condition		House in medium condition		Dilapidated Houses	
		Before (3)	After (4)	Before (5)	After (6)	Before (7)	After (8)
Upto 5.00 acres (Marginal farmers)	90	20 (21.74)	24 (26.09)	62 (67.39)	59 (64.13)	10 (10.87)	9 (9.78)
5.1 to 10.0 acres (Small farmers)	60	9 (15.00)	14 (23.33)	49 (81.67)	44 (73.33)	4 (6.67)	2 (3.33)
10.1 to 15.00 acres (Medium farmers)	37	9 (24.32)	18 (48.64)	26 (70.28)	18 (48.64)	2 (5.40)	1 (2.70)
15.1 acres and above (Big farmers)	50	16 (32.00)	22 (44.00)	33 (66.00)	28 (56.00)	1 (2.00)	-
<b>Total</b>	<b>239</b>	<b>54 (22.59)</b>	<b>78 (32.64)</b>	<b>170 (71.30)</b>	<b>149 (62.34)</b>	<b>17 (7.13)</b>	<b>12 (5.02)</b>

Figures in parenthesis indicate percentages of unbracketed figures in columns 3 to 8 to the total in column No. 2.



houses decreased from 7.13 per cent to 5.02 per cent taking all the families together.

4.28 In the case of marginal farmers proportion of the families living in houses in good condition, medium type and dilapidated conditions was 21.74 per cent, 67.39 per cent and 10.87 per cent respectively. But after the establishment of the sugar factory, the proportion of families living in houses in good condition has increased to 26.09 per cent. But it has decreased in the case of families living in medium type of houses and dilapidated houses to 64.13 per cent and 9.78 per cent respectively.

Among the small farmers, the proportion of families living in houses in good condition was 15.00 per cent, which has increased to 23.33 per cent. But the proportion of families living in the medium type and dilapidated houses has decreased from 81.67 per cent to 73.33 per cent and from 6.67 per cent to 3.33 per cent respectively.

Before the establishment of the sugar factory, 24.32 per cent of the families from medium farmers were living in houses in good condition. Now the proportion has increased to 48.64 per cent. The proportion of the families living in the medium type and dilapidated houses has decreased from 70.28 per cent to 48.64 per cent and from 5.40 per cent to 2.70 per cent respectively.

In the case of big farmers the proportion of the families living in houses in good condition has increased

from 32.00 per cent to 44.00 per cent. But it has decreased in the case of the families living in the medium type and dilapidated houses. Now, not a single family from this group of holding is living in a dilapidated house.

From Table 4.7 we can conclude that the proportion of houses in good condition has increased in every size group of holding while the proportion of the medium type and dilapidated houses has decreased. Thus we can possibly say that after the establishment of the sugar factory the housing conditions of the farmers on the whole have improved.

#### 4.28 Household Equipment

The standard of living of a family can be ascertained on the basis of the house in which the family lives and the types of household equipments in use, such as equipments of efficiency, comforts and luxuries. Once the income of a family increases it can be expected to spend some part of the income on comforts and on items of luxury. In the survey, the farmers were asked about the items of household equipments other than utensils in their houses. Table 4.8 shows the proportion of families of cultivators having various types of household equipments in different size-groups of holdings.

(1) Table : Out of the total families surveyed, only one family from the fourth size group of holding was having table before the establishment of the sugar factory. After the establishment of the sugar factory the percentage of the

**Table 4.8.** Classification of the families of cultivators according to their household equipment in the different size groups of holding before (1961-62) and after (1975-76) the establishment of sugar factory

Size group of holding	Point of time	No. of families	Number of families using the equipments									
			Table	Chair	Fan	Electric Heater	Fuel gas	Refrigerator	Radio	Bi-cycle	Motor cycle	Car
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Upto 5.00 acres (Marginal farmers)	Before	92 (100.00)	-	-	-	-	-	-	-	7 (7.61)	-	-
	After	92	5 (5.44)	7 (7.61)	1 (1.08)	-	-	-	29 (31.52)	45 (48.91)	1 (1.08)	-
5.1 to 10.00 acres (Small farmers)	Before	60 (100.00)	-	-	-	-	-	-	-	6 (10.00)	-	-
	After	60 (100.00)	8 (18.33)	9 (15.00)	1 (1.67)	-	-	-	20 (33.33)	40 (66.66)	3 (5.0)	-
10.1 to 15.00 acres (Medium farmers)	Before	37 (100.00)	-	3 (8.11)	-	-	-	-	2 (5.41)	5 (13.52)	-	-
	After	37 (100.00)	9 (24.31)	10 (27.63)	4 (10.81)	-	1 (2.70)	-	18 (48.84)	25 (67.57)	6 (16.22)	-
15.1 acres and above (Big farmers)	Before	50 (100.00)	1 (2.00)	5 (10.00)	-	-	-	-	3 (6.00)	8 (16.00)	1 (2.00)	-
	After	50 (100.00)	18 (36.00)	19 (38.00)	8 (16.00)	1 (2.00)	3 (6.00)	-	35 (70.00)	40 (80.00)	15 (30.00)	2 (6.00)
Total	Before	239 (100.00)	1 (0.42)	8 (3.35)	-	-	-	-	5 (2.09)	26 (10.88)	1 (0.42)	-
	After	239 (100.00)	40 (16.74)	45 (18.83)	14 (5.86)	1 (0.42)	4 (1.67)	-	102 (41.95)	150 (62.77)	24 (10.05)	2 (0.84)

(Figures in parenthesis indicate percentages of the unbracketed figures in columns 4 to 13 to the total of families given in column 3).

families having this equipment increased from 0.42 per cent to 16.74 per cent. Now the percentages of the families having this equipment from the first to fourth categories are 5.44 per cent, 13.33 per cent, 24.31 per cent and 36.00 per cent respectively.

(2) Chairs: Previously, only 3.35 per cent of the families were having chairs. Now this proportion has increased to 18.83 per cent. The percentage of families having this equipment are quite high in the case of the medium and big farmers i.e. 27.63 per cent and 38.00 per cent respectively.

(3) Fans: Prior to the establishment of the sugar factory, there was no family using fans, but now, out of the total 5.86 per cent of the families own fans. After the establishment of the sugar factory the percentages of the families having fans are 1.08, 1.67, 10.81 and 16.00 in the case of the marginal, small, medium and big farmers respectively.

(4) Electric heater: No family from the surveyed cultivators was using electric heater for cooking purpose. Now only one family from the fourth category is using heater. The percentage is insignificantly low.

(5) Fuel Gas: No family of a farmer was having fuel gas prior to the establishment of the sugar factory. But after the establishment of the sugar factory, 1.67 per cent of the families are having fuel gas. The families

using fuel gas are from the categories of medium and big farmers.

(6) Refrigerator: None of the surveyed families possessed it. None could purchase it even after the establishment of the sugar factory.

(7) Radio: Prior to the sugar factory, 2.09 per cent of the families were having radio sets. Now the percentage has increased to 41.95 per cent. Formerly there was not a single family having radio from the categories of marginal and small farmers. But now the proportions of the radio owners from the categories of marginal and small farmers are 31.52 per cent and 33.33 per cent. In the case of the medium and big farmers the proportions have increased from 5.41 per cent to 48.84 per cent and from 6.00 per cent to 70.00 per cent respectively.

(8) Bicycle: In the rural area, motor transport is under-developed. So bicycle is the most handy means of transport. Previously, 10.88 per cent of the families were having bicycles. Now the percentage has increased to 62.77 per cent. The proportion of bicycle holders is higher in the case of the medium and big farmers i.e. 67.57 per cent and 80.00 per cent respectively.

(9) Motor Cycle: Previously there was only one family possessing a motor cycle. Now 10.05 per cent of the families possess them. The families having motor cycles are comparatively more in the case of medium and

big farmers, as is to be expected.

(10) Car: Before the establishment of the sugar factory not a single family was having car. After the establishment of the factory only 2 families own cars. The families are from the category of big farmers.

From Table 4.8 it is clear that the proportion of families having these various household equipments is significantly higher among the medium and big farmers than the marginal and small farmers. Thus, we can say that after the establishment of the sugar factory, standard of living of larger landholders has improved perceptibly whereas that of smaller landholders has slightly improved.

#### 4.29 Advantages of the Sugar Factory

We know that with the establishment of a factory or a firm in a particular region, that region gets some advantages directly or indirectly. After the establishment of the sugar factory, the farmers in the region are also benefitted. The data collected regarding the advantages of the sugar factory to the region are presented in Table 4.9. The table shows the number of cultivating families who have thus benefitted.

The advantages of the sugar factory received by the farmers are as follows:

##### (1) Improvement in Transport and Communications:

The sugar factory has constructed new roads for the transportation to sugarcane thereby connecting villages with

Table 4.9. Advantages of sugar factory received by farmers in the region

Reporting number out of total (239)

Number of cultivating families reporting the particular advantage										
Improve- ment in trans- port and commu- nication	Availa- bility of loan for agricul- ture in time	Inspira- tion for high agri- cultural yield	Availa- bility of agricultu- ral imple- ments in time	Changes of sub-	Increase in trade and com- merce	Availa- bility of service	Availa- bility of edu- cational facili- ties	Medical aid	Provision of agri- cultural imple- ments by sugar factory	Benefits of some new schemes
1	2	3	4	5	6	7	8	9	10	11
227 (94.98)	178 (74.48)	201 (84.10)	190 (79.50)	33 (13.81)	131 (54.81)	76 (31.80)	172 (71.97)	24 (10.04)	55 23.01)	102 (42.68)

(Figures in parenthesis indicate percentage of the unbracketed figures in columns 1 to 11, to the total number of families i.e. 239)

the cities. The bus service and transport by other vehicles like motor cycles, scooters, trucks, tractors, etc., have much increased. New post offices and telephone offices are opened in this region. 94.98 per cent of the farmers have reported the advantage of better transport and communications.

(2) Timely loan for agriculture: Before the establishment of the sugar factory, the farmers had to depend mainly on the cooperative credit societies. Now some branches of other banks like the Central Bank of India, Bank of Baroda, Ahmednagar District Central Cooperative Bank have started their branches in the region. Apart from this the factory has been advancing loans and advances to the sugarcane cultivators. The agriculturists in the region get loans from these banks. 74.48 per cent of the farmers have reported getting this advantage.

(3) Inspiration for the High Agricultural Yield: The irrigated agriculture and modern methods of farming have been introduced to the region to a great extent after the establishment of the sugar factory. The factory arranges demonstration of fertilizers, irrigation and organises competitions for the high agricultural yield. In this way it is found that the factory has been inspiring the farmers towards high agricultural yields. 84.10 per cent of the farmers have been inspired by the sugar factory to attain higher yields as reported.



(4) Timely availability of agricultural inputs:

Some private and cooperative supply agencies of agricultural inputs have come into existence after the establishment of the sugar factory. As a result, the farmers can get agricultural inputs in time. 79.50 per cent of the farmers have reported this advantage.

(5) Change in the subsidiary occupations: Due to the establishment of the sugar factory, the immigration of labour has increased in this region. The increased income of agriculturists and non-agriculturists has increased the demand for necessities of life and of agricultural inputs. This has provided new opportunities to the farmers for the new subsidiary occupations. About 13.81 per cent of the farmers have started subsidiary occupations.

(6) Increase in the Trade and Commerce: The increase in income of the people in the region, immigration of labour into this region, establishment of new institutions like banks, co-operative credit societies, dairies, alcohol factory, construction of new roads, and the increase in the transport agencies have all helped in promoting trade and commerce in the region. 54.81 per cent of the farmers received advantage of the increased trade and commerce.

(7) Availability of services: Due to the sugar factory, some private and public institutions have come up. Some persons from the cultivators' families could get jobs in these institutions. Similarly, many of them have

been absorbed in the services of the sugar factory.

31.80 per cent of the families have been thus benefitted.

(8) Availability of Education Facility: The factory has been providing financial assistance to educational institutions, for instance, S.S.G.M. College, Kopergaon, Kanya Vidya Mandir, Kopergaon; the secondary schools in Louki, Godhegaon and Yesgaon villages have received financial assistance from the factory. The factory has also started one more primary school on the factory site. Thus, due to the financial assistance from the factory these educational institutions are running satisfactorily. The children of the farmers in the region can take education upto graduation with much smaller expenditure on education compared to education in cities. This advantage is reported by 71.97 per cent of the cultivators.

(9) Medical Aid: The sugar factory has started a dispensary for medical services on the factory site. The farmers from the surrounding villages can get cheap and timely medical help. Prior to the factory there was not a single dispensary in any village of the region. As a result all the people in the region had to run to the taluka place or to any other city to get medical aid. Now from the survey it is revealed that at least 10.04 per cent of the families are making use of the medical facilities provided by the factory in addition to their usual practice of going to other places, taluka or the cities.

(10) Provision of Agricultural Implements by the Sugar Factory: It has already been mentioned that the factory provides tractors and bulldozers for cultivation of land and for its development. 23.01 per cent of the farmers have benefitted from this.

(11) Benefits of New Schemes launched by the factory: The factory has been initiating and conducting many schemes for the benefit of farmers like soil testing, lift irrigation, provision of tractors and trucks through banks, supply of improved seeds and fertilizers, etc. 42.68 per cent of the families have reported this advantage. Thus with the change in cropping pattern, income of farmers from land has increased. Their total income has also increased due to the increase in the sources of additional income, such as the subsidiary occupations, agricultural equipments and services. Not only money income but also the real income of the farmers has increased after the establishment of the sugar factory. The money income and the real income of the farmers in the third and fourth categories has increased more than the money income and real income of the farmers from the first and second categories. Hence the inequality of income has increased.

Due to the increase in the income of the farmers, their housing conditions have also improved and their ability to purchase the household equipments has increased. Therefore, the standard of living of farmers also has been raised.

Apart from this, the expenditure pattern of the farmers has also changed. Now the farmers can afford expenditure on the development of land, for the purchase of the shares of co-operative credit societies, banks, and of the sugar factory. Now the farmers can also spend on the construction of houses, furniture, etc., and yet can save a part of their income.

#### FOOTNOTES

1. The Maharashtra State Cooperative Land Development Bank, Ltd., Bombay, Manual of Loaning, 1955, p. 21.
2. Cooperative Housing, RBI, Bombay, 1951, pp. 3, 7.

## CHAPTER V

### IMPACT ON THE LIVES OF AGRICULTURAL LABOURERS

5.1 In the preceding two chapters it has been observed that the establishment of the sugar factory had favourable effects on the agriculture and the standard of living of the agriculturists in the region. It has also been pointed out that the factory has been helping the agriculturists in the adoption of modern technology of farming. Consequently the income of agriculturists and their standard of living have improved.

Agricultural labour is an essential requirement of the agriculturists. It is of great significance to know whether the standard of living of the agricultural labour along with the agriculturists has improved or not, whether their wages have increased or not, and the extent of labour immigration to the factory area, after the establishment of the sugar factory.

This chapter purports to study some of these problems throwing light on the impact of the factory on the life of the agricultural labourers. An attempt has been made to answer above mentioned questions in the light of the relevant data collected.

5.2 The agricultural labour consists of only unskilled labourers working on the fields of farmers in the region. These labourers are quite different from the harvesting labourers who are of a migratory character. The harvesting

labourers come only at the beginning of the crushing season and return at the end of the season to their residential places. These labourers harvest sugarcane and transport it to the site of the sugar factories. They stay in groups on the site of sugarcane farms. Every cartman is accompanied by nearly three to four family members, who perform the role of cutters, loaders, cart drivers, etc. It is very important to note that the family of every harvesting labourer must possess a bullock cart for the transport of the sugarcane, otherwise the family cannot work as harvesting labourers.

5.3 In the case of agricultural labourers, the majority of them are local and work on the farms of local farmers. They are of a non-migratory character. Almost invariably these labourers do not possess bullock carts; so they cannot work as harvesting labourers. Therefore, the agricultural labourers are solely dependent on the field work. Among the harvesting labourers, the majority are farmers. Due to the lack of irrigation facilities in their places income from land of these farmers is too inadequate to maintain their families. So, in order to support their families they work as harvesting labourers in the season period of the sugar factories. On the contrary, the agricultural labourers generally consist of smaller farmers, non-agriculturists and landless labourers working in agriculture. The tenants and the cultivators engaged for

larger part of the year on the lands of others and who get more than 50 per cent of the total income by way of wages for manual labour on land are also considered as agricultural labourers. A study of harvesting labourers would not reveal the impact of the factory on the local economic conditions because of their migratory character. Hence, only local agricultural labourers are selected for the purpose of the survey.

5.4 The number of agricultural labourers in the surveyed villages is given in Table 5.1.

The data given in this table shows that the percentage of men among agricultural labourers is 52.65. The percentages of women and working children are 40.87 and 6.48 respectively. Thus the proportion of male labour is more than female labour while the proportion of child labour is very low among the agricultural labourers.

The survey sample consists of 10 per cent of the population of agricultural labourers. Each of the labourers surveyed belong to different families of agricultural labourers. The individual labourers are presumed to represent the family they belong to.

5.5 It is observed that some male labourers can get work on a yearly or monthly basis, but many of them work as casual manual labourers on the basis of daily wages. Income of male labourers is the main support of these families. But as the income earned by the male labourers

**Table 5.1.** Classification of agricultural labourers in the surveyed villages.

Name of the village	Men	Women	Child- ren	Total
1. Anchalgaon	33	16	2	51
2. Apegaon	57	35	5	97
3. Godhegaon	79	70	15	164
4. Kasali	27	23	2	52
5. Khopadi	30	16	4	50
6. Lauki	38	32	9	79
7. Nategaon	33	29	2	64
8. Ogadi	31	15	3	49
9. Shinganapur	206	222	24	452
10. Shirasgaon	45	18	6	69
11. Sawalgaon	21	10	3	34
12. Takali	401	287	46	734
13. Talegaon-Male	33	26	5	64
14. Tilawani	16	12	2	30
15. Ukkadgaon	23	22	4	64
<b>Total</b>	<b>1073</b> (52.65)	<b>833</b> (40.87)	<b>132</b> (6.48)	<b>2038</b> (100.00)

(Figures in the parenthesis indicate percentages to the total in the last column)



is not adequate for the maintenance of their families, their wives also have to work as manual labourers in agriculture. Apart from this, the children above 12 years have to work as manual labourers to support their families. The factors like illiteracy of parents, low family income and lack of educational facilities make the children work as manual labourers. It is also observed that the supply of agricultural labourers being quite large, farmers in the region use child labour on their farms only to a small extent.

5.6 Table 5.2 gives classification of the surveyed agricultural labourers according to age groups.

From this table we can observe that the percentage of the labourers in the first age group (10 to 20 years) is only 1.47 per cent while that of the age group between 31 and 40 years, is 35.29, the highest.

A majority of the total agricultural labourers is covered by the second and the third age groups i.e. 21 to 40 years. These two age groups cover 65.69 per cent of the labourers. The percentage of the labourers in the range between 51 and 60 years and above is 16.17.

#### 5.7 Educational Qualifications of the Labourers

The information collected regarding the educational qualifications of the agricultural labourers is presented in Table 5.3. The table shows the percentage of literate and illiterate labourers.

**Table 5.2. Classification of the agricultural labourers according to age-groups**

Particulars	Age groups							Total No. of labourers
	10 to 20 years	21 to 30 years	31 to 40 years	41 to 50 years	51 to 55 years	56 to 60 years	61 years and above	
No. of agricultural labourers	3	62	72	34	16	13	4	204
Percentage	1.47	30.40	35.29	16.67	7.84	6.37	1.96	100.00

**Table 5.3. Classification of the agricultural labourers according to their educational qualifications**

Particulars	Educational Qualifications					
	Illite- rate	Upto 4th Standard	Upto 7th standard	High school education	Upto SSC	Total
No. of agricultural labourers	152	31	15	4	2	204
Percentage	74.51	15.20	7.35	1.96	0.98	100.00

It is observed that the percentage of illiterate labourers is very high, i.e. 74.51. The percentage of the labourers educated upto 4th standard is 15.20 per cent and of those educated upto secondary school certificate is only 0.98. There is not a single graduate or diploma holder among the labourers as could be expected. Therefore, it is evident that illiteracy is the main reason which compels these labourers to accept the traditional occupation of agricultural labourers.

#### 5.8 Reasons for the occupational change and geographical migration of the families of agricultural labourers

The reasons for the occupational change and geographical migration of the families of agricultural labourers are mentioned in Table 5.4.

The table points out that the majority of the agricultural labourers are from the landless class. Some are working as agricultural labourers because of the unirrigated land, small holding, loss of their traditional occupations etc. These reasons are explained below:

(1) Landlessness and inadequacy of traditional occupation: Most of these workers have been working as agricultural labourers because they do not own land. The lack of owned land holding makes them work on the lands of other agriculturists. Some of them have their traditional occupations of rope-making, tailoring, smithy, masonry, etc. However, they do not get sufficient income from these

**Table 5.4.** Classification of reasons of the occupational change and geographical migration of the families of agricultural labourers

Reasons for the occupational change and geographical migration	No. of reporting families	Percentage to the total
1. Landlessness and inadequacy of traditional occupations	139	68.14
2. Small holding and unirrigated land	57	27.95
3. Land leased out	1	0.49
4. Loss of traditional occupation	2	0.98
5. Search of job	5	2.44
Total	204	100.00

traditional occupations, so they have to work as agricultural labourers. The proportion of such labour to the total is 68.14 per cent.

(2) Small holdings and unirrigated land: The farmers from dry areas do not have any irrigation facilities for their land. Some of them are small holders and some of them are large holders. They have to depend only up on the mercy of the monsoon. These farmers cannot get adequate income from dry land. Sometimes they do not even get enough income to cover the cost of production which they incur on the cultivation of land. Hence they have to work as agricultural labourers on the land of other farmers.

The percentage of such labourers is 27.95.

(3) Land leased out: 0.49 per cent of the agricultural labourers have leased out their lands to cover marriage expenses and for the refund of bank loans. Due to lack of any other source of income after such leasing out of land they have been working as agricultural labourers.

(4) Loss of traditional occupation: After the establishment of the sugar factory, income of the families of the masons and the carpenters has decreased due to loss of traditional occupations. According to the carpenter interviewed, the farmers have been making use of modern implements of agriculture because of the incentives from the factory and it has caused the loss of traditional occupations on which they depended. With the increase in income of the farmers, they have been using modern agricultural implements such as tractors, oil engines, electric motors, etc. Thus the traditional craftsmen do not get adequate work. For this reason, the families in the aforesaid occupations have started working as agricultural labourers. Thus the loss of traditional occupation is a cause of the change in occupation. 0.98 per cent cases are of this type.

(5) Search of job: 2.44 per cent of the families have migrated into this region in search of job. After the establishment of the sugar factory the agricultural labourers from other region might have thought that they would get jobs in this region. The percentage of such migrated labourers

is very low.

Thus, from the table we can conclude that a majority of the agricultural labourers are landless. The farmers from the dry area and the small land holders have also become agricultural labourers.

5.9 The proportion of the immigrant agricultural labourers to the total agricultural labourers is shown in Table 5.5.

(a) Local workers: Local workers are the workers from the villages which are in the area of operation of the factory. The majority of the workers are local, i.e. 90.20 per cent of the total. It includes the labourers from the surveyed villages.

(b) Labourers from Kopergaon taluka: Only 2.45 per cent of the workers are from Kopergaon taluka. We can call them as quasi-local. The labourers from the other adjoining villages except the villages under the area of operation of the factory are included in it.

(c) From Ahmednagar District: 0.49 per cent of the labourers are migrated from the Sangamner Taluka of Ahmednagar District. The name of the village from which the agricultural workers are migrated is Chinchiola Gurav.

(d) From the other districts of Maharashtra State: 6.86 per cent of the agricultural labourers have migrated from other districts of Maharashtra viz. Nasik and Aurangabad. Both these districts are neighbouring districts, adjoining the area of operation of the Sanjivani Co-operative Sugar

Factory. According to the sugar-cane control order of the Maharashtra Government, some villages from both the districts are included in the area of operation of the sugar factory.

From this table it is clear that 90.20 per cent of the labourers are local and very few have immigrated from other places. This can also be an indication of the fact that opportunities for employment to the agricultural labourers on a large-scale have not been created in this region to cause a significant immigration.

#### 5.10 Land-holding of the families of Agricultural Labourers

We have seen that, out of the total agricultural labourers nearly one fourth are from the cultivator families. The information regarding the land holdings of the families of the agricultural labourers is classified according to size holdings in Table 5.6.

The table shows that some families having considerably large holdings also are working as agricultural labourers. Out of the total families 27.95 per cent are holding land. Of this 20.88 per cent are holding land upto 5.00 acres. 6.87 per cent of the families own land in the range between 5.1 acres and 15.00 acres. The large land-holders work as agricultural labourers because of their dry land. Thus the percentage of small land holders is greater among these land holding families and this point has already been discussed in Chapter IV.

Table 5.5. Distribution of agricultural labourers according to the location from which they are migrated after the establishment of the factory

Particulars	Local	From Kopar-gaon Taluka	From other talukas of Ahmednagar district	From other districts of Maha-rashtra	Total agri-cultural labourers surveyed
No. of agricul-tural labourers	184	5	1	14	204
Percentages	90.20	2.45	0.49	6.86	100.00

Table 5.6. Classification of the families of agricultural labourers according to their holdings

Particulars	Landless families	Upto 1 acre	1.1 to 2 acres	2.1 to 3 acres	3.1 to 4 acres	4.1 to 5 acres	5.1 to 10 acres	10.1 to 15 acres	Total No. of agricul-tural labour-ers sur-veyed
Number of families	147	1	15	13	6	8	12	2	204
Percentages	72.05	0.49	7.35	6.38	2.94	3.92	5.89	0.98	100.00



### 5.11 Sources of additional income of the families of Agricultural labourers

Most of the families of agricultural labourers get additional income from various subsidiary occupations. The information regarding the sources of income is presented in Table 5.7.

The table shows that 24.51 per cent of the families of agricultural labourers get additional income from their own land. 2.95 per cent of the families have been getting additional income from services, while 1.96 per cent of the families get additional income from rope-making and 0.98 per cent from tailoring. In brief, the number of families entirely depending upon manual labour on the farms of other agriculturists is quite high i.e. nearly by 64 per cent.

### 5.12 Change in the money income of Agricultural Labourers

It was expected that after the establishment of the sugar factory, income of the agricultural labourers would increase in this region. The information regarding wages and working days is presented in Table 5.8. In this table average working days of the workers and prevailing wage rates for men, women and children are taken for the year 1961-62 and 1975-76. The average working days are calculated by multiplying the number of working days in a year to the number of workers in each village. The working days of all the villages are summed up and divided by the total number of labourers separately for both the periods. It is obvious from the table that

Table 5.7. Sources of additional income of the families of agricultural labourers

Name of the source of additional income	No. of families getting income from the source	Percentage to the total No. of families
A. The families who do not have any subsidiary occupations	130	63.72
B. Families getting income from subsidiary occupations		
1. Rope-making	4	1.96
2. Agriculture	50	24.51
3. Sale of milk (Dairy)	1	0.49
4. Service	6	2.95
5. Masonary	1	0.49
6. Cattle-broking	1	0.49
7. Carpentry	1	0.49
8. Barber	1	0.49
9. Grocery	1	0.49
10. Tea stall	1	0.49
11. Smithy	1	0.49
12. Kotwal	1	0.49
13. Agriculture and Rope-making	1	0.49
14. Tailoring	2	0.98
15. Dairy and Carpentry	1	0.49
16. Tailoring and Agriculture	1	0.49
Total No. of families who get income from subsidiary occupations	74	36.28
Total (A + B)	204	100.00

**Table 5.8.** Wage rates and average working days of the agricultural labourers before (1961-62) and after (1975-76) the establishment of the sugar factory

Name of the village	Before the establishment of sugar factory in the year 1961-62			
	Working days	Men	Women	Children
1. Anchalgaon	200	2.50	1.50	0.75
2. Apegaon	180	2.25	1.25	0.62
3. Godhegaon	200	2.50	1.50	0.75
4. Kasali	180	2.25	1.25	0.62
5. Khopadi	180	2.25	1.25	0.62
6. Lauki	230	2.50	1.50	0.75
7. Nategaon	200	2.50	1.50	0.75
8. Ogadi	200	2.50	1.50	0.75
9. Savalgaon	190	2.50	1.50	0.75
10. Shinganapur	225	2.50	1.50	0.75
11. Shirasgaon	190	2.25	1.25	0.62
12. Talegaon-male	200	2.25	1.25	0.62
13. Takali	230	2.50	1.50	0.75
14. Tilawani	180	2.25	1.25	0.62
15. Ukkadgaon	190	2.25	1.25	0.62
Average	215.91	2.36	1.38	0.67

Table 5.8: contd.

Name of the village	After the establishment of sugar factory in the year 1975-76			
	Working days	Wages for		
		Men	Women	Children
1. Anchalgaon	260	3.50	1.75	1.00
2. Apegaon	240	3.50	1.75	1.00
3. Godhegaon	280	4.00	2.00	1.25
4. Kasali	240	3.50	2.00	1.00
5. Khopadi	240	3.50	1.75	1.00
6. Lauki	280	4.00	2.00	1.25
7. Nategaon	250	4.00	2.00	1.25
8. Ogadi	250	3.50	1.75	1.00
9. Savalgaon	250	3.50	2.00	1.00
10. Shinganapur	290	4.00	2.00	1.25
11. Shirasgaon	250	3.50	2.00	1.00
12. Talegaon-male	280	4.00	2.00	1.25
13. Takali	290	4.00	2.00	1.25
14. Tilawani	230	3.50	2.00	1.00
15. Ukkadgaon	230	3.50	1.75	1.00
Average	263.28	3.87	2.01	1.20

the average working days of men, women and children have increased after the establishment of the sugar factory. In order to know the exact increase in the money income of the labourers, the weighted average income of both the periods i.e. 1961-62 and 1975-76 is estimated. The method of estimation is given below:

$$W = \frac{W_1L_1 + W_2L_2 + W_3L_3}{L_1 + L_2 + L_3^*}$$

where: W = weighted average wage rate

$W_1$  = Average wage rate of men

$W_2$  = Average wage rate of women

$W_3$  = Average wage rate of children

$L_1$  = Number of male workers

$L_2$  = Number of female workers

$L_3$  = Number of child workers

(\* = As given in Table 5.1)

$W_1$ ,  $W_2$  and  $W_3$  have been computed by taking into consideration wage rates in each category of workers of the individual villages totalling them up and by dividing the total by the number of villages both for the former and the latter periods. Further the average annual income is estimated by multiplying the number of average working days in a year in each of these periods:

$$I_b = W_b D_b$$

$$I_a = W_a D_a$$

where,

$I_b$  = Average annual income in the periods before the establishment of the sugar factory

$I_a$  = Average annual income during the period after the establishment of the sugar factory

$W_b$  = Weighted average wage before the establishment of sugar factory

$W_a$  = Weighted average wage after the sugar factory

$D_b$  = Average working days in a year before the sugar factory



$D_a$  = Average working days in a year after the sugar factory

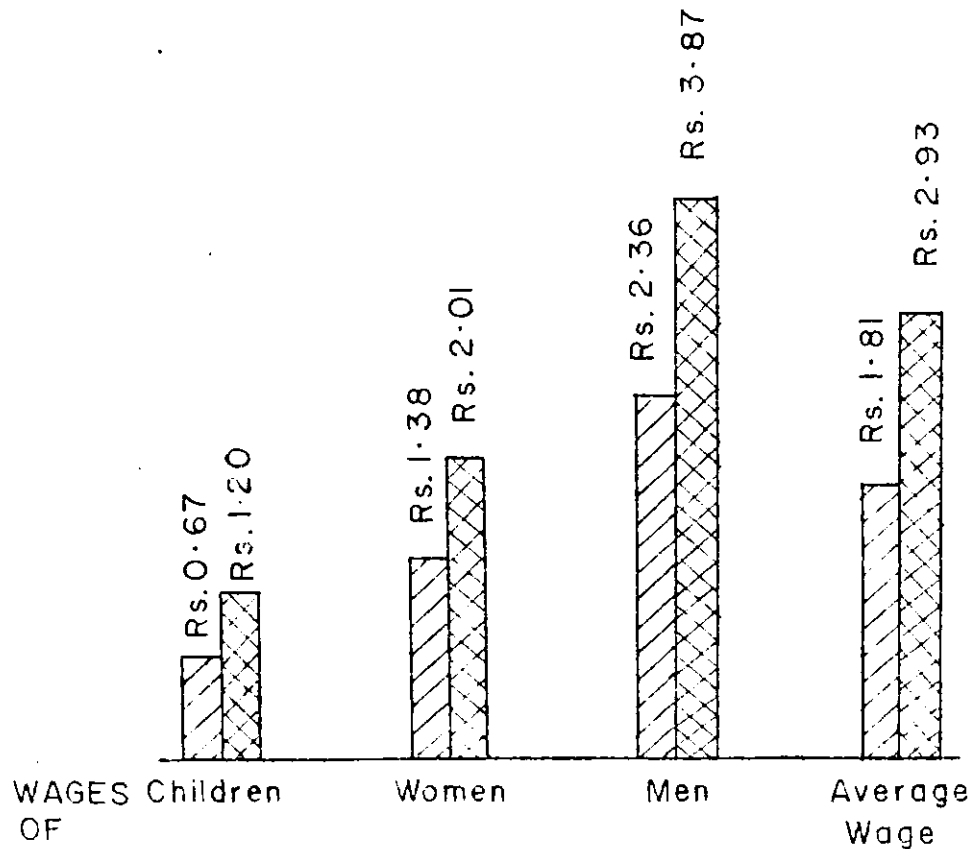
Having computed the average annual income of both the periods, the increase in income over the period is obtained by deducting the average income of the former period from that of the latter.

The average income of the agricultural labourer per annum in 1961-62 works out to Rs. 389.86 which increased to Rs. 772.66 in 1975-76. The increase in income over the period is to the extent of 98.19 per cent. The average wage rate has increased from Rs. 1.81 to Rs. 2.93 i.e. by 61.63 per cent during the same period. The average number of working days increased by 21.93 per cent. Formerly the labourers were employed for 216 average days, now they are employed for 263 average days in a year. During the survey it is observed that the number of average working days has

# CHANGE IN THE WAGES (PER DAY) AND WORKING DAYS (IN A YEAR) OF THE AGRICULTURAL LABOURERS

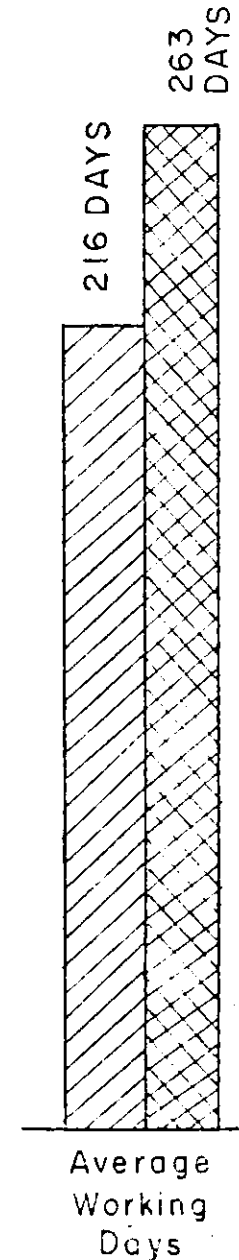
SCALE : Rs.1 = 2 Cm.

-  BEFORE SUGAR FACTORY (1961-62)
-  AFTER SUGAR FACTORY (1975-76)



BAR DIAGRAM-II

SCALE : 20 DAYS = 1 Cm.



increased due to the increased cultivation of cash crops like sugarcane. Secondly, the increased area under irrigation has enabled the farmers to cultivate more than one crop on the same plot in a year. It has also provided work for more days in a year to the agricultural labourers. Thus we can conclude that money income of the agricultural labourers has increased due to the increased number of working days and increase in the wage rate after the establishment of the sugar factory.

The change in the wage rates and the average working days are shown in the bar diagram No. II.

### 5.13 Change in the real income

On the face of it, one might consider that the income of the agricultural labourers has increased over the period, but this increase is really only in terms of money. If one wants to assess the increase in income in real terms, one has to consider the price factor in both the years. It is clear that the prices have increased over the years. The family budget expenditure of agricultural labourer is estimated for the years 1961-62 and 1975-76 with a view to finding out change in the real income. In computing the family budget expenditure the average retail prices of the items in the consumption pattern of the respective years have been taken from the District Statistical Abstract of Ahmednagar district for the years 1962-63 and 1974-75 (see Appendix III). Over this period the price



level has increased by 236.62 per cent. Thus we can conclude that though the money income of agricultural labourers has increased still their real income has declined due to sharp rise in price level.

#### 5.14 Monthly family income of agricultural labourers

Generally, in rural area, the agricultural labourers live in huts on the farm sites. The small farmers who work as agricultural labourers can have small huts on their own farms or they can have houses in the villages. So these agricultural labourers need not spend on accommodation. Secondly, they have to spend on fuel. But it is observed that they can manage together some fuel by collecting dung, thorny bushes, wastage of cattle fodder, the roots of harvested sugarcane, etc. They spend most of their income on foodgrains, grocery and to some extent on vegetables, clothes and for such other purposes. Thus, for these purposes a family having nearly five members has to spend minimum Rs. 150 per month according to the retail prices of commodities in the year 1975-76. The families earning income around Rs. 150 or a little bit more can at least purchase adequate foodgrains and other necessities for their maintenance. So one can say that families in this group are on the level of subsistence. Those who get more income than Rs. 201 per month can purchase more nutritious food and better quality of cloth. The families belonging to higher income group i.e. above Rs. 351/- can satisfy their daily necessities

and live a comparatively good life. The classification of these families according to income range is approximate and can be altered both ways to a certain extent without affecting the analysis materially.

5.15 In order to understand the level of living of the families of agricultural labourers, the families are classified in the various different income groups in Table 5.9.

Table 5.9. Monthly family income of the agricultural labourers after the establishment of sugar factory (1975-76)

Income groups in Rs.	No. of families in the group	Percentage	Remarks
1. Upto 50	28	13.73	78.92% below the subsistence level
2. 51-100	83	40.68	"
3. 101-150	50	24.51	at the subsistence level
4. 151-200	21	10.30	"
5. 201-250	8	3.92	11.18% above the subsistence level
6. 251-350	12	5.88	"
7. Above 351	2	0.98	"
Total	204	100.00	

(a) Income below subsistence level: As mentioned above, the families having monthly income below Rs. 150/- are included in this group. The percentage of such families is 78.92. Even after the establishment of the sugar factory

the proportion of such families is very high. The families being entirely dependent on the income from manual labour come under this category.

(b) Families at the subsistence level: The families having monthly income in the range between Rs. 151 and Rs. 200 are included in this category. 10.30 per cent of the families come under this category. Under this category, both the husband and wife work as manual labourers in agriculture from every family. So they can get income upto subsistence level and some of them have an additional source of income.

(c) Families above subsistence level: The families whose monthly income is above Rs. 201 are included in this category. The percentage of such families is 11.18.

From the Table 5.9, one can conclude that after the establishment of the sugar factory the agricultural labourers have benefitted only to a small extent. The percentage of the families below the subsistence level is quite high. Thus we can say that the majority of the agricultural labourers are almost in the starvation range.

#### 5.14 Change in the standard of living of the agricultural labourers

It can definitely be said that after the establishment of the sugar factory though the money income of the agricultural labourers has increased, their real income has not increased owing to the steep rise in prices of commodities.

Hence, their standard of living appears to have remained the same as before the establishment of the sugar factory. In order to know the change in the standard of living, it is necessary to observe the consumption basket, clothing, housing condition and the household equipments of the agricultural labourers.

#### 5.15 Change in the consumption pattern of the labourers

The data presented in Tables 5.10 and 5.11 has its own limitations in showing the change in the consumption pattern of agricultural labourers. The data explains only the qualities or types of the particular commodities and not the quantity of the commodities which are being consumed. Still, the data can show us the qualitative change in consumption basket of the agricultural labourers. In Kopargaon taluka jowar, bajra and wheat are being cultivated. So people in the area generally consume these foodgrains. Out of these foodgrains agricultural labourers consume jowar and bajra as the main items of their consumption pattern. These items are cheap as compared to wheat and rice. These agricultural labourers can consume wheat and rice only at the time of festivals. Sometimes they cannot even afford to pay for jowar and bajra. At such time, they have to consume moong, math, kulith and maize, etc.

The consumption basket of the agricultural labourers before and after the establishment of sugar factory is presented in Table 5.10. From the table it is clear that

Table 5.10. The consumption-pattern of agricultural labourers before (1961-62) and after (1975-76) the establishment of sugar factory

Consumption pattern before the sugar factory	Consumption pattern after the sugar factory	No. of families	Percentage	Remarks	
1. Jowar	Jowar	121	58.32	(unaffected group) The 89.71% of agricultural labourers have not experienced any change in their consumption pattern	
2. Jowar, Bajra	Jowar, Bajra	48	23.53		
3. Jowar, Bajra, Kulith	Jowar, Bajra, Kulith	6	2.94		
4. Jowar, Bajra, Wheat	Jowar, Bajra, Wheat	3	1.47		
5. Wheat, Jowar	Wheat, Jowar	3	1.47		
6. Jowar, Bajra, Math, Moong, Kulith, Maize	Jowar, Bajra, Math, Moong, Kulith, Maize	2	0.98		
7. Jowar, Wheat	Jowar, Wheat, Rice	1	0.49		(affected group) The 10.29% labourers have experienced change in their consumption pattern
8. Jowar	Jowar and wheat	15	7.35		
9. Jowar, Bajra	Jowar, Bajra, Wheat	2	0.98		
10. Jowar	Jowar, Bajra	1	0.49		
11. Jowar, Bajra, Kulith	Jowar, Bajra, Kulith, Maize, Math	2	0.98		
	Total	204	100.00		

out of the total labourers, there is no significant change in the consumption pattern of 89.71 per cent of the agricultural labourers. In the case of 10.29 per cent of the agricultural labourers the consumption pattern has slightly changed. In the case of the unaffected group, 58.32 per cent of the labourers have been consuming only jowar. The consumption of these labourers has remained unchanged. In the case of affected group (of changed consumption pattern) very few agricultural labourers have started consuming wheat in combination with jowar. Nearly 7.35 per cent of the families have started consuming this combination after the establishment of the sugar factory. But the consumption pattern of 0.98 per cent of the labourers from the affected group has actually deteriorated after the establishment of the sugar factory. Previously these families were consuming jawar, bajara and kulith. Now they can not purchase sufficient quantity of the foodgrains with their low income. So, they have to purchase foodgrain of low quality, like maize, math and kulith instead of jawar and bajara.

From the table we can conclude that there is no change in the consumption pattern of majority of the agricultural labourers. A very limited change is observed in the case of some labourers. The change is also of two types. In the case of 9.31 per cent of the families (No. 7 to 10), the consumption pattern has improved, while in the case of 0.98 per cent of the families (No. 11) it has deteriorated in

terms of quality due to the low family income.

#### 5.16 Change in the consumption of cloth

Whatever the quality of cloth these agricultural labourers were consuming, the same quality of cloth is being consumed even after the establishment of the sugar factory. In Table 5.11 information regarding consumption of cloth before and after the establishment of the sugar factory is presented.

Table 5.11. Distribution of the families of agricultural labourers before (1961-62) & after (1975-76) the establishment of sugar factory according to their consumption of cloth

Type of cloth consumption before the sugar factory	Type of cloth consumption after the sugar factory	No. of families	Percentage
1. Coarse cloth	Coarse cloth	163	79.90
2. Medium quality of cloth	Medium quality of cloth	38	18.63
3. Medium and rough quality of cloth	Medium and rough quality of cloth	<u>3</u>	<u>1.47</u>
	Total	204	100.00

The table points out that there is no change in the consumption of cloth, even after the establishment of the sugar factory. Out of the total families of the agricultural labourers 79.90 per cent have been consuming coarse cloth, and 18.63 per cent have been consuming medium type of cloth,

while only 1.47 per cent of the families have been consuming medium and rough quality of cloth.

#### 5.17 Housing condition

It has been observed in Chapter IV that, the farmers who have been working as agricultural labourers live in medium type, and dilapidated houses in their villages. None of them is able to possess well-built houses owing to low income.

There are many farmers who provide small huts on their farms free of charge to the labourers, because these labourers perform the role of watchmen at night. But those who do not want to stay on the farm, generally build small huts in the villages. In every surveyed village it is observed that, some space is traditionally distributed among various communities. Those who have received such space can build huts and live in them. In brief, it can be said that, the housing conditions of agricultural labourers have not yet improved.

#### 5.18 Household equipment of the labourers

In order to find out the change in the household equipments of the labourers after the establishment of the sugar factory, the collected information of household equipments is presented in Table 5.12. Here, the utensils are not taken into consideration.

From the table it can be observed that before the establishment of the sugar factory only 3.43 per cent of the families had a bicycle. They did not have other household



**Table 5.12.** Distribution of the agricultural labourers according to the household equipments before (1961-62) and after (1975-76) the establishment of the sugar factory

Particulars	No. of families	No. of families owning the household equipment						
		Radio	Fan	Cot	Table	Chair	Bi-cycle	Sewing machine
Before the sugar factory	204	-	-	-	-	-	7 (3.43)	-
After the sugar factory	204 (100.00)	4 (1.96)	-	2 (0.98)	2 (0.98)	4 (1.96)	17 (8.33)	4 (1.96)

(Figures in parenthesis indicate percentages to the total No. of families in the first column)

equipments except utensils. After the establishment of the sugar factory a few families have been able to purchase other household equipments such as radio, cots, tables, sewing machines. The families with additional sources of income are the ones which have been able to purchase such household equipments.

It can be observed from Tables 5.10, 5.11 and 5.12 that a few changes in the consumption of foodgrains, cloth and household equipments have taken place. This change is only in the case of those labourers who have been doing manual labour in agriculture along with traditional occupations and

also in the case of those families of the labourers who live in the irrigated area where they get more and higher wages. Similar change is also observed in the case of those families who hold land.

### 5.19 Expenditure Pattern

With the change in the income of agricultural labourers their expenditure pattern has also undergone a change. It is presented in Table 5.13.

Table 5.13. Classification of the families of agricultural labourers according to their expenditure pattern at present (1975-76)

No. of families spending for the purpose					
House construction	Purchase of land	Share purchase of co-op. society	Deposited in bank	Purchase of furniture	For the education of children
13 (6.37)	5 (2.45)	2 (0.98)	2 (0.98)	2 (0.98)	1 (0.49)

(The figures in parenthesis indicate percentages to the total number of families, i.e. 204).

(1) House construction: Out of the total families of agricultural labourers 6.37 per cent have spent on the construction of houses in their villages. It is found that income of these families is higher as compared to other families of agricultural labourers. These families have been getting the additional income from other sources.

(2) Purchase of land: It is observed that there are some joint families of the labourers, who get surplus income and have purchased land. These families are also getting income from other sources. The proportion of land purchasers is 2.45 per cent.

(3) Share purchase of Co-operative Societies: Out of the total families, 0.98 per cent have become members of the Co-operative Credit Societies. These families own some acres of land. In order to obtain loan, they have become shareholders of Co-operative Societies. The percentage of such shareholders is almost negligible.

(4) Bank Deposits: 0.98 per cent of the families have been depositing a small part of their income in bank.

(5) Purchase of furniture: It is found that the families who have been doing the business of grocery and hotel (tea stall) along with manual labour have purchased furniture for their business purpose. The percentage of such families is 0.98 per cent only.

(6) Expenditure on Education: There are 0.49 per cent of the families who have been spending a small amount out of their income on the education of their children.

Thus as per the information given in Table 5.13, we can conclude that very few families can afford to spend for purposes other than essential household expenditure due to their low income. During the survey it is also observed that the families who can afford to spend for other purposes like

purchase of furniture, purchase of shares, purchase of land, construction of house, etc. have some sources of additional income.

5.20 Advantages of the sugar factory received by the agricultural labourers

The direct and indirect advantages of the sugar factory received by the agricultural labourers are presented in the Table 5.14.

Table 5.14. Classification of the families of agricultural labourers according to the advantages received by them after the establishment of the sugar factory (1975-76)

Total No. of families	Advantages reported by the families of agricultural labourers			
	Increase in transport	Availability of jobs	Educational facility	Medical aid
1	2	3	4	5
204 (100.00)	184 (90.20)	35 (17.16)	125 (61.27)	25 (12.26)

(Figures in parenthesis indicate percentages to the total number of families in the first column).

(1) Facility of Transport : After the establishment of the sugar factory, due to the increase in transport facilities, the villages in the area of operation of the factory are linked to the cities like Kopergaon, Yeola, Vaijapur. Many villages are also linked to each other. This advantage is reported by 90.20 per cent of the families of agricultural labourers

in this region.

(2) Availability of jobs: Out of the total families of the agricultural labourers, this advantage is received by 17.16 per cent of the families. Some members of the families could get job in the sugar factory and thereby helped to increase the income of the agricultural labourers.

(3) Educational facilities: It has been already explained that the sugar factory has been setting up and financing some educational institutions such as High Schools and Colleges. Primary schools are also established in the factory premises. Thus the children of the labourers can get education at nominal expenses upto matriculation in these villages or nearby villages. 61.27 per cent of the families have thus been benefitted.

(4) Medical aid: It has also been explained that due to the establishment of the sugar factory, some private dispensaries are opened in some villages of the region. Moreover the sugar factory has opened a hospital. 12.26 per cent of the agricultural labourers have reported this benefit.

#### 5.21 Absence of Trade Unionism

There is no union of agricultural labourers in this taluka or even in the Ahmednagar District, firstly because the agricultural labourers are large in number and secondly, because they are illiterate, ignorant and financially weak. Hence, the labourers have been facing a number of problems.

Some important problems which these labourers have faced, are presented in Table 5.15. The percentages given in the table, show the proportion of families facing the particular problem. The percentage indicates the intensity as well as the magnitude of the problem. If we arrange the problems in descending order of percentages, it will give us an idea, as to which are important problems which need immediate attention.

Table 5.15. Classification of the families of agricultural labourers according to their problems after the establishment of the sugar factory (1975-76)

Nature of the problems	No. of reporting families	Percentage
1. Lack of work for the whole year and lack of housing	147	72.05
2. Inability to maintain their families due to low wage rate and inadequate family income	73	35.80
3. No subsidiary occupation for additional income	70	34.33
4. Unfair condition of employment	11	5.39

(1) Lack of work for the whole year and lack of housing:

Nearly three-fourths of the labourers have faced this problem. From Table 5.8 it is quite clear that the labourers get work for 263 days in a year. Due to low income they cannot build

a house or hire it. They have to depend upon the farmers for temporary shelters.

(2) Inability to maintain their families due to low wage rate and inadequate family income: The wage rates which these families get are very low. So they cannot maintain their families. 35.80 per cent of the families have reported this problem.

(3) No subsidiary occupation: The very same families who have reported their inability of adequate maintenance means, due to low wage rates and income, have reported this problem. The percentage of such families is 34.33.

(4) Unfair condition of employment: The families who have been working on the farms of rich farmers and in the fruit growers' co-operative society, have reported this problem. 5.39 per cent of the families have been facing this problem. According to them, these farmers pay very low wage rate to female workers, and male workers are being compelled to employ their wives to work at the lower rate. If any one of them refused to employ his wife on the lower wage rate, the worker himself would not get work on the farm. So in order to get work on the farm the male workers are compelled to employ their wives at the lower wage rate.

Thus the problems of agricultural labourers are of a serious nature. As these labourers are not properly organized, they are not able to solve their problems. If they would work as harvesting labourers at the time of crushing season

of the factory, to some extent their problems of unemployment would have been solved. Besides, if some labourers get financial assistance for starting subsidiary occupation like poultry, dairy, etc., they would get some additional income.

In brief, the establishment of sugar factory has led to an increase in area under irrigation, which has helped in changing cropping pattern in the region. It has enabled the farmers to grow more than one crop in a year. All this has provided work for more number of days to the agricultural labourers. Hence the money income of all the labourers has increased, but their real income has not increased significantly. It was expected that after the establishment of the factory the labourers would get work for the whole year, and would be economically in a more sound position. But even after the establishment of the sugar factory the problem of the majority of the agricultural labourers have remained unsolved. This indicates the need for urgent and serious attention to the problems of agricultural labourers.



## CHAPTER VI

### ECONOMIC CONDITIONS OF THE SUGAR FACTORY WORKERS

6.1 We have seen that the sugar factories of Godavari Sugar Mills, viz., Kanhegaon and Laxmiwadi came into existence in the Kopergaon taluka during the Second World War period. In the subsequent period, the Changdeo Sugar Factory and other co-operative sugar factories were established in this taluka. Thus a new class of sugar factory workers came into existence nearly 30 to 35 years ago.

6.2 It has been observed that nearly 80.00 per cent of the workers of the Sanjivani Cooperative Sugar Factory belong to the local and nearby area. The agricultural labourers, small farmers and non-agriculturists of the region could get employment in the sugar factory. So far, we have analysed the economic conditions of agricultural labourers and of small and big farmers before and after the establishment of the sugar factory. Against this background we shall now study the present situation of the factory workers especially with regard to their income, standard of living, their organisation and other aspects.

One important point to be noted here is that the surveyed sugar factory workers also include some officers of the factory who are from the category of permanent workers. The proportion of such officers among the surveyed workers

is negligible i.e. 4.60 per cent only (Sr.Nos. 26 to 29 in Table 6.1). It would not be proper if we are to compare economic conditions of these "labourers" with those of agricultural labourers and small farmers. If we eliminate this section viz. officers from our list, we can get a group of factory workers whose conditions can be compared meaningfully with those of agricultural labourers and small farmers. Hence, we can say that the comparison as made here without leaving out officers from the list of factory workers, is somewhat crude in nature.

6.3 For this purpose 10 per cent of the factory workers of the Sanjivani Cooperative Sugar factory workers have been surveyed. Among the surveyed workers, 41.38 per cent are permanent, 51.72 per cent are seasonal and 6.90 per cent are temporary. The data regarding the number of workers, nature of employment and designations are presented in Table 6.1.

(1) Permanent Workers: The labourers who get full time work for the whole year and those who are put in the category of permanent workers as per the Industrial Labour Act are included in this category.

(2) Seasonal: The workers who get employment only during the crushing season are known as seasonal labourers. These workers get retention allowance from the sugar factory during the off season.

(3) Temporary: Those who get work on a temporary basis for a certain period are known as temporary workers. The

**Table 6.1.** Classification of the surveyed sugar factory workers according to their designation and category

(No. of workers=87)

Designation of workers	Categories of the workers			Total No. of workers
	Perma- nent workers	Seasonal workers	Tempo- rary workers	
1. Slip boy	-	2	-	2
2. Centry-Fugal	-	1	-	1
3. Watchman	2	3	-	5
4. Peon	-	1	-	1
5. Attendant	1	1	-	2
6. Helper	-	2	-	2
7. Motor-attendant	-	1	-	1
8. Carrier-attendant	-	2	-	2
9. Pump-man	1	3	-	4
10. Fitter and Turner	3	-	-	3
11. Welder and Moulder	2	-	-	2
12. Hammerman and fireman	2	-	-	2
13. Machine operator	-	3	-	3
14. Driver	3	1	-	4
15. Manufacturing assistant	1	-	-	1
16. Blacksmith	1	-	-	1
17. Carpenter and Mason	2	-	-	2
18. Khalasi	3	1	-	4
19. Majoor	3	21	3	27
20. Clerk	3	2	2	7
21. Tracer	1	-	-	1
22. Cashier	1	-	-	1
23. Typist	2	-	-	2
24. Fieldman	1	-	-	1
25. Farm labourer	-	1	1	2
26. Project Officer	1	-	-	1
27. Assistant Agricultural Officer	1	-	-	1
28. Assistant Engineer	1	-	-	1
29. Chemist	1	-	-	1
Total	36	45	6	87
Percentage	41.38	51.72	6.90	100.00

factory generally recruits this type of labour at the time of crushing season if needed. There is no provision of retention allowance for these workers.

#### 6.4 Age groups

The workers surveyed are classified according to their age groups in Table 6.2. The table indicates the number and proportion of workers in the different age groups.

From the table it is clear that 3.45 per cent of the workers are between the range of 51 and 60 and 13.80 per cent between 41 and 50 years. 51.72 per cent and 31.03 per cent of the workers are from the age groups between 31 and 40 years and 21 and 30 years respectively. The total percentage of the two groups is 82.75. Thus more than four-fifth of the workers are in the age group of 21 and 40 years.

#### 6.5 Educational Qualifications of the Sugar Factory Workers

As compared to the agricultural labourers, the sugar factory workers require some sort of skill and technical knowledge for the work. The educational qualifications of the factory workers are presented in Table 6.3.

From table 6.3 we can see that as compared to agricultural labourers, the proportion of illiterate workers among the sugar factory workers is very low.

Nearly 75 per cent of the agricultural labourers are illiterate while in the case of the sugar factory workers the proportion is only 8.04 per cent. Of the factory labourers, 40.23 per cent are educated upto IV Standard.

**Table 6.2. Distribution of the sugar factory workers according to age groups**

(Total No. of workers interviewed=87)

Category of labourers	Age in years					Total
	21-30	31-40	41-50	51-55	56-60	
Permanent	10 (11.49)	18 (20.69)	7 ( 8.05)	-	1 ( 1.15)	36 (41.38)
Seasonal	14 (16.09)	24 (27.38)	5 ( 5.75)	2 (2.30)	-	45 (51.72)
Temporary	3 ( 3.45)	3 ( 3.45)	-	-	-	6 ( 6.90)
<b>Total</b>	<b>27</b> <b>(31.03)</b>	<b>45</b> <b>(51.72)</b>	<b>12</b> <b>(13.80)</b>	<b>2</b> <b>(2.30)</b>	<b>1</b> <b>(1.15)</b>	<b>87</b> <b>(100.00)</b>

(Figures in parenthesis indicate percentages of workers to the total).

Table 6.3. Classification of the factory workers according to their educational qualifications

(No. of factory workers = 87)

Category of workers	Illiterate	Upto 4th Std.	Upto 7th Std.	High School education	Upto SSC	Diploma like ITI and equivalent	Graduate	Total
	1	2	3	4	5	6	7	8
Permanent	2 (2.30)	13 (14.95)	6 (6.90)	3 (3.45)	6 (6.90)	2 (2.30)	4 (4.69)	36 (41.38)
Seasonal	3 (3.45)	20 (22.98)	11 (12.63)	10 (11.50)	1 (1.15)	-	-	45 (51.72)
Temporary	1 (1.15)	2 (2.30)	1 (1.15)	1 (1.15)	-	-	1 (1.15)	6 (6.96)
Total	7 (8.04)	35 (40.23)	18 (20.68)	14 (16.10)	7 (8.04)	2 (2.30)	5 (5.75)	87 (100.00)

(Figures in parenthesis indicate percentages to the total workers i.e. 87)

Very few are educated upto S.S.C. (Secondary School Certificate) and graduation. Though sugar factory requires literate workers we find that there are few illiterate ones too. However, the proportion of such workers is very low.

#### 6.6 Landholdings of the Factory Workers

Agriculture is one of the important sources of income, for the factory workers. As the factory is situated in the heart of rural area, the factory workers from the surrounding villages can look after their agriculture during their off-time from the factory. These workers can get additional income from their land. Table 6.4 shows the landholdings of the sugar factory workers. Out of the total factory workers, 48.28 per cent are landholders and 51.72 per cent are landless. The factory workers holding some land are divided into three categories according to their landholding. It is to be noted that this classification is different from the classification done earlier for Chapter III.

(1) Small landholders: Those who have land upto 5.00 acres are included in this group. Out of the total workers, 39.09 per cent are small land holders. Among the seasonal workers (51.72 per cent) 23.00 per cent are small landholders while the proportion of small holders is 13.79 per cent among the permanent workers (41.38 per cent). The proportion of the small landholders among the temporary labourers is 2.30 per cent.

(2) Medium Size of Landholders: The workers who have

**Table 6.4. Classification of the sugar factory workers according to their landholdings**

(Total No. of workers = 87)

Category of workers	Size group or land holding owned					
	Upto 5.00 acres	5.1 to 15.00 acres	Above 15.1 acres	Total land-holders	Landless workers	Total
Permanent	12 (13.79)	4 (4.60)	1 (1.15)	17 (19.54)	19 (21.84)	36 (41.38)
Seasonal	20 (23.00)	1 (1.15)	1 (1.15)	22 (25.30)	23 (26.43)	45 (51.72)
Temporary	2 (2.30)	1 (1.15)	-	3 (3.45)	3 (3.45)	6 (6.90)
<b>Total</b>	<b>34</b> (39.09)	<b>6</b> (6.90)	<b>2</b> (2.30)	<b>42</b> (48.28)	<b>45</b> (51.72)	<b>87</b> (100.00)

(Figures in parenthesis indicate percentages to the total workers of those who hold land and of the landless labourers in each category).



land in the range between 5.01 and 15.00 acres are included in this group. The proportion of the landholders working in the factory in this group is 6.90 per cent. Among the medium landholders (6.90 per cent) the proportion of the permanent workers is 4.60 per cent. In the case of seasonal and temporary workers, it is 1.15 per cent each.

(3) Large Size Landholders: Those who hold land above 15.1 acres are included in this group. The landholders from this size group of holding have been working as permanent and seasonal workers, because most of them hold dry land. 2.30 per cent of the workers hold land in this size group of holding.

(4) Landless labourers: Landless labourers constitute 51.72 per cent of the total labourers employed in the sugar factory; this is made up of permanent workers (21.84 per cent), seasonal workers (26.43 per cent), and temporary ones (3.45 per cent).

From the table we can come to the conclusion that 48.28 per cent of the factory labourers are from farming families. Due to the establishment of the sugar factory these families could get an additional source of income. In the absence of the sugar factory, these workers would have remained simple farmers, having inadequate income. As the income of the cultivators from agriculture was very low, they were badly in need of subsidiary occupations, which they could get after the establishment of the sugar factory.

In brief, we can say prima facie that due to the establishment of the sugar factory some farmers from all the size groups of holdings have been benefitted.

#### 6.7 Source of the family income of the factory workers

Apart from the salaries and wages other sources of family income of the factory workers are considered here. The relevant information is presented in Table 6.5.

From the table it is clear that 56.33 per cent of the factory workers have other sources of family income, while the rest are dependent only on the factory employment. The other sources of family income of the workers are discussed below.

(1) Agriculture: It has already been explained with the help of Table 6.4 that out of the total workers, 48.28 per cent own land. But due to lack of irrigation facilities and in some cases the small size of holdings, the income from this source is very low.

(2) Income from manual labour of the family members: 3.45 per cent of the workers get income from this source. The earnings of the seasonal workers from factory work are small. So, in order to supplement their income, other members of families of the workers work as manual labourers in agriculture.

(3) Income from the services of family members: Nearly 2.30 per cent of the factory workers get income from this source. Some members of the families of these workers are

**Table 6.5. Classification of the factory workers according to their sources of income**  
(Total workers = 87)

Category of labourers	Sources of Income				No. of workers who have sources of additional income	Workers who do not have sources of additional income	Total workers
	Agri-culture	Manual labour of other family members	Services of the family members	Traditional occupation			
Permanent	17 (19.54)	-	2 (2.30)	-	19 (21.84)	17 (19.54)	36 (41.38)
Seasonal	22 (25.30)	3 (3.45)	-	2 (2.30)	27 (31.04)	18 (20.68)	45 (51.72 <sub>a</sub> )
Temporary	3 (3.45)	-	-	-	3 (3.45)	3 (3.45)	6 (6.90)
Total	42 (48.28)	3 (3.45)	2 (2.30)	2 (2.30)	50 (56.33)	37 (43.67)	87 (100.00)

(Figures in parenthesis indicate percentages to the total workers)

employed in private and government concerns.

(4) Income from the traditional occupations: Some workers are presently engaged in their traditional occupations during off time, such as tailoring, washing, cobbling, carpentry, etc. The traditional occupations have become their side business. Nearly 2.30 per cent workers get income from this source. If we see Table 5.7 and 6.5, we can come to the conclusion that as compared to the agricultural labourers, the sugar factory workers have more sources of additional income.

#### 6.8 Family income of the factory workers

In the Fifth chapter we have seen that nearly 79 per cent of the agricultural labourers are below the level of subsistence. Let us consider the case of factory workers. Here one must remember that the cost of living at factory site is higher than that in the villages. It was presumed that a family of five members of agricultural labourer requires Rs. 150 per month for its subsistence. The necessities of a factory labourer are in some respects different from those of agricultural labourers. A factory worker has to spend more on house accommodation, clothes and food. The subsistence level of the factory workers is worked out on the basis of the report of the National Sample Survey 1970-71.<sup>1</sup> As per the data there, a family having five members in Maharashtra State required minimum Rs. 181.83 per month for consumption. On this basis the budget for the same size of a family for 1975-76 is estimated by considering the con-

sumers' index number of the respective year. According to the estimate the amount has increased to Rs. 313.76. On this presumption we can say that the families having a monthly income of less than Rs. 250 are below the subsistence level. The families having a monthly income in the range between Rs. 250 and Rs. 350 are on the subsistence level and the families having a monthly income above Rs. 351 are above the subsistence level.

In the above Rs. 351 category two more income groups can be formed. The first is in the range of Rs. 351 to Rs. 500, which can be called as medium income group. The second is above Rs. 501. This latter can be described as the high income group. The monthly family income of the workers is presented in Table 6.6.

(a) Income below the subsistence level: The workers having monthly family income below Rs. 250 are included in this income group. The table shows that 4.60 per cent of the workers are below the subsistence level. The factory workers are being paid according to the Industrial Wages Act. On the contrary, the agricultural labourers are not being paid according to the Minimum Wages Act though it has specially been passed for the agricultural labourers. Hence, the proportion of agricultural labourers below the level of subsistence is quite high i.e. 78.92 per cent (Table 5.9).

(b) Income on the subsistence level: It has been explained that the workers having a monthly family income in

**Table 6.6. Classification of the sugar factory workers according to their Monthly Family Income**

(Total workers = 87)

Income Groups Rs.	Categories of the workers			Total
	Perma- nent	Seasonal	Temporary	
Upto 200	-	-	-	-
201 to 250	-	1 (1.15)	3 (3.45)	4 (4.60)
251 to 350	5 (5.75)	7 (8.05)	1 (1.15)	13 (14.98)
351 to 500	15 (17.24)	27 (31.03)	1 (1.15)	43 (49.43)
501 to 750	9 (10.34)	9 (10.34)	-	18 (20.68)
751 to 1000	3 (3.45)	1 (1.15)	1 (1.15)	5 (5.75)
Above Rs. 1001	4 (4.60)	-	-	4 (4.60)
<b>Total</b>	<b>36</b> (41.38)	<b>45</b> (51.72)	<b>6</b> (6.90)	<b>87</b> (100.00)

(Figures in parenthesis indicate percentage to the total workers)

the range between Rs. 251 and Rs. 350 are included in this income group. 14.98 per cent of the workers are having income on the subsistence level. Out of these, 1.15 per cent are from the category of temporary workers, 8.05 per cent are from the category of seasonal workers and 5.75 per cent

are from the category of permanent workers.

(c) Income above subsistence level: The workers having monthly family income above Rs. 351 are included in this group. Of the factory workers, 80.42 per cent have their family income above subsistence level. All the permanent workers are having their income above subsistence level.

6.9 As suggested above, the group can be divided into two more groups as below:

(i) Medium income group: The workers having monthly family income in the range between Rs. 351 and Rs. 500 come under this group. 49.43 per cent of the workers are in the medium income group. Among the workers, 17.24 per cent are from the category of permanent workers whereas 31.03 per cent are from the category of seasonal workers. The proportion of seasonal workers is higher among the workers of medium income group, because as compared to permanent workers, income of the seasonal workers is low; and their proportion to the total workers is also more than that of permanent workers.

(ii) Higher Income Group: The workers having income more than Rs. 501 are included in this category. 31.03 per cent of the workers come under this group. Among these workers the proportion of the permanent workers is higher. Of these 18.39 per cent are from the category of permanent and 11.49 per cent are from the seasonal workers. Nearly all the workers in this group are having income from other sources like agriculture, traditional occupation, etc.

From Table 6.6, we can conclude that as compared to the monthly family income of the agricultural labourers the income of factory workers is greater.

6.10 Apart from the salaries and wages, the sugar factory workers also get other advantages which are explained in Table 6.7. The workers get bonus, remuneration for overtime work, foodgrains at reasonable price, medical aid, house accommodation, etc. Hence, their real income is more.

6.11 Benefits other than Wages and Salaries received by the Sugar Factory Workers

The benefits from the sugar factory received by the workers are shown in Table 6.7.

(1) Bonus: From the Table, it is clear that 100.00 per cent of the workers get bonus. The rate of bonus varies between 8 and 20 per cent according to the profit of the sugar factory and the policy of the Government. The workers get bonus every year at the time of Diwali festival or at the beginning of every season.

(2) Overtime: Generally, these workers work for eight hours. If they work for more than eight hours, they can get overtime at the rate decided by Industrial Wages Act. 52.87 per cent of the workers get benefit of overtime. The proportion of seasonal workers is more because of two reasons. Firstly, among the total factory workers proportion of the seasonal workers to is more than that of permanent workers and secondly, as majority of them are technical workers, they



Table 6.7. Classification of the sugar factory workers according to the benefits received by them.

Category of workers	No. of workers in the category	Benefits received					
		Bonus	Over-time	Foodgrains at the reasonable rate	Medical aid	Educational facility	House accommo- dation
Permanent	36 (41.38)	36 (41.38)	19 (21.40)	24 (27.58)	34 (39.08)	16 (18.38)	26 (29.88)
Seasonal	45 (51.72)	45 (51.72)	27 (31.03)	24 (27.58)	44 (50.57)	29 (33.33)	4 (4.60)
Temporary	6 (6.90)	6 (6.90)	-	3 (3.45)	4 (4.60)	3 (3.45)	-
Total	87 (100.00)	87 (100.00)	46 (52.87)	51 (58.62)	82 (94.25)	48 (55.17)	30 (34.48)

(Figures in parenthesis indicate percentages to the total workers)

can get overtime benefit at the time of the crushing season. The amount which they get for overtime work varies according to the hours of work. There is no such overtime compensation in the case of the agricultural labourers.

(3) Foodgrains at reasonable prices: The factory has opened a foodgrains shop from which workers get foodgrains like wheat, jowar, bajara and rice at reasonable prices which is lower than the market rate. 58.62 per cent of the workers have received the benefit.

(4) Medical aid: The factory has opened a dispensary for medical aid to the workers. The workers get medical treatment at a concessional rate. 94.25 per cent of the workers have received the benefit.

(5) Educational Facility: It has already been mentioned that the factory has opened a primary school at the factory site. The factory has also given donations to some high schools and colleges which are situated in the area surrounding the factory. The children of the workers get the benefit of education as a result. 55.17 per cent of the workers have received the benefit. The details about the donations given by the factory is given in Chapter VIII.

(6) House accommodation: Generally, the factory provides accommodation to the needy permanent workers. Many workers are residents of the villages near the factory so most of the workers do not stay at the factory site. From those who are accommodated in the factory staff quarters, the

factory charges nominal rent, such as Rs. 35 for 'B' type of quarters, and for C, D and E types of quarters the factory charges Rs. 20, Rs. 5 and Rs. 3 respectively. The quarters are built with all facilities like toilet, electricity, etc. 34.48 per cent of the workers have been enjoying this facility. It is found that the quarters are allotted to the seasonal workers if the quarters are not demanded by the permanent workers.

From the table we can conclude that the workers are getting many facilities which increase their real income. As a result, the real income of the factory workers is more than that of the agricultural labourers.

#### 6.12 Standard of living of the workers

Standard of living of the sugar factory workers must be higher than that of agricultural labourers as a result of their higher income as compared to that of agricultural labourers. We have seen that a number of agricultural workers' live in huts at the farm sites and some of them live in owned houses in their villages. A majority of the factory workers are residents of the local area nearly 8 to 10 kilometers away from the factory site. Such workers stay at their native villages. Those who find it inconvenient stay at the factory site. The residential conditions of the factory workers are given in Table 6.8.

Table 6.8 indicates the number of families living in different housing conditions.

**Table 6.8.** Classification of the sugar factory workers according to their housing condition

Category of workers	Housing Conditions				
	Factory quarters	Owned houses in native villages	Hired houses at the factory site	Huts at the factory site	Total
Permanent	26 (29.88)	10 (11.50)	-	-	36 (41.38)
Seasonal	4 (4.60)	26 (29.88)	4 (4.60)	11 (12.63)	45 (51.72)
Temporary	-	5 (5.75)	-	1 (1.15)	6 (6.90)
Total	30 (34.68)	41 (47.13)	4 (4.60)	12 (13.79)	87 (100.00)

(Figures in parenthesis indicate percentages to the total workers, i.e. 87)

(1) Factory quarters: It is already mentioned that the factory staff quarters are provided for the workers at very low rents. The quarters are of four types i.e. B, C, D and E. B type of quarters are for the accommodation of first class officers and C type for second class officers. D and E type of houses are for the rest of the workers. Out of all workers, 34.68 per cent of the workers live in these quarters, of which 29.88 per cent (27.58 per cent

excluding officers) are from the category of permanent workers and 4.60 per cent from the seasonal workers. The staff quarters are being provided primarily for permanent workers. The factory provides these to seasonal and temporary workers also only after the demands of the permanent workers are met.

(2) Owned Houses: Many factory workers live in their native villages. The villages are nearly 2 to 10 kms away from the sugar factory. For the convenience of their families the factory workers live in their native villages. Some of the workers have to stay in their native villages because of the lack of housing at the factory site. 47.13 per cent of the workers live in such houses at the native villages. The percentage of the workers living in their own houses in the native villages is higher in the category of seasonal workers.

(3) Hired houses: Out of the total families very few families and those from among the seasonal workers are living in the privately hired houses. The percentage of such workers is only 4.60. But not a single family from the category of permanent workers is living in hired houses.

(4) Huts at the factory site: Those who do not get factory staff quarters and those who cannot afford hired houses are living in temporary huts at the factory site. Only seasonal and temporary workers are living in such huts. These workers seek work outside the factory in the off season.

The percentage of the workers living in such huts is 13.79.

The permanent workers of the factory are provided with housing facilities but seasonal and temporary workers are not regularly provided with this facility. Thus it can be concluded that the housing problem is less difficult for the permanent workers, but it is quite difficult for the seasonal and temporary workers.

In general, we can say that the housing conditions of the sugar factory workers are better than the housing conditions of the agricultural labourers in rural areas.

#### 6.13 Change in the household equipments of the workers

Even though it is true that the time factor influencing standard of living cannot be separated from overall effects on the household consumption pattern, it is justifiable to say that the change in the consumption pattern is mainly due to the increase in income made possible by better job possibilities after the establishment of the sugar factory.

Before the establishment of the factory many of the factory workers were working as agricultural labourers and hence their income was very low. Their income has increased after the establishment of the sugar factory. As a result of the increase in income, their pattern of expenditure has also undergone a change. They have started purchasing necessities of life in slightly larger quantities and comforts and luxuries to some extent. In Table 6.9 the change in the household equipments is shown.

**Table 6.9. Change in the household equipments of the workers after the establishment of sugar factory**  
(Total families of workers are 87)

Category of workers	Before and after the establishment of the sugar factory	Type of household equipment								
		Radio	Fan	Cot	Table	Chair	Fuel gas	Bicycle	Motor cycle	Sewing machine and steel almirah
Permanent	Before	8 (9.19)	4 (4.60)	5 (5.75)	3 (3.45)	4 (4.60)	-	9 (10.34)	-	-
	After	24 (27.59)	11 (12.63)	25 (28.74)	12 (13.79)	15 (17.24)	3 (3.45)	30 (34.48)	4 (4.60)	7 (8.05)
Seasonal	Before	-	-	1 (1.15)	-	-	-	2 (2.30)	-	-
	After	4 (4.60)	-	3 (3.45)	1 (1.15)	1 (1.15)	-	16 (18.39)	-	-
Temporary	Before	1 (1.15)	-	1 (1.45)	-	-	1 (1.15)	1 (1.15)	-	-
	After	2 (2.30)	-	2 (2.30)	1 (1.15)	1 (1.15)	1 (1.15)	2 (2.30)	-	-
Total	Before	5 (5.75)	4 (4.60)	7 (8.05)	3 (3.45)	5 (5.75)	1 (1.15)	12 (13.79)	-	-
	After	30 (34.48)	11 (12.63)	30 (34.48)	14 (16.10)	17 (19.54)	4 (4.60)	48 (55.17)	4 (4.60)	7 (8.05)

(Figures in parenthesis indicate the percentages to the total families of workers)

From Table 6.9 it is clear that the number of household equipments increased in the case of workers who are in the permanent service of the factory, whereas the workers from the category of temporary labourers do not have household equipments such as fan, motor cycle, sewing machine, etc. Very few workers possess other types of household equipments. The details of the possession of household equipment are given below:

(1) Radio: Before the sugar factory only 5.75 per cent of the workers owned radios. Now this percentage has increased to 34.48. The percentage of radio holders is higher among the permanent workers.

(2) Fan: Before the establishment of the sugar factory only the permanent workers had fans. The same is the case now. The percentage of the fan holders was 4.60. Now 12.63 per cent of the workers are having fans.

(3) Cot: Prior to the establishment of the factory very few workers had cots. The percentage of the cot holders has increased from 8.05 to 34.48.

(4) Table and Chairs: Before the establishment of the factory 3.45 per cent and 5.75 per cent of the workers had tables and chairs respectively. But now, the percentages have increased to 16.10 and 19.54 respectively.

(5) Fuel gas: Prior to the factory, 1.15 per cent of the workers <sup>were</sup> using fuel gas. Now the percentage has increased to 4.60.



(6) Bicycle: It has already been explained that many of the workers do not stay at the factory site. They live in their native villages and cycle to their duties at the factory. Some link roads are constructed by the sugar factory; but there is no convenient bus service on some of the roads. Thus the labourers prefer bicycle as a convenient means of transport. There were 13.79 per cent of the families who had bicycles. Now the percentage has increased to 55.17. In the case of permanent workers the percentage is higher.

(7) Motor Cycle: Before the sugar factory not a single worker owned a motor cycle. Now 4.60 per cent of them own motor cycles.

(8) Sewing machines and steel almirah: Previously no worker had sewing machine and almirah. At present 8.05 per cent of the families possess these equipments.

From Table 6.9 we can conclude that the standard of living of the factory workers has improved after the establishment of the sugar factory. Another thing to be noted is that among the factory workers, standard of living of the permanent workers is high as compared to that of the seasonal and temporary workers.

#### 6.14 Change in the Consumption Pattern of the factory labourers

We have seen that with the change in the income, there is also a change in the household equipments of workers. In the same way we have to consider the change in the con-

sumption pattern of workers. One point to be noted here is that data presented in Tables 6.10 and 6.11 have their own limitations in showing the change in the consumption pattern of the sugar factory workers. The data explain only the qualities of the particular types of commodities and not quantities of the commodities which are being consumed. Still the data can throw some light on the probable change in the consumption pattern of the sugar factory workers. Relevant information is presented in Table 6.10.

Table 6.10 points out that there is no change in the consumption pattern of the majority of workers. The consumption pattern of 83.90 per cent of the workers has remained unchanged. It seems that some minor changes in the consumption pattern have taken place in the case of 16.10 per cent of the workers. Consumption pattern of 8.05 per cent of the workers has deteriorated whereas it has improved in the case of 8.05 per cent of the workers. One important but a rather inexplicable fact to be noted is that the workers whose consumption pattern has deteriorated are from the category of permanent workers.

We can conclude that the change in the consumption pattern of some of the permanent workers is in the nature of worsening and is far greater than that in the consumption pattern of the seasonal and temporary workers wherever it has occurred. Secondly, there is practically no change in the consumption pattern of the temporary workers even after

Table 6.10. Change in the Consumption pattern of the families of factory workers

Consumption Before the establishment of the sugar factory (1962-63)	Consumption After the establishment of the sugar factory (1975-78)	Categories of the workers (families)						Total		Remarks	
		Permanent		Seasonal		Temporary		No. of families	₹		
		No. of families	%	No. of families	%	No. of families	₹				
1. Jowar	Jowar	1	5.75	23	26.44	2	2.30	30	34.48	No change in the consumption of 83.90 per cent of the families	
2. Jowar and Bajara	Jowar and Bajara	7	8.05	12	13.79	3	3.45	22	25.29		
3. Wheat and Bajara	Wheat and Bajara	-	-	-	-	1	1.15	1	1.15		
4. Jowar, Bajara, Wheat	Jowar, Bajara, Wheat	-	-	3	3.45	-	-	3	3.45		
5. Jowar, wheat, Rice	Jowar, Wheat, Rice	2	2.30	1	1.15	-	-	3	3.45		
6. Jowar, Wheat, Bajara, Milk	Jowar, Wheat, Bajara, Milk	2	2.30	-	-	-	-	2	2.30		
7. Wheat, Rice, Milk, Eggs	Wheat, Rice, Milk, Eggs	-	-	1	1.15	-	-	1	1.15		
8. Wheat, Jowar	Wheat, Jowar	7	8.05	1	1.15	-	-	8	9.19		
9. Wheat, Jowar, Rice, Eggs, Milk	Wheat, Jowar, Rice, Eggs, Milk	1	1.15	-	-	-	-	1	1.15		
10. Wheat, Rice, Fruits, Milk, Eggs	Wheat, Rice, Fruits, Milk, Eggs	1	1.15	-	-	-	-	1	1.15		
11. Jowar, Wheat, Bajara, Rice, Eggs	Jowar, Wheat, Bajara, Rice, Eggs	1	1.15	-	-	-	-	1	1.15		
12. Jowar	Jowar and Wheat	1	1.15	1	1.15	-	-	2	2.30		Improvement in the consumption
13. Wheat, Bajara, Rice	Wheat, Bajara, Rice, Fruits, Milk, Eggs	1	1.15	-	-	-	-	1	1.15		
14. Jowar, Bajara	Wheat, Jowar, Bajara	-	-	1	1.15	-	-	1	1.15		of 8.05 per cent of the families
15. Wheat, Bajara, Rice, Milk	Wheat, Bajara, Rice, Fruits, Milk, Eggs	1	1.15	-	-	-	-	1	1.15		
16. Jowar, Bajara	Jowar, Bajara, Wheat, Rice, Milk	1	1.15	-	-	-	-	1	1.15		Consumption of 8.05 per cent of the families deteriorated
17. Jowar, Bajara	Jowar, Bajara, Wheat, Rice	-	-	1	1.15	-	-	1	1.15		
18. Jowar	Bajara	2	2.30	1	1.15	-	-	3	3.45		
19. Wheat, Jowar, Bajara, Rice, Milk, Fruits, Eggs	Wheat, Jowar, Milk	1	1.15	-	-	-	-	1	1.15		
20. Wheat, Jowar, Rice, Fruits, Milk, Eggs	Wheat, Milk, Eggs	1	1.15	-	-	-	-	1	1.15		
21. Jowar, Bajara, Wheat	Jowar, Bajara	2	2.30	-	-	-	-	2	2.30		

the establishment of the sugar factory.

#### 6.15 Consumption of Cloth

There is also some change in the consumption of cloth of the factory workers. We have seen that the majority of the agricultural workers were consuming coarse cloth, and medium type of cotton cloth. In Table 6.11 the consumption of cloth by the sugar factory workers is given. The table shows that there is no change in the consumption of cloth of 79.31 per cent of the workers. Among these workers, 72.41 per cent (1 and 2) were consuming coarse and medium type of cloth, and 6.90 per cent (3, 4 and 5) of the workers were consuming superior cotton cloth, coarse cloth and terrycotton. They have been consuming the same type of cloth. This may be an indication of an increase in income which is less than that beyond which a further qualitative improvement in the consumption of cloth is possible.

In the case of the remaining 20.69 per cent of workers, the pattern of cloth consumption has changed. These workers have started consuming the superior variety of cloth. Many of them have started using terelene, terrycotton and superfine cotton cloth. Some of the workers have started consuming superior cotton cloth. Prior to the establishment of the factory, these families were consuming cotton cloth, woollen, silk, but now these workers started using only superfine cloth. This may also be due to the change in tastes.

**Table 6.11.** Classification of the sugar factory workers before (1961-62) and after (1975-76) the establishment of the sugar factory according to their consumption of cloth

(Total No. of workers = 87).

Consumption of cloth Before sugar factory	Consumption of cloth After sugar factory	Categories of workers (Families)						Total		Remarks
		Permanent		Seasonal		Temporary		No. of families	%	
		No. of families	%	No. of families	%	No. of families	%			
1. Coarse cloth	Coarse cloth	5	5.75	5	5.75	1	1.15	11	12.64	] No change in the consumption of cloth of 79.31% workers
2. Medium type of cotton cloth	Medium type of cotton cloth	17	19.54	31	35.63	4	4.60	52	54.77	
3. Superfine cotton, Terry-cottons	Superfine cotton, Terry-cottons	2	2.30	-	-	-	-	2	2.30	
4. Medium and coarse cloth	Medium and coarse cloth	1	1.15	2	2.30	-	-	3	3.45	
5. Cotton cloth, Tereline	Cotton cloth, Tereline	1	1.15	-	-	-	-	1	1.15	
6. Cotton cloth (Medium)	Superfine cotton cloth	-	-	4	4.60	1	1.15	5	5.75	] Change in the consumption of cloth of 20.69% workers
7. Superfine cotton	Superfine cotton, Tereline and Terecot	9	10.34	3	3.45	-	-	12	13.79	
8. Cotton, Woolen, silk	Superfine cotton	1	1.15	-	-	-	-	1	1.15	
	<b>Total</b>	<b>36</b>	<b>41.38</b>	<b>45</b>	<b>51.72</b>	<b>6</b>	<b>6.90</b>	<b>87</b>	<b>100.00</b>	

The percentages are to the total factory workers i.e. 87

From Table 6.11, we can see that there is no significant change in the consumption of cloth. Only in the case of families of the permanent workers, the change is significant. These changes are minor in the case of seasonal and temporary workers.

#### 6.16 Expenditure Pattern of the Factory Workers

The expenditure pattern of the factory workers is shown in Table 6.12.

From Table 6.12 it is clear that only the permanent and seasonal workers have utilised their income for different purposes as below:

(1) House Construction: Out of the total workers, 17.24 per cent have spent on house construction. As compared to the investment in other items the workers from the category of permanent workers have invested more in house construction.

During the survey it is observed that the permanent workers have a tendency towards constructing houses in the city. But the seasonal workers prefer to construct houses in their native villages.

(2) Purchase of land: 8.05 per cent of the workers have purchased land. As expected, in the case of permanent workers the proportion of land purchases is more.

(3) Share Purchase: It includes the shares of cooperative societies, bank, and 'servants' cooperative Patpedhi. 12.64 per cent of the workers have invested in this item.

**Table 6.12. Classification of the factory workers according to utilization of surplus income**

Category of workers	No. of workers	House construction	Purchase of land	Purchase of shares	Deposited in Bank	Purchase of furniture	Other purchase
Permanent	36 (41.38)	11 (12.04)	4 (4.60)	7 (8.05)	7 (8.05)	8 (9.14)	4 (4.60)
Seasonal	45 (51.72)	4 (4.60)	3 (3.45)	4 (4.60)	4 (4.60)	2 (2.30)	-
Temporary	6 (6.90)	-	-	-	-	-	-
Total	87 (100.00)	15 (17.24)	7 (8.05)	11 (12.64)	11 (12.64)	10 (11.50)	4 (4.60)

(Figures in parenthesis indicate percentages to the total number of workers)

(4) Deposits in the Bank: The percentages of the share purchases and depositors are the same. In both the cases the percentage is very low.

(5) Purchase of furniture: Many of the factory workers have purchased furniture with their increased income. The percentage of furniture purchasers is 11.50. Very few seasonal workers have spent on this item.

(6) Other type of investments: It includes expenses incurred on life insurance, land development, such as leveling, bunding and well construction, etc. 4.60 per cent of the factory workers have spent for these purposes.

#### 6.17 Advantages of the sugar factory to the workers

Advantages of the sugar factory to the workers are classified in Table 6.13.

(1) Increased transport facility: Due to the establishment of the sugar factory many link roads have been constructed, resulting in increased means of transport. Naturally, the transportation of agricultural products and of people in the region became more convenient. 97.70 per cent of the workers have reported this benefit.

(2) Educational facilities: It has been explained that the factory has given donation to various educational institutions in the region. It has also opened primary schools on the factory site. This enables the children of the workers to get cheap and easily accessible educational facility. 89.65 per cent of the workers have reported this benefit.



**Table 6.13.** Classification of the sugar factory workers according to the advantages of the sugar factory received by them

Category of workers	No. of workers in the category	Advantages of the factory received		
		Facility of increase in transport	Educational facility	Medical aid
Permanent	36 (41.38)	34 (39.08)	32 (36.78)	31 (35.63)
Seasonal	45 (51.72)	45 (51.72)	41 (47.13)	35 (40.23)
Temporary	6 (6.90)	6 (6.90)	5 (5.75)	4 (4.60)
Total	87 (100.00)	85 (97.70)	78 (89.65)	70 (80.45)

(Figures in parenthesis indicate percentages to the total workers i.e. 87).

(3) Medical aid: It has also been mentioned that the factory has opened a dispensary at the factory site. The factory workers get quick medical service at concessional rate. 80.45 per cent of the workers have reported this benefit.

#### 6.18 Occupational migration of the factory workers

It has already been mentioned that before the establish-

ment of the factory a majority of the factory workers were agricultural labourers and agriculturists. Out of the rest, some were engaged in their traditional occupations such as rope-making, barber-shop, carpentry, smith, etc. Against this background we have also observed the change in the income and standard of living of factory workers. Now we analyse the reasons why they have shifted from their own occupations to sugar factory employment and from their native places to the sugar factory area. Information regarding the original occupations from which the workers migrated is classified in Table 6.14.

The table points out that a majority of the workers have shifted from the agricultural sector. Details about the occupational shifts are given below:

(1) Agriculture: Out of the total workers, 48.28 per cent were agriculturists. The proportion of smaller farmers is higher among the agriculturists. It is shown in Table 6.5. Some of them are also larger landholders. During the survey it is observed that many workers from the families of larger landholders hold important posts in the factory while a majority of the workers from the families of smaller holders have been working as the seasonal workers. The reason for this is that bigger landholders could afford higher education of their children while smaller farmers were not able to do so. Hence it is possible for the children of the bigger farmers to become officers while the children of the

**Table 6.14. Classification of the workers according to their occupational migration  
(Total workers - 87)**

Name of the original occupations	Permanent labourers		Seasonal labourers		Temporary labourers		Total labourers	
	No.	%	No.	%	No.	%	No.	%
1. Agriculture	18	20.68	21	24.15	2	2.30	41	48.28
2. Agricultural labour	3	3.45	5	5.75	1	1.15	9	10.34
3. Non-agri. labour	2	2.30	13	14.94	2	2.30	17	19.54
4. Smithy	2	2.30	1	1.15	-	-	3	3.45
5. Cobblery	-	-	2	2.30	-	-	2	2.30
6. Tailoring	1	1.15	-	-	-	-	1	1.15
7. Goldsmithy	1	1.15	-	-	-	-	1	1.15
8. Service	8	9.19	2	2.30	1	1.15	11	12.64
9. Launderer	-	-	1	1.15	-	-	1	1.15
10. Scavenging	1	1.15	-	-	-	-	1	1.15
Total	36	41.38	45	51.72	6	6.90	87	100.00

smaller farmers have to work as unskilled workers.

(2) Agricultural labour: Prior to the sugar factory, 10.34 per cent of the workers were working as agricultural labourers. Now, out of these former labourers 3.45 per cent are working as permanent labourers, while 5.75 per cent and 1.15 per cent are working as the seasonal and temporary workers respectively. Now they do not work as agricultural labourers.

(3) Non-agricultural labourers: Before the establishment of the sugar factory, 19.54 per cent of the workers were working in quarries, construction, trade and commerce, transport, plantation, etc. Now they have started working as seasonal workers and very few of them are working as permanent workers. In off-season, many of them work as manual labourers and in their previous occupations.

(4) Smithy: Prior to the sugar factory some persons who were working as blacksmiths have now started working as sugar factory workers. Nearly 3.45 per cent of the workers are drawn from this occupation.

(5) Cobblery: Before the establishment of the sugar factory, 2.30 per cent of the workers were cobblers. Now they work as seasonal labourers.

(6) Service: There are some factory workers whose traditional occupation was service in private and government concerns. The percentage of such workers is 12.64. A majority of them are educated and skilled labourers. Out of

them, 9.19 per cent are permanent workers, while 2.30 per cent and 1.15 per cent have been working as seasonal and temporary workers respectively. The workers who have been working as temporary and seasonal workers are unskilled and less educated.

(7) Others: The other workers are from occupations like tailoring, laundry, scavenging etc. Some of them are working as permanent workers.

From Table 6.14 we come to the conclusion that due to the establishment of the sugar factory some agricultural labourers, agriculturists and non-agriculturists in the region could get employment in the factory. Thus there is total change in their occupations. As a result, their income has increased after the establishment of the factory.

#### 6.19 Geographical migration of the workers

After the establishment of the sugar factory, many workers have migrated from neighbouring talukas, districts and even from other States of India to the region of the factory. Data collected regarding the geographical migration of the workers is presented in Table 6.15.

Table 6.15 indicates that the percentage of local workers is high. It is 58.83 per cent. The percentage of immigrants from other talukas of the Ahmednagar district is 8.05. 32.17 per cent have migrated from other districts of the Maharashtra State. Of course these districts are the neighbouring districts, viz. Nasik and Aurangabad. The

**Table 6.15.** Classification of the sugar factory workers according to the places from which they have migrated

(Total No. of workers - 87)

Category of labourers	Local and from the Kopergaon taluka	From other talukas of the Ahmed-nagar district	From the other dists of the Maharashtra State	From other States	Total
Permanent	20 (23.00)	4 (4.60)	11 (12.63)	1 (1.15)	36 (41.38)
Seasonal	27 (31.03)	3 (3.45)	15 (17.24)	-	45 (51.72)
Temporary	4 (4.60)	-	2 (2.30)		6 (6.90)
Total	51 (58.83)	7 (8.05)	28 (32.17)	1 (1.15)	87 (100.00)

(Figures in parenthesis indicate percentage of workers to the total)

nearest border of the Nasik district is only 15 kms away from the location of the factory.

The percentage of the immigrants from other States is very low i.e. only 1.15. The only State from which the workers have migrated are Madhya Pradesh.

From Table 6.15 we can conclude that the establishment of the factory has not provided employment to the people in

the region but has also provided employment opportunities to outsiders.

6.20 Reasons for the occupational shifts and geographical migration of the workers

In order to throw light on the reasons for the migration of the workers, the relevant data are presented in Table 6.16.

The reasons for migration reported by the workers are given below.

(1) Lack of livelihood: Out of the total workers, 48.28 per cent have migrated to the factory service because they are landless and do not have any other occupation to earn their livelihood. Among these workers, the proportions of permanent, seasonal and temporary workers are 24.15 per cent, 19.53 per cent and 4.60 per cent respectively.

(2) Unirrigated land: Due to the lack of irrigation facility, landholders were not getting sufficient income to maintain their families from agriculture. Percentage of such workers is 9.20.

(3) Small holdings: In Table 6.5 we have seen that there are 48.28 of the workers who hold land. Out of them 33.33 per cent have very small landholdings as compared to their size of families. So, in order to get sufficient income for maintenance of families, they have migrated to the sugar factory area. 23 per cent of these workers are seasonal workers.

**Table 6.16. Classification of the sugar factory workers according to reasons of their migration**

(Total No. of workers = 87)

Reasons for the migration	Categories of workers			Total
	Permanent	Seasonal	Temporary	
1. No land or any other occupation	21 (24.15)	17 (19.53)	4 (4.60)	42 (48.28)
2. Unirrigated land	5 (5.75)	3 (3.43)		8 (9.20)
3. Small holdings	8 (9.18)	20 (23.00)	1 (1.15)	29 (33.33)
4. Source of additional income	2 (2.30)	2 (2.30)	1 (1.15)	5 (5.75)
5. Inadequacy of income from the traditional occupation	-	2 (2.30)	-	2 (2.30)
6. Loss of previous service	-	1 (1.15)	-	1 (1.15)
Total	36 (41.38)	45 (51.72)	6 (6.90)	87 (100.00)

(Figures in parenthesis indicate percentages to the total workers)



(4) Source of additional income: It is observed that some workers are from the families of larger landholders. Their financial condition is also sound enough but still they have been working as sugar factory workers to earn additional income. Percentage of such families is 5.75.

(5) Inadequate income from the traditional occupation: Some persons from the class of non-agriculturists who were working as tailors, cobblers, washermen, blacksmiths, masons, etc. have started working as sugar factory workers. Reason for their occupational shift is that their traditional occupations gave inadequate income. Nearly 2.30 per cent of the workers have migrated due to this reason. These workers are working as seasonal workers. In off season they work in their traditional occupations.

(6) Loss of previous service: There are 1.15 per cent of the labourers who have migrated to the factory service due to the loss of previous service in other concerns.

Thus from Table 6.16 we can say that the majority of the sugar factory workers have migrated from the agricultural sector. As a result, presumably their income has increased. The factory has also provided jobs to the non-agriculturists. Thus income of the non-agriculturist has also presumably increased. In brief, the establishment of the sugar factory has helped in increasing the income of the small farmers, of the agricultural labourers, and of the non-agriculturists alike.

### 6.21 Trade Union of Sugar Factory Workers

The Trade Union of the sugar factory workers is known as Kopargaon taluka Sakhar Kamgar Sabha. The trade union of the sugar factory workers in Maharashtra State was formed in 1940. But it was not very effective upto 1951. The trade union of the sugar factory workers was recognised in 1950 under Bombay Industrial Relations Act. It is observed that the proportion of the members of the trade union is more from the private sugar factories than that of the workers from co-operative sugar factories of the Taluka. The number of trade union members from the factory is given in Table 6.17.

Table 6.17. Classification of the workers according to the membership of the trade union from the Sanjivani Cooperative Sugar Factory

(Total No. of workers = 87)

Category of labourers	No. of workers in the category	Members of the union	Non-members
Permanent	36 (41.38)	28 (32.18)	8 (9.19)
Seasonal	45 (51.72)	41 (47.13)	4 (4.60)
Temporary	6 (6.90)	1 (1.15)	5 (5.75)
Total	87 (100.00)	70 (80.46)	17 (19.54)

(Figures in parenthesis indicate percentages to total workers, i.e. 87).

From Table 6.17 we find that 80.46 per cent of the factory workers are members of the trade union. The proportion of seasonal workers is higher among the members of the trade union. This may be particularly so because the seasonal workers have seen the benefits which permanent workers get. Naturally, they are motivated to seek similar permanent jobs for which membership of a trade union is supposed to help.

#### 6.22 Problems of the workers solved by the Union

The union has solved some problems of the workers mainly related to wages, salaries and the welfare of the factory workers. The information provided by the workers is presented in Table 6.18.

The table shows that nearly 43.68 per cent of the workers have reported about the working of the Union. 31.03 per cent of the workers have reported that the union has compelled the management of the factory to solve the problems of workers, for instance, implementation of new scale suggested by the Second Wage Board, etc. The Union also solved the problems regarding bonus, and dearness allowance. 2.30 per cent of the workers have reported that the union fought against victimization of some of the workers.

5.75 per cent of the workers have reported that the union has compelled the management to start a primary school on the site of factory. It has also been reported that the union has solved the problem of confirmation of some workers.

**Table 6.18. Problems of the sugar factory workers (total 87) solved by their Trade Union**

Nature of the problems solved	No. of workers whose problems are solved and their categories						Total No. of workers whose problems are solved	
	Permanent		Seasonal		Temporary		No. of workers	%
	No. of workers	%	No. of workers	%	No. of workers	%		
1. Implementation of the new scale suggested by the Second Wage Board and increased bonus, dearness allowance, gratuity, etc.	9	10.34	18	20.69	-	-	27	31.03
2. Victimization	1	1.15	1	1.15	-	-	2	2.30
3. Educational facility and medical aid	2	2.30	2	2.30	1	1.15	5	5.75
4. Regarding the designation of workers	-	-	1	1.15	-	-	1	1.15
5. Regarding the confirmation of the workers who have put in continuous service for more than two years	2	2.30	1	1.15	-	-	3	3.45
<b>Total</b>	<b>14</b>	<b>16.09</b>	<b>23</b>	<b>26.44</b>	<b>1</b>	<b>1.15</b>	<b>38</b>	<b>43.68</b>

Though the union of the sugar factory workers has solved certain problems, there are some problems before the workers even now. While some of the problems are of a trivial nature, some of them are important, for instance, the problem on unemployment of seasonal workers during the off season. The problem can be solved by providing subsidiary occupations to the seasonal workers.

6.23 Thus from the survey of the sugar factory workers it can be said that out of the total workers, majority of them are from the families of small farmers and agricultural labourers. The proportion of illiterate and less educated workers is quite high in the case of the seasonal workers. Very few workers have migrated from the other districts and states to the factory. Due to the establishment of the factory, the landless labourers, small farmers, dry landholders and the persons from the other occupations like blacksmithy, cobblery, carpentry, hair-dressing, etc. could get jobs in the sugar factory. So their real income has presumably increased. As compared to agricultural labourers, the financial conditions of the sugar factory workers are better. The workers also get other benefits like overtime, bonus, medical aid, etc. Hence their real income has also increased. Due to the increase in income, the standard of living of farmers has also risen.

#### FOOTNOTE

- 1 The National Sample Survey, Twenty-fifth Round 1970-71, p. 9. Dept. of Statistics, Ministry of Planning, New Delhi, 1978.

## CHAPTER VII

### IMPACT OF THE SUGAR FACTORIES ON NON-AGRICULTURISTS

7.1 Generally it can be presumed that like agriculturists, non-agriculturists living in the area of a sugar factory also derive benefits from its establishment. It has been observed that the increased income of people in this region, and immigration of the harvesting labourers during the crushing season in this area, have expanded demand for the consumers' goods and services in the region. It is expected that due to the increased demand for goods and services, the business of the non-agriculturists would flourish and their income would increase leading to an improvement in the standard of living. With this presumption in mind, 10 per cent of the families of the non-agriculturists belonging to different occupations from the selected villages from the area of operation of the Sanjivani Co-operative Sugar Factory were surveyed. The village-wise numbers of families of the non-agriculturists surveyed are given below:

Village	No. of families of non-agriculturists surveyed from the village
1. Anchalgaon	2
2. Apegaon	2
3. Godhegaon	4
4. Kasali	2

5. Khopadi	1
6. Lauki	1
7. Nategaon	3
8. Ogadi	1
9. Savalgaon	1
10. Shinganapur	14
11. Shirasgaon	1
12. Takali	12
13. Talegaon-male	2
14. Tilawani	2
15. Ukkadgaon	3
Total	51

7.2 All these families were doing the same type of business even before the advent of the sugar factory.

The surveyed families of non-agriculturists are classified according to their occupations in the following table (Table 7.1 on next page).

From the above table, we find that nearly all types of non-agriculturists living in the rural area are covered in the survey. The grocers, hawkers, hotelmen, provide essential consumers' goods to the people; while carpenters, iron-smith, rope-makers, cobblers, provide essential services to agriculturists. The services of the other non-agriculturists are important for the self-sufficiency of the villages.

**Table 7.1.** Classification of the families of non-agriculturists according to their occupations

Nature of occupation	No. of families in the occupation
1. Transport	2 (3.92)
2. Hotel	2 (3.92)
3. Grocer	11 (21.57)
4. Carpenter	7 (13.73)
5. Potter	2 (3.92)
6. Bicycle-shop	1 (1.96)
7. Cobbler	7 (13.73)
8. Rope-maker	2 (3.92)
9. Tailor	2 (3.92)
10. Hawker	1 (1.96)
11. Mason	1 (1.96)
12. Iron-Smith	1 (1.96)
13. Barber	4 (7.84)
14. Bangleman	1 (1.96)
*15. Bhikshuk	1 (1.96)
16. Other services	6 (11.76)
Total No. of families	51 (100.00)

\* Bhikshuk means a religious priest. He belongs to the Brahmin caste. He performs religious rites for Hindus. In return he is paid in cash or kind.

(Figures in parenthesis indicate percentages to the total)



### 7.3 Impact on the business of the various non-agriculturists

The presumption that the business of these non-agriculturists might have flourished after the establishment of the sugar factory, due to the increased demand for the essential goods and services as a result of the increased income of the people in the region, has already been cited. Information regarding impact of the sugar factory on the business of non-agriculturists is presented in Table 7.2.

The table points out that the businesses of 29.41 per cent of the families of non-agriculturists have flourished impressively. In the case of 23.53 per cent of the families there is some improvement in the business. There is no impact on the business of 39.22 per cent of the families of non-agriculturists. Finally, there is a deterioration in the business of 7.84 per cent of families.

The impact of the sugar factory on their business as explained by the families in various occupations is narrated below:

(1) Transport: After the establishment of the factory, income of the families engaged in transport business has increased more as compared to the growth in income of the families engaged in other occupations. Out of the two families in the business, the impact is impressive on the business of one family and in the case of the other it is moderate. According to the information given by these families, the demand for their business increased because of the need of

**Table 7.2.** Classification of the families of non-agriculturists according to the kind of impact on their businesses.

Type of Business	No. of families in the business	Impres- sive impact	Mode- rate impact	No impact	Ad- verse impact
1. Transport	2	1	1	-	-
2. Hotel	2	2	-	-	-
3. Grocery	11	6	4	1	-
4. Carpentry	7	4	-	1	1
5. Pottery	2	-	1	1	-
6. Bicycle Shop	1	1	-	-	-
7. Cobble	7	1	2	2	2
8. Rope-making	2	-	-	2	-
9. Tailoring	2	-	-	2	-
10. Hawking	1	-	1	-	-
11. Masonry	1	-	1	-	-
12. Smithy	1	-	-	1	-
13. Saloon	4	-	2	2	-
14. Bangle	1	-	-	1	-
15. Bhikshuk	1	-	-	1	-
Other services	6	-	-	6	-
Total	51	15	12	20	4
Percentage	(100.00)	(29.41)	(23.53)	(39.22)	(7.84)

transporting sugarcane, molasses, bagasse, fuel, sugar, etc. which emerged after the establishment of the sugar factory. Hence, income of these families has increased as compared to their previous income.

(2) Hotel: Two families from the hotel business are surveyed. There is impressive impact on this business.

According to these families, the business has flourished firstly due to increased income of the people in the region and secondly, because of the migration of the harvesting labourers during the crushing season of the factory. The implicit assumption seems to be that with increased income people can afford eating in hotels.

(3) Grocery: Out of 11 families of grocers, there is an impressive impact on the business of six families, and it is moderate in the case of four families. Only one family has registered no impact on its business. This family is from Apegaon village which is nearly 15 kms away from the sugar factory. Majority of the grocers have benefitted by the establishment of the factory. According to them, with the increase in income of the people in the region their consumption pattern has changed, leading to an increase in their demand for groceries. The immigration of the harvesting labourers has also added to the demand for groceries.

(4) Carpentary: Seven families of carpenters were surveyed. Out of them four have reported impressive impact on their business. There is no impact on the business of one family,

while two families have reported adverse impact on their business. Those who have registered impressive impact have got advantage of the nearness of the factory. The villages of these four families are within the radius of 3 to 4 kms from the sugar factory as a result of which they got all the repairing work of carts that transport the sugarcane.

The other carpenter families are residents of the villages which are remote from the sugar factory. The families who have reported adverse impact remarked that many of the farmers are rather reluctant to purchase old fashioned agricultural equipments from the traditional carpenter Balutedars. With the increased income they can afford to purchase modern improved equipments of agriculture. The farmers, who cannot afford to purchase the modern equipments can hire them from the rich farmers. Hence, the traditional occupation of carpenters has suffered a relative decline in their business if they are located away from the proximity of the factory. In order to maintain their level of income, some of the members of carpenter families have been working as agricultural labourers.

From Table 7.2 we can conclude that the establishment of the sugar factory created dual effect on the business of carpenters. On the one hand the demand for the traditional products of the carpenters e.g. agricultural implements declined due to the farmers' tendency of using modern imple-

ments as a result of increase in income. On the other hand, the carpenters who worked very close to the factory got a substitute demand for their skill and products due to the increase in bullock-cart transportation of sugarcane.

(5) Pottery: Two families of potters were interviewed. In the case of one family there is no impact on its occupation because the family lives in a village 'Tilawani' which is remote from the factory. But the other family has reported moderate impact on its occupation. According to this family, the demand for pottery increases during the harvesting season due to the immigrants (harvesting labourers) in this region.

(6) Bicycle Shop: The family running a bicycle shop has reported an impressive impact on its business. The family lives in a village viz. Shirasgaon which is remote from the factory. According to the family, the mobility of people has increased after the establishment of the sugar factory and therefore the demand for various means of transport has increased. Bicycle being the most handy means of transportation in rural area, its use has increased. Hence the business of bicycle shop has grown impressively.

(7) Cobbler: Seven families of cobblers were surveyed. Of these, one family has reported impressive impact and two families have reported moderate impact on their business. Out of the remaining, two have reported no impact, while two have reported an adverse impact from the establishment of the

sugar factory. It is observed that the families who have reported impressive and moderate impact on their business are mostly engaged in the production of fashionable chappals. The families who have reported adverse impact belong mainly to that class which produce traditional agricultural implements such as Mhot (leather bag for drawing water from the well), neck-trap, etc. The use of such implements is disappearing and modern implements are coming into vogue. The farmers can afford these modern implements because of increased incomes. In the same way, because of the increased income of the people in the region many of them do not use old fashioned chappals and shoes. Now-a-days, people go to the local cobblers only for repairs of chappals and shoes. The primary function of the cobbler of making new shoes and agricultural accessories has decreased. On the contrary, their work of repairs to footwears has increased. Thus the traditional occupation of some cobblers has been decaying. To meet their family expenditure, some of the members of cobbler families have been working as manual labourers.

(8) Rope-makers: Two families of rope-makers were interviewed and both have reported no impact on their business. Even after the establishment of the sugar factory, these families could not get additional business. The nature of factory production and agricultural production required for the sugar factory needs very small quantity of ropes,

because of the modern system of mechanised packaging, pressing and bunding. The sugar factory purchases its required quantity of rope from outside suppliers.

(9) Tailoring: It was expected that the immigration of harvesting labourers would have increased the traditional business of the tailors in the region. But the families of local tailors have reported that the harvesting labourers generally bring some tailors from their native villages during their stay in this region. So the local tailors do not get additional business from the harvesting labourers. This is a special characteristic of the migratory labourers.

(10) Hawker: One hawker family which was interviewed has reported moderate impact on its business. The business of the hawker usually increased with the arrival and during the stay of the harvesting labourers during the crushing season.

(11) Masonry: The family of the mason has reported only a moderate impact on its business. According to the family, with the increased income of farmers, some of them have been constructing new buildings and repairing old houses. Similarly, some of them have started constructing farm houses, cattle managers, new wells and syphons for watering fields. So the business of the masons has increased to some extent.

(12) Smithy: Major part of the transport of sugarcane from farms to the sugar factory is being done by bullock carts. So it is expected that the business of the iron-

smiths might have increased. But in fact there is no increase in this business. The reason stated by the local iron smith is that the harvesting labourers bring with them some blacksmiths from their native places. So the local iron smiths do not get any additional work. This immigration of outside iron-smiths is similar to the immigration of tailors.

(13) Saloon: Four families of barbers were interviewed. Two of them have reported moderate impact. They are residents of villages which are nearer to the factory. The remaining two families of barbers belong to villages which are away from the factory. The barber families which have reported zero impact of the factory on their business have given the same reason which is already explained in the case of the families of tailors and blacksmiths. The harvesting labourers bring with them some barbers also from their native villages. Naturally, the local barbers do not get additional business which would emerge due to the immigration of harvesting labourers in the region during the season.

(14) Bangleman: There is no impact on the business of the bangleman surveyed. According to this bangleman, the proportion of women among the harvesting labourers is considerably small and hence the demand for bangles does not increase significantly even with the arrival of the harvesting labourers.

(15) Bhikshuk: Income of the Bhikshuks mostly depends



upon the offers (Dakshina) given by the local people. Therefore, it was considered that proportion of the offers to the Bhikshuk might have increased with the increase in income of the people. But it is found that income from Bhikshuki has remained almost constant.

(16) Other Services: The people working as teachers, porters, drivers, gangmen, peons, belong to the category of other services. It was presumed that families of these people might have started some additional business such as dairy, poultry, trade, etc. It was also presumed that their wages might have increased with the increased demand for sugar factory workers. But it is found that none of these families has started subsidiary business nor could they get higher wages as a result of the increased demand for factory labourers.

7.3 Thus from Table 7.2 we can conclude that business of the majority of non-agriculturists have flourished after the establishment of the sugar factory. The families of the non-agriculturists engaged in business such as transport, hotel, grocery, bicycle, carpentry have benefitted more. The families of the masons, hawkers, cobblers have benefitted to a smaller extent. There is no impact on the businesses of the families of the blacksmiths, tailors, banglemen, bhikshuks, ropemakers, etc. On the contrary, there is some adverse effect on the businesses of some families of carpenters and cobblers. As the income from these occupations

is not adequate, they have been working as manual labourers to maintain their standard of living.

Secondly, we can also say that the non-agriculturists of the neighbouring villages of the factory have benefitted more than the non-agriculturists living in villages far away from the factory.

#### 7.4 Family income of the non-agriculturists

The establishment of the factory has provided an opportunity for non-agriculturists to start some new occupations as additional sources of income.

The families in the businesses like transport, hotel, grocery, carpentry and bicycle shop have started some additional occupations like dairy-farming, flour mills, agriculture, textile shop, etc. Similarly members of some other families secured jobs in the sugar factory. These additional sources of income have added to the gross income of the non-agriculturists.

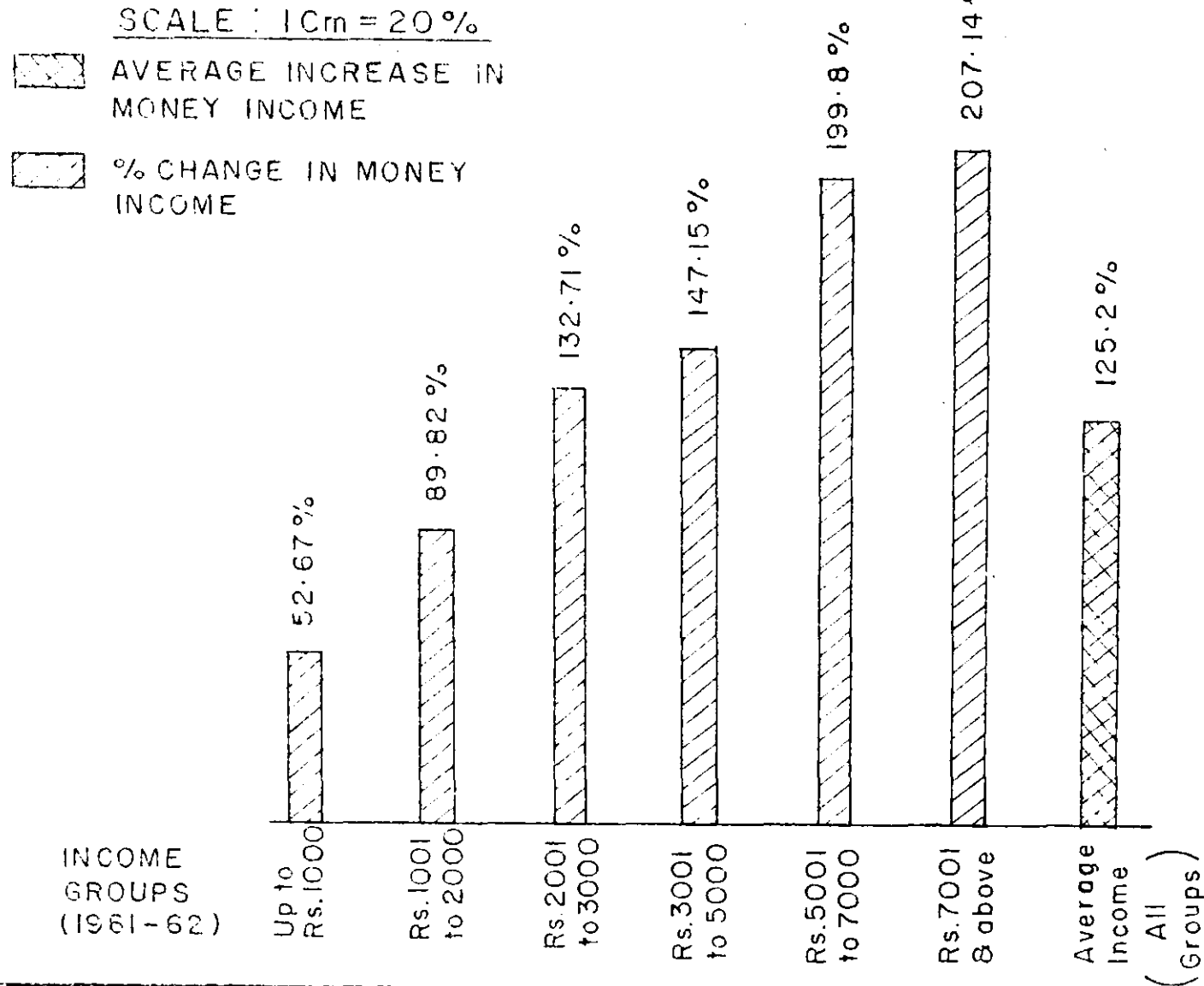
Table 7.3 gives information regarding annual average income per family belonging to different occupations both for the years 1961-62 and 1975-76. While finding the change in the average annual income per family working in the different occupations, the increase in income over the period as reported by the individual is deducted from their annual average income of 1975-76. Thus their income of the base year is obtained. The income of the families in the different occupations is summed up at both the periods and divided by

**Table 7.3.** Annual Average income per family before (1961-62) and after (1975-76) the establishment of the factory

Type of business	No. of families in the business	Annual Average income per family before the establishment of the sugar factory (1961-62)	Annual Average income per family after the establishment of the sugar factory (1975-76)	Change in the per family income over the period
1. Transport	2	6205.68	17500.00	+ 182.00
2. Hotel	2	3066.91	8250.00	+ 169.00
3. Grocery	11	2830.00	7500.00	+ 165.00
4. Carpentry	7	2112.46	3971.43	+ 88.00
5. Pottery	2	1348.68	2050.00	+ 52.00
6. Bicycle-shop	1	2160.00	4750.00	+ 120.00
7. Cobbler	7	1400.00	2442.85	+ 74.49
8. Rope-making	2	937.50	2050.00	+ 118.67
9. Tailoring	2	1400.00	2350.00	+ 67.86
10. Hawker	1	1063.83	1600.00	+ 50.00
11. Masonry	1	2000.00	3000.00	+ 50.00
12. Smithy	1	937.05	1500.00	+ 60.00
13. Saloon	4	671.78	1095.00	+ 63.00
14. Bangleman	1	535.00	750.00	+ 40.00
15. Bhikshuk	1	1675.00	3350.00	+ 100.00
16. Other Services	6	1722.00	3450.00	+ 100.34
All families	51	2020.10	4545.69	+ 125.20

the number of families in each business group. Thus it gave the average annual income per family at both the period i.e. 1961-62, and 1975-76. For the group as a whole, the average annual income per family of the non-agriculturists in 1961-62 was Rs. 2020-10 which increased to Rs. 4545.69 in 1975-76. This is an increase of 125.2 per cent over the period. It is also seen that the increase in annual average income per family is significantly large in the case of families engaged in transport, hotel, grocery, etc. In their case the increase is more than 150.00 per cent. It is evident that these are the occupations which have greater linkage with modern factory production. Secondly, in the case of occupations like running bicycle-shop, rope-making, and some other services, the increase in annual average income per family is 100.00 per cent or slightly more than that. The families of rope-makers, ironsmiths and tailors reported that they have started some subsidiary occupations like dairy, poultry and manual labour from which they get additional income to support their families. Similarly, one member of the Bhikshuk family has got service in the sugar factory and hence the Bhikshuk family also gets additional income. Here again it is evident that there is no impact on Bhikshuk's service as such. On the contrary, the increase in the annual average income per family in the case of the remaining occupations is less than 100.00 per cent most probably because these are the occupations which

# PERCENTAGE CHANGE IN THE MONEY INCOME OF NON-AGRICULTURISTS AFTER THE ESTABLISHMENT OF THE SUGAR FACTORY (1975-76) (BAR DIAGRAM-III)



become gradually obsolete because of the different nature of needs of a modern factory area.

7.5 In order to understand the impact of the factory on the level of money income of the non-agriculturists over the period, they are divided into different income groups according to their present income. The change in money incomes and real income is presented in Table 7.4.

The increase in money income of the families in various income groups is shown in the bar diagram III.

While finding the change in the level of money income, and real income, the families of non-agriculturists are classified into various income groups as shown in Table 7.4 on the basis of their income in the year 1961-62.

The Table clearly points out that, on the whole, money income of all the families taken together increased by 125.20 per cent during the period. However, it is important to note that this increase for different income groups warrants an important observation. It is clearly seen that families belonging to high income groups have benefitted more than the families belonging to low income brackets. In fact it is evident that the percentage increase in money income has shown a progressive increase with higher and higher income group. In other words, it seems that the overall impact of the establishment of the sugar factory on the economic conditions of the non-agriculturists has worked in such a manner as would worsen the existing (economic) inequalities

**Table 7.4.** Change in the money income and real income of the non-agriculturists in the different income groups. (Number of families 51)

* Income group	No. of families in the group	Point of time	Average income per annum	Deflator (Price index No.)	Deflated income and the change in real income
Upto Rs.1000	8 (15.69)	1961-62	753.25	100.00	753.25
		1975-76	1150.00	296	388.51
		% Change	52.67		-48.42
Rs. 1001 to Rs. 2000	19 (37.26)	1961-62	1368.45	100.00	1368.45
		1975-76	2597.55	296	877.55
		% Change	89.82		-35.87
Rs. 2001 to Rs. 3000	17 (33.33)	1961-62	2430.21	100.00	2430.21
		1975-76	5655.36	296	1910.59
		% Change	132.71		-21.82
Rs. 3001 to Rs. 5000	4 ( 7.84)	1961-62	3066.91	100	3066.91
		1975-76	7580.00	296	2560.81
		% change	147.15		- 16.50
Rs. 5001 to Rs. 7000	2 ( 3.92)	1961-62	5209.50	100	5209.50
		1975-76	15580.60	296	5264.39
		% change	199.08		+ 1.05
Rs. 7001 and Rs. above	1 ( 1.96)	1961-62	7010.00	100	7010.00
		1975-76	21500.00	296	7263.51
		% Change	207.14		+ 3.76
All income groups	51 (100.00)	1961-62	2020.10	100	2020.10
		1975-76	4545.69	296	1535.70
		% change	125.20		- 23.98

\* N.B. The income groups are classified on the basis of the income of 1961-62  
(Bracketed figures show percentages to the number of families i.e. 51)

in the rural area around the sugar factory.

### 7.7 Change in the real income of the non-agriculturists

We have seen that money income of the non-agriculturists as a group has increased by 125.20 per cent over the period of 15 years. During this period the price level has increased by 196.00 per cent. The change in the price level is obtained with the help of consumers' index number given in the District Statistical Abstract of Ahmednagar district for the year 1975-76. In the year 1960 the consumers' index number was 100. In 1975 it was 296.<sup>1</sup> The increased money income is deflated by the changed price level, and the change in real income of the non-agriculturists has declined by 23.98 per cent at the aggregate level.

We can also find out that the real income of the non-agriculturists belonging to very high income groups (Nos. 5 and 6 of Table 7.4) has increased by 1.05 per cent and 3.76 per cent respectively. On the other hand, the real income of the non-agriculturists belonging to the lowest income group i.e. having annual income upto Rs. 1000 has decreased by 48.42 per cent. It is true that some business started flourishing and the opportunities for the new subsidiary occupations come into existence due to establishment of sugar factory. But it is also true that the non-agriculturists from the low income group could not have been in a position to take benefit of these opportunities owing to the lack of

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<sup>1</sup> District Statistical Abstract of Ahmednagar District, 1975-76, p. 174.



capital. This may be one of the reasons of the disparity cited above. Hence the real income of the non-agriculturists from the low income bracket could not increase; in fact it declined. On the contrary, the sources of income and income from every source of the non-agriculturists from the higher income-groups increased to a great extent. Thus the real income of the non-agriculturists from higher income groups has increased.

At the current price level (in 1975-76), a family having five members has to spend minimum Rs. 200 per month for maintenance. Though the non-agriculturists live in villages like the agricultural labourers, their standard of living is higher as compared to that of the agricultural labourers. So they require higher income as compared to the agricultural labour. Hence the families with income below Rs. 2001 per annum can be included in the group below subsistence level. The families having annual income in the range between Rs. 2001 and Rs. 3000 can be included in the group at the subsistence level and the families having annual income above Rs. 3001 can be included in the income group above subsistence level.

From Table 7.5 it is clear that the 17.65 per cent of the families of non-agriculturists are below the subsistence level and 35.29 per cent of the families are on the subsistence level and 47.06 per cent of the families are above the subsistence level. As compared to agricultural

labourers the economic conditions of the non-agriculturists are slightly better.

Table 7.5. Classification of the families of non-agriculturists according to their income in 1975-76.

Income groups Rs.	No. of families in the group	Remarks
1. Upto 2000	9(17.65)	Below the subsistence level
2. 2001 to 3000	18(35.29)	At the subsistence level
3. 3001 to 5000	7(13.72)	47.06 per cent of the families are above the subsistence level
4. 5001 to 10000	10(19.60)	
5. 10001 to 15000	4(7.84)	"
6. 15001 and above	3(5.90)	"
All Income Groups	51(100.00)	

(Bracketed figures indicate the percentages of the unbracketed figures to the total number of families i.e.51)

#### 7.8 Standard of living of the non-agriculturists

Generally, the income level of people gets reflected in the type of housing used, household equipments, and thus in their standard of living. The information about the housing conditions of non-agriculturists after the establish-

ment of the sugar factory is presented in Table 7.6.

7.9 From the table it is seen that the majority of the non-agriculturists are living in medium type and dilapidated houses. 45.10 per cent of the families of non-agriculturists are living in medium-condition houses and 19.62 per cent of them are living in dilapidated houses. Proportion of the families of non-agriculturists living in good houses is 17.64 per cent. It is observed that most of the families of non-agriculturists living in good condition houses have built the houses only after the establishment of the sugar factory. It is also observed that some families of non-agriculturists from the second and third income groups also owned good-condition and medium type of houses at present, but these houses were built 20 to 25 years ago when barter system was flourishing and these balutedars were getting adequate real income from their occupations. Table 7.5 also points out that among the non-agriculturists the proportion of the non-agriculturists living in good houses is greater from the high income group. If we see Table 7.3 we can find that the families belonging to higher income groups are in the occupations like transport, hotel, and grocery. It has been already explained that income of the families running hotels or engaged in a transport business and in grocery has increased much more as compared to the families in other occupations after the establishment of the sugar factory. A higher degree of increase in income, enabled them to build

**Table 7.6.** Classification of the families of non-agriculturists by housing conditions and income groups. (Total: 51 families)

Income groups (Year 1975-76)	Families living in good con- ditioned houses	Families living in medium condi- tioned houses	Families living in dilapi- dated houses	Families living in hired houses	Total No. of fami- lies of non-agri.
Upto Rs. 2000	-	4	3	2	9
Rs.2001 to Rs. 3000	2	10	5	1	18
Rs. 3001 to Rs. 5000	1	1	1	4	7
Rs. 5001 to Rs. 10000	3	5	-	2	10
Above Rs.10001	3	3	1	-	7
<b>Total</b>	<b>9</b>	<b>23</b>	<b>10</b>	<b>9</b>	<b>51</b>
Percentage to the total No. of fami- lies	17.64	45.10	19.62	17.64	100.00

new houses. Thus we conclude that the non-agriculturists from the higher income-groups have better housing conditions while the housing conditions of the non-agriculturists from the lower income-group are not satisfactory.

#### 7.10 Household Equipments

The variety of household equipments in use also throws some light on the standard of living of the people in general. It is to be expected that the standard of living of people would rise with the increase in their income. Data regarding the household equipments of the families of non-agriculturists is presented in Table 7.7.

From the Table it is clear that the families belonging to low income-group i.e. upto Rs. 2000 could not purchase any household equipment even after the establishment of the sugar factory. Previously they did not own any of the household equipment listed in Table 7.7 (columns 1 to 12). The situation at present is almost unchanged. It means there has been no improvement in the standard of living of the families belonging to low income-group. Families of non-agriculturists belonging to the income-groups in the range between Rs. 2001 and Rs. 5000 could purchase some household equipments, after the establishment of the factory. But the change in the standard of living of these families of non-agriculturists is not significant. The families belonging to the higher income-group i.e. above Rs. 5001, could purchase household equipments to a greater extent and of a larger

**Table 7.7.** Household equipment of the families of non-agriculturists before (1962-63) and after (1975-76) the establishment of the sugar factory.

(No. of families having the household equipments out of the total of 51).

Income Group Rs.	Before and after the establishment of the sugar factory	Table	Chair	Fan	Cot	Heater/ Gas	Refri- gerator	Radio	Almirah	Bicycle	Motor cycle	Car	Other
Upto 2000	Before	-	-	-	-	-	-	-	-	-	-	-	-
	After	-	-	-	-	-	-	-	-	-	-	-	-
2001-3000	Before	-	-	-	-	-	-	1	-	2	-	-	-
	After	-	3	-	2	-	-	3	-	9	-	-	-
3001-5000	Before	-	-	-	1	-	-	1	-	2	-	-	-
	After	-	2	-	2	-	-	3	-	3	-	-	-
5001-10000	Before	1	1	-	5	-	-	3	1	3	-	1	-
	After	3	12	4	12	1	-	7	3	8	1	-	-
Above 10000	Before	1	4	2	2	-	-	1	1	-	-	-	-
	After	4	8	3	5	-	-	4	1	4	-	1	1
Total	Before	2	5	2	8	-	-	7	2	5	-	1	-
	After	7	25	7	21	1	-	17	4	24	1	1	2
		(3.92)	(9.80)	(3.92)	(15.60)			(13.72)	(3.92)	(9.80)		(1.96)	
		(13.72)	(18.12)	(13.72)	(40.18)	(1.96)		(33.33)	(7.34)	(47.06)	(1.96)	(1.96)	(3.92)

(Figures in parenthesis indicate percentages to the total of 51 families of the non-agriculturists)

variety. This shows a positive improvement in their standard of living.

Thus from Table 7.7 we can conclude that the standard of living of the families belonging to higher income brackets i.e. the families in the business like transport, hotel, and grocery has gone up significantly after the establishment of the factory.

7.11 We have seen that the income of non-agriculturists has increased after the establishment of sugar factory. It was therefore thought that the expenditure pattern of the non-agriculturists might have changed. Information collected regarding the utilization of income by different income-groups for various purposes except for the daily household expenditure is shown in Table 7.8. The non-investors shown in column 6 of Table 7.8 cover the families of non-agriculturists who have used their income only for household purposes like cloth, food, and other daily household expenditure.

It is clear from the table that the families of non-agriculturists from the low income bracket could not invest. But some families of non-agriculturists from the higher income brackets have invested in different items listed in the table.

Secondly, the table points out that out of the total families of non-agriculturists, nearly 24.70 per cent could utilize a part of their income for various purposes other

**Table 7.8.** Classification of the families of non-agriculturists according to utilization of income for various purposes.

Income groups	Number of families						
	Investment in the traditional and new business	Reserve for new business	House construction	Deposited in Bank	No. of families who could invest	No. of families who could not invest	Total No. of families in the income group
1. Upto Rs. 2000	-	-	-	-	-	9	9
2. Rs.2001 to Rs.300	-	-	-	-	-	18	18
3. Rs.3001 to Rs. 5000	1	1	1	1	2	5	7
4. Rs. 5001 to Rs.10000	6	3	3	2	7	3	10
5. Above Rs.10000	3	3	2	1	3	4	7
<b>Total families</b>	<b>10</b>	<b>7</b>	<b>6</b>	<b>4</b>	<b>12</b>	<b>39</b>	<b>51</b>
<b>Percentage to total No. of families</b>	<b>19.62</b>	<b>13.72</b>	<b>11.77</b>	<b>7.84</b>	<b>24.70</b>	<b>75.30</b>	<b>100.00</b>



than household expenditure. It means that their income is more than their daily household expenditure. On the contrary, income of 75.30 per cent of the families is so low that they cannot use it for investment purposes. The table shows that the families belonging to low income groups upto Rs. 3000 could not invest even in a single item. Some families from the income group between Rs. 3001 to Rs. 5000 could invest for various purposes. The extent of investment in various items is greater in the case of the families belonging to the higher income groups. The items in which the income is invested are described below.

(1) Investment in traditional and new business:

19.62 per cent of the families have invested for this purpose. The business in which they have invested are transport, hotel, grocery, carpentary, bicycle shop, flour mills and textile shops, etc.

(2) Reserve for new business: Nearly 14.00 per cent of the families have reported that they have reserved some amount out of their total income for investments in new business like agriculture, bicycle shops, hotel, dairy, etc.

(3) House Construction: 11.77 per cent of the families have reported that they have invested some amount in the construction of houses. Out of these families 1.96 per cent have constructed houses in the city and others, in their native villages.

(4) Bank Deposits: It is found that only 7.84 per cent

of the families have deposited a part of their income in banks for domestic purposes like marriages and education of children, etc.

From the expenditure pattern discussed above it seems that many of the families have preferred to invest in their traditional occupations. Secondly, even though the income of certain families increased up to Rs. 3000, they could not make any investment, because most of their increased income went for increased consumption. So Rs. 3000 seems to be the rough dividing line between decisions regarding diversion of additional income to consumption or investment.

#### 7.12 Benefits of the sugar factory received by the non-agriculturists

As is subsequently shown in Chapter VIII, the sugar factory has geared up the economic development of the rural area by launching various schemes like loans through banks, establishment of educational institutions, hospitals, dairies, etc. The factory has also constructed roads and taken lead in the electrification of the region. Thus through various schemes the non-agriculturists have also benefitted. Different benefits received by the families of non-agriculturists are shown in Table 7.9.

The table points out that the benefit of increased transport facilities is received by all the facilities. The second important benefit which has been received is the increase in the business due to the establishment of the

Table 7.9. Benefits of the sugar factory received by the families in different businesses

(No. of families. Total No.: 51)

Type of non-agriculturist	Increase in transport	Availability of loan in time	Increase in business tendency	Availability of job	Increase in business	Educational facility	Medical aid
1. Transport	2	1	2	-	2	2	2
2. Hotel	2	1	1	-	2	1	-
3. Grocer	11	4	9	-	10	9	1
4. Carpenter	7	1	4	2	4	4	1
5. Bicycle shop	1	1	1	1	1	1	1
6. Potter	2	-	-	-	1	-	-
7. Rope-maker	2	-	-	1	-	-	-
8. Cobbler	7	-	2	1	3	3	1
9. Tailor	2	-	-	-	-	-	-
10. Hawker	1	-	-	-	1	-	-
11. Mason	1	-	-	-	1	-	-
12. Iron-smith	1	-	-	-	-	1	-
13. Barber	4	-	-	-	2	1	-
14. Bangleman	1	-	-	-	-	-	-
15. Bhikshuk	1	-	-	-	-	-	-
16. Other services	6	-	-	-	-	1	-
Total	51	8	19	4	27	23	6
Percentage	100.00	15.60	37.26	7.84	52.94	45.10	11.76

factory. Apart from this, the benefit of the easy availability of loans due to the establishment of banks in the area of operation of the factory is also reported by 15.60 per cent of the families. The families from the businesses of transport, hotel, grocery, carpentry and bicycle shops have particularly received this benefit. 45.10 per cent of the families have reported that their children could get advantage of new or better educational facilities. The establishment of the hospital on the factory site has benefitted 11.76 per cent of the families.

Thus, from Table 7.9 we can conclude that the families in the businesses like transport, hotel, grocery, carpentry, bicycle shops have received more benefits from the sugar factory than others. If we see Table 7.3, it is evident that all these families belong to higher income brackets. Thus the families from the higher income brackets have benefitted more as compared to the families from lower income bracket.

In brief, it is found that after the establishment of the sugar factory, business of all the non-agriculturists started flourishing. Their income has increased leading to a rise in the standard of living. But the important thing is that the families from higher income groups have benefitted more than the families from lower income groups. The rich businessmen could take greater advantage of the situation created by the establishment of the sugar factory. The others could not succeed to the same extent, most probably due to lack of capital.

## CHAPTER VIII

### SPREAD EFFECTS OF THE SUGAR FACTORY AND OVERALL ECONOMIC CHANGE IN THE RURAL AREA

8.1 The establishment of a large, modern factory may directly and indirectly assist the development of the region in which the factory is located. Co-operative sugar factories, take a lead in the economic development of the region. The establishment of the Sanjivani Co-operative Sugar Factory resulted, directly and indirectly, in the emergence of many developments in this region, which may be described as spread effects of the sugar factory. Information on benefits which the factory claims to have provided to shareholders and other farmers in the region has been collected during the survey. This is discussed below.

#### 8.2 KOSANG Co-operative Distillery

It was thought that the production of only sugar from sugarcane would not be economical in future. In order to reduce the cost of production of sugar it was decided to enter into the production of a byproduct viz. alcohol from molasses. This thought was further strengthened by the fact that sugar factories in the region were facing the problem of storage and disposal of molasses. Many a time the sugar factories either had to burn the molasses or distribute a part of it among the shareholders as manure. In 1969, the

managements of the Sanjivani Co-operative Sugar Factory, Kopargaon Co-operative Sugar Factory (Kolapewadi), the Girna Cooperative Sugar Factory and the Niphad Co-operative Sugar Factory took a decision to establish a distillery on cooperative basis. But it was found that the establishment of the proposed distillery of the four sugar factories would not be economical mainly because Niphad and Girna Co-operative Sugar Factories were located at inconveniently long distances. Alternatively in 1971 a new proposal was prepared in which Ganesh Co-operative Sugar Factory was to replace Niphad and Girana Cooperative sugar factories because<sup>1</sup> the Ganesh Co-operative Sugar Factory is located nearer to the Sanjivani and the Kopargaon Cooperative Sugar Factory in the same taluka. It was thought that the participation of the Ganesh Cooperative Sugar Factory would reduce the cost of transporting molasses.

In the beginning it was decided to establish the distillery at Sahajanandanagar. But due to certain non-economic reasons, it was established at Kolapewadi in the premises of the Kopargaon Cooperative Sugar Factory. The construction of the distillery was started in 1973-74 and was completed by the end of 1976. The distillery started production of alcohol in January 1977.

8.3 The authorised share-capital of the alcohol factory is Rs. 45,00,000. Out of this, subscribed and paid-up capital is Rs. 20,00,000. Out of the total share capital,

the Sanjivani Cooperative Sugar Factory has invested to the tune of Rs. 10,00,000, and the Kopergaon Sugar Factory and the Ganesh Sugar Factory have invested Rs. 500,000 each. The Maharashtra State Finance Corporation has given a loan of Rs. 30,00,000 in 1971-72.<sup>2</sup> At present, the distillery produces only spirit. However it has applied for a licence to produce country liquor also. The production capacity of the distillery is of 22,000 litres per day. This distillery has provided employment to 70 workers and it is likely to provide more employment after its expansion.<sup>3</sup>

Majority of the workers of the distillery are from the area of operation of the Sanjivani Cooperative Sugar Factory.

8.4 Dairy Development: In order to provide subsidiary occupation to the farmers,<sup>a</sup> dairy development scheme was undertaken by the sugar factory in 1970.<sup>4</sup> It not only adds to the income of the farmers, but also provides dung manure for the farms of the agriculturists. For the dairy development scheme, the Sanjivani Co-operative Sugar Factory and Kopergaon Co-operative Sugar Factory have invested Rs. 1 lakh each in the share capital of the Godavari Khore Milk Producers' Sangh, Sahajanandanagar. The milk producing shareholders own share capital worth Rs. 3 lakhs. The Maharashtra State Cooperative Bank has advanced a loan of Rs. 11 lakhs on the guarantee of the management of the Sanjivani factory for the scheme.<sup>5</sup> In the beginning, five milk collection centres were established at Dhamori,

Sahajanandanagar, Savalviheer, Oturkarwadi and Manjoor. These centres were then converted into dairies on a co-operative basis. The Godavari Khore Milk Producers' Co-operative Sangh, Sahajanandanagar collects milk from all the milk centres in the area of Sanjivani Sugar Factory and sends it to Ahmednagar, Pune, Nasik and Bombay. The sugar factory gave in the initial period four trucks to the Milk Producers' Sangh for collection of milk from the Centres and to send it to the urban area. The Sangh established a chilling plant in 1976 for pasteurising the collected milk. The Sangh has also purchased six trucks for milk collection and two milk tankers to provide milk to the Government Milk Supply Scheme. At present the Sangh is providing milk to Pune under the Scheme.<sup>6</sup>

Table 8.1 gives us an idea of the working of milk collection centres under the Godavari Khore Milk Producers' Sangh, Sahajanandnagar.

8.5 From Table 8.1 we can see the continuous progress of the dairy development programme. Only in the year 1972-73 and in 1973-74 the average price of milk was low. The quantity of milk collected in 1973-74 was less than before because of the famine period. In 1975-76, the fall in milk collection was due to the diversion of supply of milk to the Pravara Milk Producers' Society, Pravaranagar. During the famine period, the Sangh sold milk at a low price for the benefit of the society and hence price paid to the



farmers by the Sangh has been generally on par with the prevailing market price. Thus we can conclude that the dairy development scheme has recorded a remarkable progress and it has provided a paying subsidiary occupation to more than 1200 farmers over the period in the area of operation of the Sanjivani Sugar factory.

The Sangh has decided to start production of chocolates, biscuits and milk powder, etc. Besides, the Sangh is going to start distribution of standard milk in Kopergaon city, in the near future.

**Table 8.1.** Quantity of milk collected, price of milk actually paid and number of milk collection centres working under the Sangh

Year	No. of milk collection centres	Average price paid per litre	Milk collected per year in litres
1969-70	5	1.60	3,65,000 approx.
1970-71	9	1.60	4,47,500 approx.
1971-72	15	1.70	7,30,000 approx.
1972-73	15	1.47	7,67,775
1973-74	16	1.47	4,55,623
1974-75	17	2.00	8,92,696
1975-76	19	2.10	8,11,758

(Source: The Manager of Godavari Khore Milk Producers' Cooperative Sangh Ltd., Sahajanandnagar).

### 8.6 Artificial Insemination of Cows

It has already been proved by the scientists that the rearing of she-buffaloes for milk is not economical and their dry period is longer and their requirements of fodder are more.<sup>7</sup> But cross-bred cows are more economical to the farmers. The cows give more milk than she-buffaloes. Their dry period is shorter and their fodder requirement is less as compared to that of she-buffaloes. Therefore, the Sanjivani Sugar Factory started the scheme of artificial insemination with the help of the Bharatiya Agro-Industries Foundation at Urali-Kanchan (District Pune) in 1970. The sugar factory has been importing semen of approved stud bulls of Holstein, Frishon and Jersey varieties from abroad for artificial insemination.<sup>8</sup> Apart from this, in 1971, the factory appointed veterinary doctors and other required staff for artificial insemination and for the care of pregnant and milch cows. 1829 cows were artificially inseminated and they have produced 244 heifers and 261 males by the end of 1976. Of the cross-bred cows, some cows give as much as 25 litres of milk per diem and some other cows an average of 16 to 18 litres of milk per diem. In 1975-76 the average milk collection per diem was 2446 litres whereas it was only 1500 litres in 1969-70. The sugar factory expects to collect on the average 10,000 litres of milk per diem in the near future.<sup>9</sup>

### 8.7 Development of Transport

Before the establishment of the sugar factory there were some Zilla Parishad roads and a part of a highway traversed through the area of operation of the factory.<sup>10</sup> The link roads were constructed by the sugar factory for quick transport of sugarcane from the farms to the factory. During the crushing season it is very essential to keep a steady flow of fresh and adequate sugarcane of full maturity from the farm to the sugar factory to enable it to achieve maximum efficiency in its working and better sugar recovery.

8.8 The roads constructed by the sugar factory and the expenditure incurred for construction of roads are shown in Table 8.2. From the table it is clear that the factory has constructed roads of the length of 299.2 miles. Out of these 37 miles are pucca roads. In the beginning the factory was not in a position to spend on road construction because it was the period of expansion of the factory, and the factory was facing financial difficulties. During the period 1963-64 to 1975-76 the factory spent Rs. 17,54,657-55 on the construction and repairs of the link roads. The Government of Maharashtra gave some grants-in-aid at different periods. Table 8.3 indicates utilization of these grants. It is seen from the table that the State Government has given a total grant of Rs. 7,97,599.50 for the construction of pucca roads. This amount of grants was spent during the period 1973-74 to 1974-75.

**Table 8.2.** Expenditure on the construction of roads and their repairs by the Sanjiwani Cooperative Sugar Factory, Ltd., in its area of operation during 1961-66 to 1975-76.

Sr. No.	Name of the Group of villages	Total distance of the roads in the group (mileage)	Yearwise expenditure incurred							Total (Rs.)			
			1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68		1968-69	1969-70	
1	Dahegaon-Bolaka	22.4											
2	Karanji	40.0											
3	Bramhangaon	78.2											
4	Seur-Kumbhari	35.3											
5	Devde Korhale	27.5	--	--									
6	Kumbhari	15.4	Nil	Nil									
7	Velapur	37.00	--	--									
8	Wakad	42.00	--	--									
	<b>Total</b>	<b>299.2</b>	<b>Nil</b>	<b>Nil</b>	<b>7006.03</b>	<b>Nil</b>	<b>4540.00</b>	<b>53229.00</b>	<b>98465.00</b>	<b>63979.27</b>	<b>163473.15</b>		

Sr. No.	Name of the Group of villages	Total distance of the roads in the group (mileage)	Yearwise expenditure incurred					Total (Rs.)	
			1970-71	1971-72	1972-73	1973-74	1974-75		1975-76
1	Dahegaon Bolaka	22.4	17,498.06	16,322.07	5,222.53	11,801.12	21,817.33	29,796.29	1,02,456.40
2	Karanji	40.0	50,362.12	51,448.83	1,730.50	31,772.33	29,793.52	63,108.59	2,28,215.89
3	Bramhangaon	78.2	37,549.68	89,997.61	44,108.25	37,609.54	1,01,680.71	1,45,154.47	4,56,100.26
4	Jeur-Kumbhari	35.3	8,227.01	24,538.44	8,312.84	25,410.97	70,019.48	64,108.95	2,01,217.69
5	Devde Korhale	27.5	2,682.69	13,153.55	834.80	13,259.25	13,340.60	3,046.23	46,317.12
6	Kumbhari	15.4	14,739.03	4,339.75	7,356.23	700.00	2,950.00	6,172.25	36,257.26
7	Velapur	37.0	54,400.78	27,689.07	19,771.37	11,959.14	16,762.29	78,536.24	2,09,118.89
8	Wakad	42.0	9,479.84	27,397.46	10,617.70	4,279.47	11,908.66	20,598.46	84,281.59
	<b>Total</b>	<b>299.2</b>	<b>1,94,939.21</b>	<b>2,54,886.78</b>	<b>97,954.22</b>	<b>1,36,791.82</b>	<b>2,68,872.79</b>	<b>4,10,521.48</b>	<b>* 13,63,965.10</b> <b>** +399,692.45</b>

\* It is the total of the year 1970-71 to 1975-76.  
 \*\* This is the total of the years 1961-62 to 1969-70.

Source: Manager, the Sanjivani Cooperative Sugar Factory, Sahajandanagar.

Grand Total 17,54,657.55

**Table 8.3.** Utilization of Grants-in-aid for the construction of roads by the Sanjivani Cooperative Sugar Factory during 1972-73 to 1974-75

Year	Name of the group	Name of the road repaired or constructed	Mileage	Expenditure incurred in Rs. on		Total expenditure	Grant-in-aid	Extra expenditure incurred by the factory
				Wages	Material			
1	2	3	4	5	6	7	8	9
1972-73	1. Karanji	Pawar Girani N.M. Road	2.5	78,914.05	31,700.00	1,10,614.05		
	2. Bramhangaon	Old Kopargaon Takali Road	3.00	33,987.95	11,500.00	45,487.95		
	3. Bramhangaon	Old Samvatsar Takali Road	3.00	21,954.00		21,954.00		
	<b>Total</b>		<b>8.5</b>	<b>1,34,856.00</b>	<b>43,200.00</b>	<b>1,78,056.00</b>	<b>1,78,056.00</b>	
1973-74	1. Karanji	Pawar Girani N.M. Road	2.5	42,203.98	33,704.84	1,75,908.82		
	2. Bramhangaon	Old Kopargaon-Takali Road	3.00	N.A.	N.A.	32,217.65	98,938.00	1,09,288.27
	<b>Total</b>		<b>5.5</b>			<b>2,08,126.47</b>		
1974-75	1. Bramhangaon	Dhamon, Takali and Yesgaon Road	8.00	N.A.	N.A.	5,20,605.50		
	<b>Total</b>		<b>8.00</b>			<b>5,20,605.50</b>	<b>5,20,605.50</b>	<b>Nil</b>
Total expenditure incurred during 1972-73 to 1974-75 on the repairs and construction of roads						9,06,787.77 (100.00)	7,97,599.50 (87.06)	1,09,188.27 (12.04)

\* It does not include regular expenditure of the factory or roads.

Source: Manager, the Sanjivani Cooperative Sugar Factory.

Figures in parenthesis indicate percentages to the total in column 7.

8.9 In addition to these grants the factory spent Rs. 1,09,188.27 for road construction. By spending total amount of Rs. 9,06,787.27 the pucca roads of 8.5 miles were constructed. Thus the State Government and the sugar factory together spent Rs. 26,61,445.32 (grant total of the Tables 8.2 and 8.3) on the construction and repairs of roads. The construction of these roads has benefitted nearly 45 villages out of 87 in the area of operation of the factory.

8.10 Once the roads were constructed, the sugar factory motivated some sugarcane cultivators to purchase trucks and tractors. The factory has helped them to avail of finance through nationalized banks. By the end of 1976, nearly 70 shareholders of the factory owned trucks and 40 shareholders owned tractors.<sup>11</sup> It has already been mentioned that the Godavari Khore Milk Producers' Cooperative Sangh which is situated at the factory site has purchased six trucks and two tankers for the collection and marketing of milk in the region. The trucks engaged in the transport of sugarcane can also be engaged in the transport of molasses, ash, bagasse, sugar, fertilizers, insecticides, seeds, etc., in the off season.

Apart from this, the Maharashtra State Transport buses have started plying almost on all these routes. For instance, (i) Kopargaon to Bramhangaon via Takali, (ii) Kopargaon to Sangavi-Bhusar via Takali, (iii) Kopargaon to Padhegaon via Godhegaon, (iv) Kopargaon to Vaijapur via Talegaon-Male,

(v) Kopargaon to Vaijapur via Ukkadgaon, (vi) Kopargaon to Dhamori, (vii) Kopargaon to Samvatsar, etc. Thus, majority of the villages from the area of operation of the factory are connected with the taluka places by bus services. But there has been no increase in the railway route mileage even after the establishment of the sugar factory.

From this we can conclude that the establishment of the sugar factory has stimulated road construction in the area and thus assisted the growth of road-transport facility which in the case of rural areas is one of the essential conditions of economic development.

#### 8.11 Development of Irrigation Facilities

It has been mentioned earlier that six sugar factories are working in the Kopargaon taluka. This number is very big as compared to other talukas. So there is a keen competition among sugar factories in acquiring sugarcane as raw materials. In order to get more sugarcane, the sugar factories have been trying to develop irrigation facilities in the region, which will enable the farmers to bring more land under sugarcane cultivation. The expenditure incurred on the development of the irrigation facilities and the targets of irrigated land achieved are shown in Table 8.4. The various irrigation projects undertaken by the sugar factory are given below.

8.12 (A) Lift Irrigation Projects: The sugar factory has constructed three lift irrigation projects in its area of

**Table 8.4. Expenditure incurred on the development of irrigation facilities by the Sanjivani Cooperative Sugar Factory**

Name of the Scheme	Amount spent up to 1975-76 (Rs.)	Number of schemes	Irrigation target aimed at (acres)	Number of schemes	Irrigation target achieved (acres)	Remarks
<b>1</b> <u>Construction of lift irrigation</u>						
(A) Dadmavati lift irrigation project, Chane-gavhan	1,75,000	1	200	1	46	
(B) Moreshvar lift irrigation project, Morvis	2,00,000	1	300	1	163	
(C) Proposed lift irrigation project (survey work)	1,00,000	13	3900	13	-	Construction of the project is to be started.
<b>2</b> <u>Community wells constructed</u>	50,000	6	60	3	30	
<b>3</b> <u>Percolation Tanks</u>						
(A) The construction of percolation tanks	3,50,000	5	-	3	-	The percolation tanks are being constructed for the purpose of increasing the underground water level i.e. to increase the level of water of wells constructed in the region. Hence the irrigation target aimed at and achieved under the percolation tanks are not given.
(B) Survey work of the proposed percolation tanks	1,50,000	10	-	10	-	
<b>4</b> <u>Proposal of Dam (Vasant Bandhara)</u>	10,000	1	-	1	-	Target aimed at and achieved are not mentioned in the original record.
<b>5</b> <u>Purchase of Boring Unit</u>	5,00,000	1	-	1	-	It is being used to find out water level before constructing new wells, so the target aimed at and achieved are not mentioned
<b>Total</b>	<b>15,25,000</b>	<b>30</b>	<b>4460</b>	<b>33</b>	<b>239</b>	

Source: Original record of the Sanjivani Cooperative Sugar Factory, Ltd., Sahajanandanagar.



operation; one at Chandgavhan, another at Morvis and the third one at Kandal. These three villages are on the banks of the Godavari river. A big well has been dug in each village and a pipeline has also been laid down for watering the land. The lift irrigation project at Kandal has failed due to lack of water. The projects were undertaken in 1968 and 1972 and now the first two projects are in operation.<sup>12</sup>

(1) Padmavati Lift Irrigation Project: Till 1975-76 the factory had managed to spend Rs. 1,75,000 on this project from its own funds. In 1970 the Central Bank of India advanced loans for the project but it was inadequate. In the very first year of the completion of the project i.e. 1974-75 it provided water to 23 acres of sugarcane cultivated area; and 23 acres of other crops like jowar, bajara, wheat, etc. By the end of 1975-76 it was providing water to 46 acres of land.<sup>13</sup> Under the lift irrigation project the target of acreage to be irrigated was of 200 acres but by the end of 1976 only 46 acres of land has been brought under irrigation because of the lack of adequate water in the Godavari river. In 1975, a separate society called, the Padmavati Cooperative Water Supply Society, Chandgavhan, was established for the distribution of water. The society had been working under the control of the sugar factory.

(2) Moreshtar Lift Irrigation Project, Morvis: The project was established at Morvis by the factory. By the end

of 1975-76, Rs. 2,00,000 were spent on this project by the factory. Under this project, 163 acres of land were irrigated out of which 33 acres were reserved for sugarcane cultivation and 130 acres for Kharif and Rabi crops like Jowar, bajra and wheat.<sup>14</sup>

However, the physical target of irrigated land of 300 acres was not fulfilled even by the end of 1976 because of the task of sufficient water in the Godavari river. For the distribution of water, a cooperative society viz., the More-shvar Cooperative Water Supply Society Ltd., Morvis, has been established. The society has been working under the control of the sugar factory.

### 8.13 (B) Proposed Lift Irrigation Projects

The sugar factory has conducted geological and geophysical surveys of 15 villages from its area of operation with the help of AFARM, an international institute of geological and geophysical study at Ahmednagar to find out proper spots for the construction of lift irrigation projects.<sup>15</sup> The villages are on the bank of the Godavari river. In 1974-75, the factory prepared plans and estimates of 13 projects and submitted them for the approval of the Department of Irrigation and Power of the Government of Maharashtra. Besides, some of these proposals were sent to the Land Development Bank to secure loans. The villages in which the lift irrigation projects are to be constructed are: (1) Dauch Kh. (2) Dauch Bk. (3) Mahegaon Deshmukh, (4) Kolgaon Thadi,

(5) Manjoor, (6) Dhamori, (7) Malegaon-Thadi, (8) Dharangaon, (9) Murshatpur, (10) Sonari, (11) Sangavi-Bhusar.<sup>16</sup>

It has been decided to construct two lift irrigation projects in Manjoor and two projects in Dhamori village, and one project each in the remaining villages. The factory has spent Rs. 1,00,000 in carrying out the necessary surveys. About 300 acres of land will be brought under irrigation under each project after the completion of the project.

#### 8.14 (C) Percolation Tanks

In 1972-73, the sugar factory undertook the construction of percolation tanks and village tanks. Percolation tanks were constructed with the help of Zilla Parishad (Ahmednagar) in the villages of Karanji, Padhegaon, Anchalgaon, Karali, Savalgaon, Tilawani, Talegaon-male and Shaha. Village tanks were constructed at Apegaon, Bolaki, Shirasgaon, Godhegaon, Ghoyegaon, Ukkadgaon, Dahegaon and Kakadi without any outside help. The tanks are constructed with the twin objectives of providing work for the famine affected people and the irrigation facility for the sugarcane cultivators.<sup>17</sup> In 1974-75, the factory conducted a feasibility survey of 11 percolation tanks. In 1975-76 the factory spent Rs. 5,00,000 on the construction and survey of tanks.<sup>18</sup>

#### 8.15 (D) Dams

In 1974, the factory undertook the scheme of constructing dams on the river Godavari at Hingoni, Mahegaon-Deshmukh and Manjoor. The scheme is undertaken with the object of

storing water from lift irrigation projects undertaken by the sugar factory. The factory has conducted a survey of the proposed dams and the proposal of Hingni dam is sent to the Government for approval. The factory has spent Rs.10,000 for the survey and plan estimates of the projects.

#### 8.16 (E) Community Wells

During the famine of 1972-73, the State Government had undertaken construction of some community wells. Under this scheme the factory took the responsibility of constructing six community wells. By the end of 1976, the factory completed construction of three wells and as a result, apart from the provision of drinking water, 30 acres of land was brought under irrigation. The factory spent Rs. 1,50,000 on this work.<sup>19</sup>

#### 8.17 (F) Boring Unit

As 90 per cent of the sugarcane crop is under well irrigation in the area of operation of the factory, serious attention has to be given to the problem of water availability by helping to locate well water for irrigation. It has been found that due to a decrease in the rainfall in the area, water level has gone down. Hence it was felt necessary to deepen the existing wells and take new bores. For this purpose, the factory purchased a boring machine for Rs.5,00,000 in 1973. Forty-eight farmers have taken advantage of this machine since then. The factory takes a nominal charge for hiring out the machine.<sup>20</sup>

### 8.18 Other activities of agricultural development

Some of the remaining activities of the agricultural development undertaken by the factory are listed below:

(1) Levelling of Land: Levelling of land is essential both for proper watering and manuring. In 1966-67 the factory purchased a bulldozer unit for this purpose. The factory has been hiring it out to the farmers at concessional rates. It is reported by the factory that about 2000 acres of uneven land has been properly levelled. It has made it possible for some barren land to be brought under cultivation. To meet the increased demand for the unit by the shareholders, the factory purchased two more bulldozers in 1975.<sup>21</sup>

(2) Soil testing: It is necessary to know the constituents and their proportions in the soil in order to understand the usefulness of the soil for the cultivation of various crops and appropriate fertilizer mix. Accordingly, the factory has been sending samples of soil of the land of the shareholders to Padegaon Research Centre since 1967. But in 1975, the factory opened its own Soil Testing Laboratory.<sup>22</sup> In 1974-75, soil samples of nearly 500 sugarcane cultivators were analysed. In 1975-76 nearly 600 cultivators took advantage of this facility. The soil specialists in the laboratory have recommended soil amendments so that greater yield and better quality of sugarcane with lesser doses of fertilizers could be ensured to the cultivators.<sup>23</sup>

(3) Supply of quality cane seed: Farmers ignorantly

use only the traditional seeds. Many of them are even unaware of the fact that a good crop requires healthy and disease-free seed. The factory purchases seed of good quality sugarcane and distributes it among the shareholders. Since 1972 the factory has maintained its own seed farm. It has also been supplying better-quality seed to the sugarcane cultivators at concessional rates for multiplication. Apart from the better sugarcane seed, the factory has been providing quality seeds of wheat, jowar, bajra, etc. to the cultivators on credit.<sup>24</sup>

(4) Supply of fertilizers and manures: The sugar factory has been supplying fertilizers and manures to the shareholders at reasonable prices and also on credit since 1972-73. In the period of scarcity of fertilizers, the factory directly purchased fertilizers from the Gujarat State Fertilizers and some other chemical fertilizers from the Maharashtra Government and provided them to the shareholders of the factory on "no loss, no profit" basis. In 1975-76, the sugar factory purchased fosco-gypsum from M/s. Kamdhenu Minerals, Bombay, and provided it to 100 shareholders.<sup>25</sup> Thus by supplying manures and fertilizers in time to the shareholders the factory has been trying to safeguard the crops of farmers in the area.

(5) Technical guidance to the cultivators: Since 1975, the factory has appointed 26 agricultural experts in order to investigate the reasons of low yields in the area of its

operation. On the basis of their findings they have been advising farmers about the improved cultivation practices.<sup>26</sup>

(6) Kharif and Rabi Scheme in Dry Farming: In Kopar-gaon taluka, though some remarkable achievements have been made in the irrigated tract, the farmers in the dry area are still very poor and they are completely dependent on nature and timely rains for their existence. Therefore, the factory had undertaken an experimental Kharif season programme in nearly 100 acres of land in two villages in 1974-75. The crops covered under this scheme were hybrid jowar, tur, and castor seed in this area. The concerned farmers were guaranteed a minimum of 1.5 quintals of foodgrains per acre as against their annual average of about 70 kgs per acre in the past. The factory financed the farmers to the extent of Rs. 300 per acre in kind and gave them all the necessary technical assistance with the help of experts from the Mahatma Phule Agricultural University at Rahuri.<sup>27</sup> The factory has succeeded in this experiment by achieving the expected yield.

#### 8.19 Social Services rendered by the Sugar Factory

All the cooperative sugar factories in Maharashtra are owned by peasants and are providing various social welfare services to the rural area. For the development of the rural area the sugar factories generally collect Re. 1/- per ton of sugarcane crushed each year for raising a development fund. The Sanjivani Cooperative Sugar Factory has been

creating the Development Fund in the same manner. The factory has been using the fund for the development of the region and for the social and cultural activities. Similarly, the factory has raised some other funds like the Education fund, Relief fund, Chief Minister's fund, the Sugar Industry Development Fund, etc. which are shown in Table 8.5. The expenditure incurred out of these funds for social and cultural activities is given below.

(1) Financial Assistance to the Educational Institutions: By the end of 1975-76, the factory had raised and utilized the educational fund upto Rs. 10.75 lakhs. Out of this fund, the factory established a primary school on the factory site. It has also helped the secondary schools of the villages like Godhegaon, Yesgaon, Dahigaon-Bolaka, etc. Besides, the Sadguru Gangagiri Maharaj College of Arts, Commerce and Science at Kopargaon is being assisted financially by the sugar factory and the Kopargaon Cooperative Sugar Factory Ltd. The factory has been giving financial assistance to some other schools, colleges, and boarding houses for students of the Kopargaon and Shrirampur Talukas.

(2) Financial Assistance to the Victims of Natural Calamities: In order to assist the victims of natural calamities like cyclone, flood, famine, earthquake, etc., the factory has raised relief funds and also contributed to the Chief Minister's Fund. After the Koyna earthquake, the factory helped distressed people by sending financial



**Table 8.5.** Funds created and utilised for the developmental and social welfare activities in the region by the Sanjivani Cooperative Sugar Factory, Ltd. (during 1963-64 to 1975-76)

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70
1. Area Development Fund	-	-	-	-	-	-	-
2. Education Fund	0.18	0.36	0.58	0.19	0.59	0.11	1.30
3. Koyana Relief Fund	-	-	-	-	1.96	1.51	-
4. Hutment for landless labourers	-	-	-	-	-	-	-
5. Chief Minister's Relief Fund	-	-	-	-	-	-	-
6. Sugar Industrial Research and Development Fund	-	-	-	-	-	-	-
7. Sugar Industrial Development Deposit	-	-	-	-	2.17	3.03	1.89
8. Rural debentures	-	-	-	-	1.31	1.51	-
<b>Total</b>	<b>0.18</b>	<b>0.36</b>	<b>0.58</b>	<b>0.19</b>	<b>6.03</b>	<b>6.16</b>	<b>3.19</b>

Particulars	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	Total
1. Area Development Fund	-	1.35	2.46	4.88	3.71	3.05	15.45
2. Education Fund	1.25	1.60	-	1.21	1.86	1.52	10.75
3. Koyana Relief Fund	-	-	-	-	-	-	3.47
4. Hutment for landless labourers	-	-	-	-	3.71	3.05	6.76
5. Chief Minister's Relief Fund	1.35	3.69	7.37	-	-	-	12.41
6. Sugar Industrial Research and Development Fund	-	2.84	-	-	3.71	3.05	9.60
7. Sugar Industrial Development Deposit	5.40	5.64	-	-	7.43	-	25.56
8. Rural debentures	1.35	2.84	-	1.89	7.43	6.10	22.43
<b>Total</b>	<b>9.35</b>	<b>17.96</b>	<b>9.83</b>	<b>7.98</b>	<b>27.85</b>	<b>16.77</b>	<b>106.43</b>

Source: Record provided by the Manager, Sanjivani Cooperative Sugar Factory, Ltd.

assistance of Rs. 3.47 lakhs.

In 1969 many families on the bank of the Godavari lost their belongings like utensils, clothes, foodgrains, houses, cattle, crops, etc., in the heavy flood. The factory helped all the flood-affected people both in cash and kind. The farmers whose farms were inundated were given Rs. 300 per acre as compensation for the loss of crops. The farmers to whom the factory has given assistance are from the following villages: Douch Kh., Douch Bk., Kokamthan, Samvat-sar, Jeur-Kumbhari, Dharangaon and Kopargaon. The total help rendered to flood affected people was Rs. 45,087.<sup>29</sup>

The factory helped the famine affected people in 1972-73. The factory purchased foodgrains worth Rs. 9.45 lakhs, from other States and supplied them to the people at low prices. In this operation, the factory had to bear a loss of Rs. 27,100. Similarly, the factory provided cattle feed worth Rs. 21,000 to the farmers. Apart from this the factory gave tools worth Rs. 15,000 to the labourers. The labourers were given employment on the construction of factory roads. In order to make provision for drinking water, the factory provided a boring machine for digging wells in the famine affected area. It also made provision for free boarding, for the students who were from the famine affected area.<sup>30</sup>

(3) Provision of Bank Facilities: It has already been mentioned in Chapter III that the sugar factory had arranged for grant of loans of Rs. 1.28 crores through the Central Bank

of India to the needy farmers for digging and deepening of wells and also for cultivation in 1970-71. By 1975-76, the factory provided 40 tractors and 70 trucks on loan to the shareholders through the Central Bank of India and Maharashtra State Finance Corporation.<sup>31</sup>

(4) Family Planning Camps and Medical Aid: In 1975-76 the sugar factory had organized some family planning camps. In these family planning camps 425 men and 100 women were operated. The factory spent Rs. 16,955 on these camps. It also arranged for cholera and smallpox inoculation. The polio and triple vaccine doses were given to the children of the factory labourers at a nominal charge.<sup>32</sup> The factory meets the expenses from the Area Development Fund.

(5) Hutments for Landless Labourers: Under 20 point programme of the Government of India the sugar factory spent Rs. 6.76 lakhs during 1974-1976 for building huts for landless labourers. The sugar factory built 99 huts in 19 villages in its area of operation. The huts are built in bricks and they have asbestos roofs. Table 8.6 indicates the number of hutments built in respective villages.<sup>33</sup> The expenses on the item are met from the Area Development Fund.

#### 8.20 Overall Changes in the Villages of the Sugar Factory Area

We have studied the impact of the sugar factory on the lives of farmers, agricultural labourers, non-agriculturists,

**Table 8.6.** Number of huts built by the Sanjivani Co-operative Sugar factory in various villages

Sr.No.	Name of the village	No. of huts built
1	Savalgaon	12
2	Shirasgaon	1
3	Tilawani	1
4	Ukkadgaon	4
5	Kokamthan	3
6	Kasali	6
7	Dhotre	6
8	Godhegaon	1
9	Apegaon	1
10	Ghoyegaon	1
11	Talegaon male	3
12	Khopodi	2
13	Rawande	8
14	Sonari	5
15	Padhegaon	9
16	Bolaki	2
17	Ogadi	7
18	Bhamhangaon	6
19	Malgaon-Thadi	21
	<b>Total</b>	<b>99</b>

and the labourers of the sugar factory. We have also seen other changes caused by the sugar factory in the rural economy such as the development of allied industries, transport and irrigation facilities, agricultural development programmes, bank services and other social services. As a result, some overall improvements in the villages have taken place. The data regarding the overall changes in the villages of the sugar factory area are collected in the questionnaire number five. The overall changes observed are presented below:

#### 8.21 Business Development

Due to an increase in the income of farmers, non-agriculturists, agricultural labourers and labourers of the sugar factory, the number of shops in the area of operation of the factory has increased which is shown in Table 8.7. The increase in the number of cycle shops, groceries and textile shops has been relatively greater than in other types of shops. Dairies and laundries have been started recently. There is overall increase in the various occupations. Here, the development of business is defined as the increase in the number of shops and opening of new business in the region.

Thus, from Table 8.7 we can say that after the establishment of the sugar factory the development of businesses took place in the area. How and to what extent the various businessmen have benefitted has already been explained in

Chapter VII in detail.

Table 8.7. Various businesses before (1961-62) and after (1975-76) the establishment of sugar factory

Type of business	Number of shops	
	Before the sugar factory	After the sugar factory
1. Grocery	16	38
2. Cloth-shops	1	3
3. Hotels	2	19
4. Dairies	-	2
5. Bicycle shops	1	10
6. Laundries	-	3
7. Saloons	10	14
8. Tailoring shops	13	23
9. Moneylenders	2	3
10. Shoe-makers shops	9	11
Total	54	126

### 8.22 Institutional and other changes

The institutional changes are also observed after the establishment of sugar factory. The changes are shown in Table 8.8. These changes are mainly due to the establishment of the sugar factory.

(1) Dispensaries and Hospital: Before the establishment of the sugar factory there was neither a dispensary nor a

Table 8.8. Number of various institutions before (1961-62,) and after (1975-76) the establishment of the sugar factory

Type of Institutions	Before the establishment of the sugar factory	After the establishment of the sugar factory
1. <u>Dispensaries and Hospitals</u>		
(a) Private	-	4
(b) Government	-	-
2. <u>Veterinary Hospital</u>	-	1
3. <u>Schools and Colleges</u>		
(a) Upto 4th Std.	8	17
(b) Upto 7th Std.	3	8
(c) Upto S.S.C.	-	1
(d) College	-	-
4. <u>Co-operative Credit Societies</u>	12	13
5. <u>Consumers' Coop. Societies</u>	-	2
6. <u>Banks</u>	-	2
7. <u>Post Offices</u>	-	5
8. <u>Bus Service</u>	-	9
Total	23	62

hospital in the area. The people from the area had to go to the taluka place for medical aid. But after the establishment of the sugar factory, three private dispensaries at Godhegaon, Lauki and Shingnapur have come up.

(2) Veterinary Hospital: A veterinary hospital was established by the sugar factory at the factory site in 1972-73.

(3) Schools and Colleges: There has been an increase in the number of primary and secondary schools with the help of the sugar factory. The number of primary schools has increased from 11 to 25 and one of the new high schools is established in the area of operation of the factory. However, no college was established in the area of operation of the factory.

(4) Co-operative Credit Society: There is no significant increase in the number of cooperative credit societies after the establishment of the sugar factory.

(5) Consumer Cooperative Societies: Two consumer co-operative societies were started, one at Takali and the other at Singnapur between the two points of time under consideration.

(6) Bank: Two branch offices of banks have been established after the setting up of the sugar factory, one at Takali viz., the Ahmednagar District Cooperative Bank and the other at Singnapur at the factory site i.e. the Central Bank of India. This branch office of the Central Bank was opened in 1970. During the survey it is observed that the



banks have been providing agricultural credit to farmers and also advancing loans for the purpose of purchasing trucks, tractors and for dairy development.

(7) Post Office: Post offices were opened at Godhegaon, Singnapur, Shirasgaon Takali and Nategaon after the establishment of the sugar factory. The reason for the increase in the number of post offices may be the development of link roads and the consequent availability of regular transport.

(8) Bus Service: In the last 10 years the State Transport bus service has increased due to development of link roads by the factory. Out of the total villages surveyed, 9 villages (more than 60 per cent of the villages) have been getting advantage of the increased bus service.

(9) Other Developments

Water supply: We know that the villages generally have very poor provision of drinking water. But in Takali village, the water supply project was started in 1975, because the local people could raise required finance as their income have increased after the establishment of the sugar factory.

Weekly Market: The weekly market at Shirasgaon has now been operating for the last seven years. The reason for the starting of the weekly market may be the development of transport facilities as a result of the construction of link roads by the sugar factory.

### 8.23 Impact on Barter System

It is found that before the establishment of the sugar factory barter system was practised to a great extent in the villages. After the establishment of the sugar factory the barter system is also affected to some extent. The reason for this is that people started sales and purchases of their goods and services with their increased money income which reduced the volume of transactions under barter system. Unsubstantiated information shows percentage decrease in the barter transactions in the surveyed villages.

With due consideration to the limits of the oral information given by the Sarpancha of the villages, it can be said that before the establishment of the sugar factory the barter constituted around 50 to 60 per cent of the total transactions in the area which, it is claimed, decreased to around 20 to 30 per cent. However, in some villages the barter exchange has been completely replaced by the money exchange.

### 8.24 Benefits of the Sugar Factory to the Villages in its area of operation

The benefits received by the villages from the sugar factory are shown in Table 8.9.

From the above table it is seen that all the villages have benefitted from the pilot scheme of the factory. Secondly, 33.33% of the villages have benefitted from the percolation tanks constructed by the sugar factory with the

**Table 8.9.** Benefits of the sugar factory received by the villages which are in its area of operation

(Total No. of villages surveyed: 15)

Type of benefit received	No. of villages benefitted	Percentage to the total No. of villages surveyed
1. Pilot scheme	15	100.00
2. Percolation tanks constructed	5	33.33
3. Educational facility	5	33.33
4. Dairy development scheme	2	13.33
5. Employment in the factory	3	20.00
6. Construction of link roads	7	46.67
7. Assistance in famine period	5	33.33

help of Zilla Parishad, Ahmednagar. Out of 15 villages, 2 villages have benefitted from the dairy development scheme. But one can hope that with the extension and expansion of the dairy development programme a larger number of villages will be benefitted. Some people from 20 per cent of the surveyed villages have got employment in the factory. Apart from this, 46.67 per cent of the villages have benefitted from the link roads which are constructed by the factory. It has already been explained that the factory has helped

the people in villages in its area of operation in the famine period. The percentage of such villages is 33.33.

Thus from the table we can say that many of the villages in the area of operation of the factory have directly benefitted due to the establishment of the sugar factory and it is hoped that with the development of the factory the area will get more benefits.

## FOOTNOTES

1. Annual Report for the year 1970-71, p. 8.
2. Information provided by the Manager of the Distillery.
3. Information provided by the Manager of the Sugar Factory.
4. Annual Report for the year 1969-70, p. 7.
5. From the Record of the Godavari Milk Producers' Sangh, Sahajanandanagar.
6. Ibid.
7. A short note on Sanjivani Cooperative Sugar Factory, Ltd., page 11, published by the Sanjivani Cooperative Sugar Factory in 1975-76.
8. Annual Report for the year 1969-70, p. 7.
9. Information provided by the Manager, Godavari Khore Milk Producers' Cooperative Sangh, Sahajanandanagar.
10. Ahmednagar District Gazetteer 1976, pp. 564-70, Government of Maharashtra.
11. Information provided by the Manager of the Godavari Khore Milk Producers' Cooperative Sangh, Ltd., Sahajanandnagar.
12. Annual Report for the year 1969-70, p. 7.
13. The Padmavati Cooperative Water Supply Sanstha, Chandgavhan, Annual Report for the year 1976-77, p. 7.
14. The Moreshtar Co-operative Water Supply Sanstha, Annual Report for the year 1975-76, p. 2.
15. Annual Report for the year 1970-71, p. 7.
16. Annual Report for the year 1973-74, p. 13.

17. Annual Report for the year 1972-73, p. 10.
18. Information provided by the Manager of Sanjivani Cooperative Sugar Factory, Sahajanandanagar.
19. Annual Report for the year 1974-75, p. 7.
20. Annual Report for the year 1975-76, p. 7.
21. Annual Report for the year 1975-76, p. 7.
22. Annual Report for the year 1975-76, p. 5.
23. Annual Report for the year 1975-76, p. 6.
24. Annual Report for the year 1973-74, p. 9.
25. Annual Report for the years 1974-75 and 1973-74, pp. 5 and 9 respectively.
26. Annual Report for the year 1975-76, p. 7.
27. Annual Report for the year 1974-75, p. 5.
28. Information provided by the Manager, Sanjivani Co-operative Sugar Factory, Ltd.
29. Annual Report for the year 1974-75, p. 7.
30. Annual Report for the year 1972-73, p. 9.
31. Annual Report for the year 1970-71, p. 9.
32. Annual Report for the year 1975-76, p. 13.
33. Annual Report for the year 1975-76, p. 13.

## CHAPTER IX

### SUMMARY AND CONCLUSIONS

9.1 With the introduction of economic planning, the economic development of rural areas became a priority objective of policy, both at Central and State Government levels. The development of agro-based industries in rural areas was supposed to accelerate the overall development. This was one of the basic principles on which co-operative sugar factories were given importance in the five year plans.

9.2 A cooperative sugar factory in the rural area, or, for that matter, any agro-based large-scale industry is considered a growth centre. Therefore, the study of possible backward and forward linkage effects of the sugar factory assumes great significance. Sugarcane, a cash crop, being the main input for a sugar factory, the establishment of a sugar factory increases the economic importance of the sugarcane crop. It may induce increased irrigation facilities, lead to better cropping pattern and hence increase in the income and standard of living, of the farmers in the surrounding region of a sugar factory. The increased agricultural income may result in the purchase of modern implements of agriculture. This should lead to the adoption of modern methods of farming. The transportation of sugarcane may provide seasonal employment during the crushing

season to immigrant harvesting labourers. There is a consequent increase in demand for the consumer goods and essential services. This stimulates the local trade and other occupations. There is generally an increase in employment opportunities for local labour. The changing farm technology and cropping pattern generate additional jobs for agricultural labour.

9.3 On the output side sugar is the main product supplemented by a range of by-products like alcohol, bagasse, press-mud etc. The Government gets more tax revenue both from direct and indirect taxes on sugarcane, sugar and on by-products. The increase in trade and commercial activities requires an increase in the number of commission agents and banking facilities. A certain section of the agricultural class starts getting a new flow of income in the form of dividend on the shareholding in the sugar factory. The sugar factory may spend on the various social services such as education, medical aid, recreation, etc. It may also incur expenditure on agricultural extension services like dairy development, agricultural research as also provision of irrigation facilities and other agricultural inputs.

9.4 The transportation of sugarcane, sugar, by-products and increased propensity to travel results in the expansion of road transport facilities around the location of the factory. Thus from the input and output sides a sugar factory is expected to generate linkage effects in a rural area.



9.5 The object of the study was to measure the impact of a sugar factory on and its role on the economic development of the surrounding rural area. The details of the objectives and methodology of this study are explained in Chapter II. A brief historical review of sugarcane farming and sugar industry is given in the first chapter.

9.6 For the present study 15 villages were selected from the area of operation of the Sanjivani Cooperative Sugar Factory of Kopargaon taluka. To identify the exclusive impact, two point data was collected in the survey of the families of agriculturists, non-agriculturists, agricultural labourers, and the sugar factory labourers. A 10 per cent random sample survey was carried out. Information regarding the overall economic changes in the selected villages were collected from the respective Sarpanchas of the sample villages.

The two point data relates to the years 1961-62 and 1975-76, the former being the pre-factory and latter being the post-factory year. These data/represented and analysed in Chapters III to VIII.

9.7 In the third chapter the impact of the sugar factory on agriculture is analysed. It is found that the area under irrigation increased after the establishment of the sugar factory. Especially, area under well irrigation increased more as compared to the area under canal irrigation. It is also found that the marginal landholders from the

first size-group of holding have constructed more wells than the farmers from the second, third and fourth size-groups of holdings. The smaller landholders have taken greater advantage of the help given by the sugar factory for the construction of wells. The farmers from the other size-groups of holdings already had some wells and other irrigation facilities before the establishment of the sugar factory so these farmers did not feel the urgency or the need of digging new wells, unlike the farmers in the first size-group of holding.

Sugarcane being the more paying cash-crop, the area under sugarcane increased from 3.61 per cent to 11.67 per cent. On the contrary the area under other crops like jowar, bajara, wheat, groundnut and cotton decreased even after the increase in irrigation facilities. This shows that after the establishment of the sugar factory the tendency of cultivating the cash crop of sugarcane increased among the farmers. The motivation is to earn more, regular and certain income.

The increase in irrigation facilities and change in the cropping pattern have called for change in the methods of farming. Of the total farmers nearly 50 per cent adopted modern methods of farming like multiple cropping, use of chemical fertilizers, improved seeds, pesticides and insecticides, etc. The practice of mechanical farming and scientific method of irrigation were also adopted. The end

result is an increase in the productivity of agriculture.

The adoption of mechanical farming led to a decrease in the number of traditional agricultural implements and an increase in the number of modern implements. This is more true in the case of larger landholders. Apart from this, the total number of cattle also increased. But the number of bullocks decreased slightly because of mechanical farming. On the contrary, the number of milch cattle like cows, buffalos and she-goats increased due to the dairy development programme undertaken by the sugar factory.

On the basis of these findings, it can probably be argued that the development of agriculture depends in a broad sense on major agro-based industries. This may suggest a policy prescription that the development of agriculture be stimulated by encouraging locally-based industries with modern technology.

9.8 Due to agricultural development income of farmers increased. The sugar factory also provided opportunities of subsidiary occupations to the farmers in the region, which enhanced their total income. The change in income of the farmers and in their standard of living is explained in Chapter IV.

It is found that the cultivation of sugarcane and the increased productivity of agriculture added to farmers' income from land. The increase in the income from land is lower in the case of the marginal farmers (from the first

size-group of holding) as compared to the income from land of the farmers from other size groups of holdings. The average increase in the income from land of all the farmers is 137.21 per cent.

The increased practice of mechanical farming provided an opportunity to get additional income from the hiring of agricultural implements like tractors, oil engines, etc. Some farming families who get employment in the sugar factory earned more income. The establishment of the sugar factory also provided an opportunity of subsidiary occupations. Some farmers started new business such as transport, hotel, grocery, bicycle shop, textile shop, etc. So income of such agricultural families increased further. Among all these sources the increase in income from service is 1028.85 per cent, and that from the subsidiary occupations is 307.19 per cent.

The money income of farmers increased by 135.31 per cent, 146.92 per cent, 182.46 per cent and 177.22 per cent in the case of farming families the first, second, third and fourth size-groups of holding respectively. The average money income of all the farmers increased by 162.88 per cent at the second point of time. At the same time the prices of agricultural commodities appear to have increased by 127.37 per cent over the period. The real income of all the farmers increased only by 15.62 per cent. The real income of the farmers in the first, second, third and fourth

categories increased by 3.49 per cent, 8.59 per cent, 24.23 per cent and 21.92 per cent respectively.

It is also found that the real income of the farmers in the third and fourth categories increased mainly because of the increase in the income from land, while the real income of the farmers in the first and second categories has increased mainly because of the increase in the income from employment and the subsidiary occupations. Hence, presumably, the agricultural productivity of large landholders increased more than that of small landholders.

As compared to the increase in the total income of the smaller farmers the total income of the farmers increased more. Therefore, we can conclude that the establishment of the sugar factory aggravated inequalities of income in the rural area.

9.9 It is observed that with the increase in income, standard of living also went up in general. Among the farmers the housing condition of big landholders improved. They also started using superior type of household equipments. The expenditure pattern of the farmers changed with the increase in their income. Out of their income many farmers started spending on the permanent development of land and on the construction and repairs of houses. Some also spent on the purchase of furniture and a few of them opened bank accounts with gradually increasing balances.

9.10 From the foregoing observations two important conclu-

sions follow. Firstly, it is seen that the increase in productivity of land in the wake of the establishment of the sugar factory is directly related to the size of holding i.e. greater the size of holding, greater the increase in productivity. Secondly, the increase in income of the farmers also broadly follow the same pattern. But it is to be specially noted that the relative increase for the big landholders is slightly less than that for the farmers in the next largest size-group of holdings. In other words, the increase in income seems to be concentrated in the middle ranges of the size-groups of holdings. The possible explanation of this phenomenon may be twofold: (a) the working of the law of diminishing returns after a certain point, and (b) the fact of initial high levels of income in the case of larger landholders.

Earlier, it was pointed out that smaller landholders availed of the credit facilities of the sugar factory to a greater extent. This may suggest a possibility of greater increase in the productivity of agriculture assuming that the credit so received is spent on the improvement of productivity to a large extent which did not materialise. The reason for this may be the uneconomic size of the holding.

In short, both on the test of productivity as well as income, the establishment of sugar factory seems to have aggravated rather than ameliorated the economic inequalities in the rural areas.

In Chapter V an attempt is made to find out the impact of the sugar factory on the lives of agricultural labourers. It is observed that out of the agricultural labourers, 90.20 per cent are local and most of the remaining have migrated from other villages of Kopergaon taluka which are not under the area of operation of this sugar factory. Some of the rest are from the neighbouring districts. The reasons for the migration of labourers in the region are many such as landless, unirrigated land, leasing of land, loss of traditional occupations and/or their inability to yield adequate income.

The pre-factory average annual employment for the labourers was 216 days. In the post-factory period this increased to 263 days, mainly because of changes in the cropping pattern. The pre-factory average daily wage rate for an agricultural labour was Rs. 1.81 which rose to Rs. 2.93 in the post-factory period. This is an increase of 61.63 per cent. In the post-factory period additional income became available to about 36.28 per cent of these labourers. This came from other sources such as agriculture, dairy and the traditional occupations such as rope-making, cobblery, barber-shops, smithy, tailoring, masonry, etc.

The average annual income of the labourers increased from Rs. 389.86 to Rs. 772.66, which is an increase of 98.19 per cent. However, the price level of essential commodities customarily consumed by the labourers had increased by

236.62 per cent. It is thus evident that real income of agricultural labourers did not increase in the post-factory period. Nearly 78.92 per cent of the agricultural labourers have their family income below the subsistence level, 10.30 per cent at the subsistence level and only 11.18 per cent above the subsistence level. The quality and quantity of consumption basket and of the consumption of cloth remained unchanged, because of the constraint of low income.

9.12 From the survey it is found that the agricultural labourers are unorganized because of illiteracy and poverty. Hence they are unable to solve their serious problems.

Although the money income of the agricultural labourers increased in the post-factory period, the real income has actually decreased because of rapidly rising price level. Consequently, their standard of living has in fact worsened. The more important point to note is that, compared to the agriculturists, the economic conditions of the agricultural labourers actually worsened.

9.13 In Chapter VI, economic conditions of the sugar factory labourers and their problems are studied. It is observed that 48.28% of the sugar factory labourers come from traditional farming households, whereas 51.72 per cent are landless labourers. Some of them were engaged in their traditional occupations.

32.17 per cent of the factory workers migrated from



other districts and states to this region. Of the workers, 53.81 per cent get income from other sources such as agriculture, manual labour, traditional occupations, etc. Compared to agricultural labourers, the sources of income of the factory workers are more. Among the factory workers, income of the permanent workers is higher than the income of seasonal and temporary workers. The incomes of all these labourers are above the subsistence level.

Apart from wages and salaries, the labourers get other facilities, such as bonus, overtime benefit, medical aid, and house accommodation. So, their real income is much more than the real income of the agricultural labourers. In spite of the increasing high income, their consumption basket and consumption of cloth by and large remained the same. This is an indication of larger amount of savings. The inference is supported by the increased use of modern household durables as well as increased spending on house construction, purchase of land, purchase of shares, mainly of cooperative enterprises, as also the increase in the bank balances.

The establishment of the sugar factory led to the formal unionization of sugar factory workers. But it has not shown initiative and effort in finding out and attending to their problems. On the contrary in the survey it is found that the management of the factory is considerate in solving the problems of the labourers. Seasonal un-

employment is the major problem of the seasonal labourers. With the completion of the crushing season, they become unemployed every year.

9.14 Briefly, we can say that the establishment of the sugar factory generated additional employment opportunity for the local people. This has reduced to a certain extent the population burden on land. It created a class of industrial workers in the rural areas. Despite this it has not led to a shortage of labourers for agriculture. This may be explained either by the possible reduction in the disguised unemployment in agriculture or by the simple fact of the rate of increase of agricultural labour being far in excess of the rate at which additional jobs were given by the factory.

9.15 In Chapter VII, the impact of the sugar factory on the business of non-agriculturists, on their income, and on their standard of living is studied. It is found that the establishment of the sugar factory resulted in the increased family business of 29.41 per cent of the non-agriculturists. To this category belong the families in transport, hotel, grocery and carpentry activities. No impact was observed in the case of 39.22 per cent of the non-agriculturist families, engaged in iron smithy, barber shop, sale of bangles, priesthood, tailoring, shoe-mending and rope-making. In the case of some families (7.84%) belonging to this class, the impact of the sugar factory is actually adverse. This

is explained by the lack of proximity to the sugar factory.

The average increase in the money income of the non-agricultural families over the period was 125.20 per cent. It is found that the families belonging to lower income groups have benefitted less while the families belonging to higher income groups have benefitted more. For instance, for the families with annual income upto Rs. 1000/- the increase in income was only 52.67 per cent. On the contrary, the non-agricultural families with annual income above Rs. 7001 showed an income increase of 207.04 per cent. The average income of the families in the business of transport, hotel and grocery increased more than that of other non-agricultural families.

The standard of living of the families whose annual income is below Rs. 3000/-, more or less remained unchanged, while that of the non-agriculturists, whose annual income is between the range of Rs. 3001 to Rs. 10,000, improved to some extent. The standard of living of the families whose income is more than Rs. 10,000, increased substantially.

9.16 Thus we come to the conclusion that the establishment of the sugar factory helped most of the business of the non-agriculturists to flourish. It also stimulated the starting and/or expansion of new lines of business (e.g. hotel, transport, bicycle shop etc.). It also has noticeably improved the income position and standard of living of the non-agriculturist families.

From the foregoing observations we can tentatively say that the growth of agro-based industries generally leads to the decline of traditional business activities and the spread of modern business activities. Similarly, it seems that the increase in the standard of living shows a direct relationship with income ranges.

9.17 After the establishment of the sugar factory, some occupational, industrial and other changes like construction of roads, percolation tanks, etc., took place in the villages around the sugar factory. The analysis of the facts regarding spread effects is given in Chapter VIII.

It is observed that by undertaking agricultural development activities like lift irrigation, percolation tanks, dams, soil testing, supply of improved seeds, technological guidance to the activities etc., the factory helped in increasing agricultural productivity as well as in developing scientific attitude in the farmers.

The sugar factory has also provided an opportunity of subsidiary occupations like dairy farming. The production of by-products like alcohol by the factory has provided further employment to some people in this region. The construction of kaccha and pacca roads by the factory helped in increasing facilities for transport and communication.

Increase in money income of the people and their contact with cities due to the development of transport and communications are likely to make the villagers aware of the

money value of each commodity and the convenience of monetary exchange. This slowly reduces the extent of barter. The study brings out this fact also in clear terms.

By undertaking some schemes of social services, the factory has been trying to promote the social welfare of the people. The factory has donated for schools and colleges. It has established a dispensary on the factory site, which provides medical aid to the factory workers and to the people in the area.

9.18 Finally, we can say that the establishment of the sugar factory in a rural area works as a growth centre. It accelerates the economic development of the rural area surrounding it. More specifically it is evident that this transformation of a stagnant rural area into economically active and socially awakened region is the result of the expanding capital base (e.g. power, roads, irrigation), better utilisation of local resources and economic motivations of monetary exchange, urban contact and education generated by the establishment of an industrial enterprise such as a sugar factory. The only disquieting conclusion is that relatively to increase in the post-factory inequalities of income and wealth. The bigger landholders and business from the higher income brackets have benefitted more as compared to the smaller holders, landless agricultural labourers and persons in the traditional service sector in the rural areas. This finding must be taken into account by policy-makers interested in growth with justice.

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## APPENDIX I. LIST OF THE EXPERTS INTERVIEWED

Names of the experts who were interviewed in the beginning to understand the nature of the probable impact of sugar factories on a rural economy.

1. Shri Athavale,  
Manager, The Godavari Sugar Mills, Kanhegaon  
(Sakharwadi) Taluka Kopargaon.
2. Shri Borawake Shankarrao Narayanrao  
A progressive agriculturist from Shrirampur,  
Ex-Chairman, The Ganesh Co-operative Sugar Factory, Ltd.,  
Ganeshnagar, Taluka Kopargaon.
3. Shri Deokar Bagaji Kondaji  
Promoter of Sanjivani Co-operative Sugar Factory  
From Takali, Taluka Kopargaon.
4. Shri Dandawate H.K.  
Chairman, The Ganesh Co-operative Sugar Factory,  
Taluka Kopargaon.
5. Shri Gaikwad K.M.  
Chief Accountant of the Ganesh Co-operative Sugar  
Factory and a Progressive agriculturist from Korhale,  
taluka Kopargaon.
6. Shri Jagtap J.B.  
Agricultural Officer, the Ganesh Co-operative Sugar  
Factory, Ganeshnagar, Taluka Kopargaon.



7. Shri Kadam Annasaheb  
Progressive agriculturist from Devalali-Pravara and  
a Director of the Rahuri Co-operative Sugar Factory,  
Taluka Rahuri.
8. Shri Kadu Baburao K.  
A Progressive agriculturist from Rui and a Director  
of the Ganesh Co-operative Sugar Factory, taluka  
Kopargaon.
9. Shri Khilari Madhavrao  
A progressive agriculturist from Lauki, taluka  
Kopargaon.
10. Shri Lakmale D.R.  
Agricultural Officer of the Ashok Co-operative Sugar  
Factory, Ashoknagar, taluka Shrirampur.
11. Shri Patel J.N.  
Agricultural Officer of the Godavari Sugar Mills,  
Kanhegaon (Sakharwadi), Taluka Kopargaon.
12. Shri Patil P.D.  
Manager of the Bhenda Co-operative Sugar Factory,  
Bhenda, Taluka Newasa.
13. Shri Pawar Daulatrao  
Director of the Ashok Co-operative Sugar Factory from  
Punatgaon, Taluka Newasa.
14. Shri Sand (Rahatekar) Champalalji Indraaj  
Progressive Agriculturist from Rahata, Tal. Kopargaon.
15. Shri Shah B.P.  
General Manager of Shri Changdeo Sugar Mills,  
Puntamba, Taluka Kopargaon.

APPENDIX II. MONTHLY INFORMATION ON THE COMMODITYWISE PRICES AND THE QUANTITIES SOLD AS OBTAINED FROM THE MARKETING COMMITTEE OF KOPARGAON, TALUKA KOPARGAON, FOR THE YEARS 1961-62 AND 1975-76

- N.B. (1) Prices of all the commodities are in Rupees and their quantities are in quintals.  
 (2) Prices of sugarcane are collected from Kopargaon and Sanjivani Cooperative Sugar Factories.  
 (3) P = Price, Q = Quantities.

Year and month	Jowar		Bajara		Wheat		Cotton		Groundnut		Gram		Safflower		Gur		Sugarcane	
	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q
<u>1961-62</u>																		
July	42	3665	52	461	58	426	-	-	55	126	41	45	48	11	70	1390	-	-
August	40	3220	49	350	55	325	-	-	60	49	44	34	57	12	69	908		
September	48	2296	52	113	64	361	117	12	75	787	63	51	57	4	71	402		
October	46	2928	45	326	58	361	169	1066	73	2780	48	51	53	5	81	402	6	723820
November	48	5329	49	696	58	680	152	3125	95	3468	49	168	58	5	85	2888		
December	51	832	45	2766	52	297	152	6229	-	-	47	31	62	2	60	9166		
January	51	1130	45	2770	54	662	158	2210	63	65	46	83	50	14	50	14		
February	37	5280	40	947	56	557	131	1128	60	8	43	529	45	27	45	27		
March	35	10196	41	374	54	1734	-	-	62	6	45	668	46	471	46	471		
April	36	707	42	9	53	34	-	-	-	-	-	-	-	-	-	-		
May	38	16319	43	350	54	2159	-	-	64	24	45	318	53	180	53	180		
June	39	6213	44	296	52	764	-	-	76	55	47	210	54	95	54	95		
<u>1975-76</u>																		
July	183	1386	-	-	192	5386	-	-	90	222	196	196	175	11	-	-		
August	184	1711	-	-	211	7549	-	-	118	2470	172	190	190	14	-	-		
September	167	875	145	61	217	2759	400	12	190	1488	191	96	175	28	245	149	13.1	43343315
October	165	1748	137	1032	215	2865	400	1066	165	609	193	541	160	14	287	2898		
November	121	6465	130	550	209	1577	400	3125	175	144	200	315	161	20	174	4042		
December	114	4309	117	250	222	880	400	6229	200	8	191	136	124	3	160	2047		
January	105	2909	111	111	225	795	400	2210	175	13	185	198	99	6	145	2207		
February	121	3566	104	202	281	1042	400	1128	165	36	170	1205	127	153	145	1118		
March	135	7097	91	13	141	5649	-	-	150	21	145	758	153	28	140	805		
April	143	5519	125	25	140	13060	-	-	175	23	128	327	135	65	183	327		
May	133	4330	105	12	131	10652	-	-	200	63	120	237	167	13	170	212		
June	147	4426	113	93	147	12930	-	-	200	82	131	165	-	-	181	115		

APPENDIX III. RETAIL PRICES OF SELECTED COMMODITIES FROM THE YEARS 1962-63 AND 1974-75

The prices of commodities on the basis of which the relative change in the price level was calculated to estimate the change in the real income of the agricultural labourers.

Commodities	Quantities Kg.	Average Retail Prices in Rupees	
		1962-63	1974-75
1. Wheat	1	0.64	2.20
2. Jowar	1	0.47	0.74
3. Bajara	1	0.47	0.56
4. Gram	1	0.57	0.67
5. Chillies (dry)	1	2.95	7.33
6. Rice (Medium)	1	0.75	3.30
7. Sugar	1	1.15	2.15
8. Turdal	1	0.80	3.25
9. Gur	1	0.83	2.12
10. Groundnut-oil	1	2.04	9.14
11. Tea	1	7.11	14.73
12. Dhoti (Medium)	1 Pair	10.74	31.50
13. Sari	Single	19.24	35.48

Source: (1) District Statistical Abstract, Ahmednagar 1962-63, pp. 50, 51, 53.

(2) District Statistical Abstract, Ahmednagar 1974-75, pp. 151, 152, 153.

APPENDIX IV. IMPACT OF SUGAR FACTORY ON THE ECONOMIC CONDI-  
TIONS OF FARMERS

QUESTIONNAIRE-I

- I. Full name of the farmer:  
 Name of the village:  
 Educational Qualifications:  
 Age:
- II. Total members in the family:  
 Male                      Female                      Children
- III. Number of employed members of family:  
 Their monthly income:
- IV. Information regarding Land, Wells, Building and  
 Agricultural implements

Particulars	Before the establish- ment of the sugar fac- tory	After the establish- ment of the sugar fac- tory
1. Land		
A. Total holding		
(i) Area under well irrigation		
(ii) Area under canal irrigation		
(iii) Area under irriga- tion by other sources, if any		
(iv) Total irrigated area		
B. Unirrigated		
C. Fallow		

Continued/..

Particulars	Before the establish- ment of the sugar fac- tory	After the establish- ment of the sugar fac- tory
2. Wells		
(i) In Good condition		
(ii) Dilapidated (not in use)		
3. Residential Buildings		
(i) In good condition		
(ii) Medium		
(iii) Dilapidated		
4. Agricultural Implements		
(i) Plough		
(ii) Harrow		
(iii) Seed-driller		
(iv) Mhot		
(v) Bullocks		
(vi) Oil engine		
(vii) Electric Motor		
(viii) Truck		
(ix) Tractor		
(x) Bulldozer		
(xi) Other implements, if any		

### V. Secondary Occupations

Name of the occupation	Before the establish- ment of the sugar fac- tory	After the establish- ment of the sugar fac- tory
A. Dairy		
Cows		
Buffaloes		
She-goats		
Sheep		
B. Poultry		
C. Other Occupations		

### VI. Information of Net Income

Sources of Income	Income before the factory	Income after the factory
1. Land		
2. Service		
3. Agricultural Implements		
4. Machinery		
5. Sale of well water		
6. Secondary occupation		
7. Other sources, if any		

## VII. Can you get agricultural implements and other inputs?

From whom? (Please fill in the table)

Particulars of the agricultural implements and inputs	Before the sugar factory			After the sugar factory		
	Yes	No	Source	Yes	No	Source

## VIII. Agricultural Credit

Source of Credit	Proportion of credit	
	Before the factory	After the factory
1. Commercial Bank		
2. Land Development Bank		
3. Co-operative Bank		
4. Co-operative credit society		
5. Money lenders		
6. Relative and friends		
7. Lands Lords		
8. Sugar Factory		
9. Other sources, if any		

IX. Area under various crops and total income from the source

Name of the crop	Before the establishment of the factory			After the establishment of the factory		
	Area	Cost	Total Income	Area	Cost	Total Income
1. Sugarcane						
2. Cotton						
3. Groundnut						
4. Wheat						
5. Bajara/Jowar						
6. Fruits						
7. Vegetables						
8. Other crops, if any						
Net Income		Rs.			Rs.	

X. Whether you adopt Modern Methods of Farming?

Methods of Agriculture	Yes	No	Since when
1. Single crop in a year			
2. Two/three crops in a year			
3. Use of hybrid seeds of jowar/Bajara			
4. Use of improved varieties of wheat			
5. Use of hybrid seed of cotton			

Continued/..



Methods of Agriculture	Yes	No	Since when
6. Use of insecticides before sowing			
7. Use of green manure			
8. Use of chemical fertilizers			
9. Use of insecticides, pesticides after sowing			
10. Scientific method of irrigation			
11. Mechanical farming			
12. Use of compost manure			
13. Other methods, if any			

#### XI. Household equipments

Name of the equipment	Before the establishment of the sugar factory (Nos.)	After the establishment of the sugar factory (Nos.)
1. Bicycle		
2. Motor Cycle		
3. Car		
4. Fan		
5. Heater		
6. Fuel gas		
7. Refrigerator		
8. Table		
9. Table		
10. Chairs		
11. Radio		
12. Other equipment, if any		

## XII. How do you make use of income?

- (a) Development of land like levelling, bunding, digging up wells, etc.
- (b) Purchase of land
- (c) Purchase of shares of sugar factory, of co-operative society, Bank and of the other Institutions.
- (d) Deposited in a Bank
- (e) House construction in village/city
- (f) Purchase of furniture
- (g) Other use, if any

## XIII. What benefits have you received since the establishment of the sugar factory

- |  |        |
|--|--------|
| 1. Increase in communication   | Yes/No |
| 2. Availability of loan in time  | Yes/No |
| 3. Crops in view of Securing higher income   | Yes/No |
| 4. Availability of agricultural implements in time   | Yes/No |
| 5. Growth in business  | Yes/No |
| 6. Availability of Jobs  | Yes/No |
| 7. Availability of educational facility  | Yes/No |
| 8. Availability of educational loans   | Yes/No |
| 9. Availability of medical aid   | Yes/No |
| 10. Availability of agricultural implements from the sugar factory   | Yes/No |
| 11. Benefits of the following schemes of the sugar factory:<br>Truck, Tractor, Motorcycle, Blasting Machine, Lift irrigation, Land development scheme, crop competition scheme, etc. | Yes/No |

APPENDIX V. IMPACT OF THE SUGAR FACTORY ON THE ECONOMIC  
CONDITIONS OF NON-AGRICULTURISTS

QUESTIONNAIRE II

I. Full Name of the non-agriculturist:

2. Age:                      Educational qualifications:

Name of the Village:

II. Total members in the family:

Male

Female

Children

III. Occupation:                      Annual Income:

IV. Is any one from the family employed? Where?

Monthly income from the service:

V. Has your income increased owing to the establishment  
of the sugar factory?

If so, how much

VI. House-hold Equipments:

Name of the equipment	Before the establish- ment of the sugar factory (Nos.)	After the establish- ment of the sugar factory (Nos.)
1. Table		
2. Chair		
3. Fan		
4. Cot		
5. Heater/gas		
6. Refrigerator		
7. Radio		
8. Almirah		
9. Bicycle		
10. Motor cycle		
11. Car		
12. Other equipment, if any		

## VII. Residence:

- (a) In good condition
- (b) Medium type
- (c) Dilapidated

## VIII. Impact of the sugar factory on business:

- (a) Impressive
- (b) Moderate
- (c) Adverse
- (d) No-Impact

## IX. Use of Income

- (i) Investment in business
- (ii) Construction of house in village/city
- (iii) Reserved for new business
- (iv) Deposited in bank
- (v) Lending purpose

X. Have you started a new separate business due to the establishment of the sugar factory? Which?

## XI. What benefits have you received since the sugar factory?

- |  |        |
|--|--------|
| (i) Increase in transport                                    | Yes/No |
| (ii) Availability of loan in time                            | Yes/No |
| (iii) Increase in business attitude                          | Yes/No |
| (iv) Increase in Trade and Commerce                          | Yes/No |
| (v) Availability of jobs                                     | Yes/No |
| (vi) Availability of educational facility                    | Yes/No |
| (vii) Availability of loan for education                     | Yes/No |
| (viii) Availability of medical facility                      | Yes/No |
| (ix) Benefits received from new schemes of the sugar factory | Yes/No |

APPENDIX VI. IMPACT OF SUGAR FACTORY ON THE ECONOMIC CONDI-  
TIONS OF LABOURERS (AGRICULTURAL AS WELL AS  
THOSE IN THE SUGAR FACTORY)

QUESTIONNAIRE III

I. Full name of the labourer:

Designation:

Native Place:

Age:

Educational Qualifications:

II. Name of the factory/owner under which/whom you are employed at present:

III. Information about the family

(A) Total members in the family

Male

Female

Children

(B) School-going children

Primary

Secondary

Collegiates

IV. Original Occupation:

V. Reason for migration:

VI. Whether a landholder?

If so, how many acres?

Who cultivates the land?

VII. Monthly salary

Income from other sources

VIII. What other benefits do you obtain in addition to your wages?

(a) Bonus

- (b) Overtime
- (c) Foodgrains at fair prices
- (d) Medical aid
- (e) Educational facility for children
- (f) Residential accommodation at minimum rates/free
- (g) Other facilities if any

IX. Nature of work

- (A) Permanent/seasonal/temporary/on daily wages
- (B) How many hours do you have to work?
- (C) How do you go to the place of work?

Whether on Foot/bicycle/motor cycle/S.T. bus.

- X. (A) How many members of your family are the share-holders of the sugar factory (    ) Workers credit credit society (    ) Co-operative credit society (    )
- (B) Are you a member of any trade union? Which?
- (C) How many problems of yours have been solved by the Trade Union?

- (i)
- (ii)
- (iii)
- (iv)

XI. Standard of living

Particulars of the standard of living	Before the establishment of the sugar factory	After the establishment of the sugar factory
---------------------------------------	---	--

In daily diet

Wheat  
Jowar/Bajara  
Rice

Particulars of the standard of living	Before the establishment of the sugar factory	After the establishment of the sugar factory
---------------------------------------	---	--

Fruits  
Milk  
Eggs  
Other

(B) Garments

Cotton  
Coarse cloth  
Standard cotton  
Terrycotton  
Terelene  
Woollen  
Silken

(C) Household equipments

Radio  
Fan  
Cot  
Table  
Chairs  
Refrigerator  
Gas/Electric heater  
Bicycle  
Motor cycle  
Car  
Other equipment, if any

XIII. For what other purpose do you make use of your income apart from the daily family expenditure?

- (a) Construction of house in village/city
- (b) Purchase of land
- (c) Purchase of shares
- (d) Bank deposit
- (e) Purchase of Furniture
- (f) Other purpose, if any.

XIII. What benefits have you obtained since the establishment of the sugar factory?

(1) Increased Transportation

(2) Availability of employment

(3) Educational Facility

(4) Availability of loan for children's education

(5) Availability of medical facility

XIV. Are there any problems?

If so please state in brief.



APPENDIX VII QUESTIONNAIRE FOR THE SUGAR FACTORYQUESTIONNAIRE IVI. General Information

- (i) Name of the sugar factory:
- (ii) Date of registration:
- (iii) When did the factory start its first crushing season?
- (iv) Information about the crushing capacity of the sugar factory:

Year	Crushing capacity (Metric Ton)	Remarks
1963-64		
1964-65		
1965-66		
1966-67		
1967-68		
1968-69		
1969-70		
1970-71		
1971-72		
1972-73		
1973-74		
1974-75		
1975-76		

## II. Shareholders

Year	Producer share-holders (Nos.)	Non-producer shareholders		
		Cooperative societies	Individual	Government of Maharashtra
1962-63				
1963-64				
1964-65				
1965-66				
1966-67				
1967-68				
1968-69				
1969-70				
1970-71				
1971-72				
1972-73				
1973-74				
1974-75				
1975-76				

## III. Price paid for sugarcane

Year	Price declared by Government	Price actually paid by the factory	Remarks
1963-64			
1964-65			
1965-66			
1966-67			
1967-68			
1968-69			
1969-70			
1970-71			
1971-72			
1972-73			
1973-74			
1974-75			
1975-76			

## IV. Information about the area of sugarcane crushed.

Year	Area under canal irrigation	Area under well irrigation	Area under lift irrigation (acres)	Total area (acres)
1963-64				
1964-65				
1965-66				
1966-67				
1967-68				
1968-69				
1969-70				
1970-71				
1971-72				
1972-73				
1973-74				
1974-75				
1975-76				

## V. The means of transport obtained.

Year	Local			Outside			Please state the names of region and the village from which the means are made available
	Trucks	Tractors	Bullocks	Trucks	Tractors	Bullocks	
1963-64							
1964-65							
1965-66							
1966-67							
1967-68							
1968-69							
1969-70							
1970-71							
1971-72							
1972-73							
1973-74							
1974-75							
1975-76							

VI. (A) What type of services do you provide to harvesting labourers:

(1)

(2)

(3)

(4)

(5)

(B) Have you planned to help them in future? If so please state:

(1)

(2)

(3)

(4)

(5)

VIII. Information regarding the welfare activities undertaken by the sugar factory for its share-holders:

Year	Name of the scheme implemented	Remarks

VIII. Information about the workers of the sugar factory

(A) Classification of workers

Year	Permanent	Seasonal	Temporary	Total
1962-63				
1963-64				
1964-65				
1965-66				
1966-67				
1967-68				
1968-69				
1969-70				
1970-71				
1971-72				
1972-73				
1973-74				
1974-75				
1975-76				

## (B) Migration of labourers

---

Local, from the area of the factory	From Kopar- gaon taluka other than local	From Ahmednagar district other than Kopargaon taluka	From other districts of Maha- rashtra	From States other than Maharashtra
---	---	---	--	--

---

X. (A) What are the welfare activities undertaken by the sugar factory for workers?

- 1.
- 2.
- 3.
- 4.
- 5.

(B) Please state the schemes of the welfare activities which are to be implemented in future for the workers.

- 1.
- 2.
- 3.
- 4.

(C) Whether the factory experiences shortage of labourers?

(D) What are the general complaints of the workers against the management?

- 1.
- 2.
- 3.
- 4.

(E) What schemes out of the following the factory is implementing at present?

Name of the scheme	Since when	Remarks
1. Dairy		
2. Poultry		
3. Paper-mill		
4. Production of fertilizers		
5. Distillery		
6. Servants Co-operative Credit Society		
7. Cooperative housing society		
8. Other schemes, if any		

XI. Roads constructed by the factory

Year	Pucca-Roads		Expenditure incurred	Kachha-Roads		
	Name of the Roads	Mile-age		Name of the Roads	Mile-age	Expenditure incurred
1962-63						
1963-64						
1964-65						
1965-66						
1966-67						
1967-68						
1968-69						
1969-70						
1970-71						
1971-72						
1972-73						
1973-74						
1974-75						
1975-76						

APPENDIX VIII. QUESTIONNAIRE FOR HEADS OF THE VILLAGE  
PANCHAYATS (SARPANCH)

QUESTIONNAIRE V

I. Name of the Sarpanch:

Age: Educational Qualifications:

Name of the Village:

Population of the Village:

II. How many people are shareholders of the sugar factory from the village?

III. Economic Change in the village

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Particulars	Before the establish- ment of the sugar factory (Nos.)	After the establishment of the sugar factory (Nos.)
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A. Occupations

- (i) Grocery shops
- (ii) Cloth shops
- (iii) Grain sellers shops
- (iv) Saloons
- (v) Tailoring firm
- (vi) Shoemakers' shops
- (vii) Cycle Mart
- (viii) Hotel
- (ix) Small-scale industries
- (x) Money lenders

Contd/....

- (xi) Poultry
- (xii) Dairy
- (xiii) Miscellaneous

## B. Institutions

### 1. Dispensaries and Hospitals

Private

Government

### 2. Veterinary

Before the estab-  
lishment of the  
sugar factory

After the estab-  
lishment of the  
sugar factory

### 3. Schools and Colleges

(a) Upto 4th Std.

(b) Upto 7th Std.

(c) Upto S.S.C.

### 4. Co-operative societies

### 5. Consumers Co-operative stores

### 6. Bank

### 7. Post Office

### 8. S.T. Bus Service

### 9. Miscellaneous

IV. Is there provision for drinking water?  
Since/before, the sugar factory?

V Is there barter system in the village?  
If so, is there any change in the system  
after the establishment of the sugar factory?



- VI. What benefits has your village obtained from the establishment of the sugar factory?
- (a)
- (b)
- (c)
- (d)
- (e)
- VII. Is there weekly market in your village?  
Since/before the sugar factory
- VIII. (A) For how many days were the agricultural labourers of the village getting employment in a year before the establishment of the sugar factory?
- (B) For how many days at present?
- X. (A) What was the daily wage rate of the agricultural labourers before the establishment of the sugar factory?
- |      |        |          |
|------|--------|----------|
| Male | Female | Children |
|------|--------|----------|
- (B) What is the daily wage rate of the labourers at present?
- |      |         |          |
|------|---------|----------|
| Male | Females | Children |
|------|---------|----------|