

CHAPTER V

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CHAPTER V
INDUSTRIAL DEVELOPMENT AND DISPARITIES IN
SOLAPUR DISTRICT

5.1 INTRODUCTION

Industries are the key force to fast economic development in a region. Industrialization is the most predominant component of overall development strategies. Regional development on optimum industrial activity based on broader economic and strategic considerations; because it establishes equilibrium between the people and the heritage of the regions. It seeks the objective of conservation of limited and exhaustible resources for the benefit of prosperity. It also leads to an equitable distribution of employment opportunities, which remains no more confined to a few regions, dealing to wide disparities in per capita income among various regions. As a result, it also prevents out migration of skilled labor and capital and avoids accrual of depressed regions. Balanced regional development strategies also take in to account the problems of uneven growth of rural and urban areas, which is an acute and serious problem of the most of the developing regions. In most of the developing economies, traditional industries and rural artisans are rapidly disappearing due to change in demands pattern and inefficiency of the operation.

On the other hand, the modern industrialization is taking place mainly in the large urban centers. Consequently, better employment opportunities have been shrinking very fast in the rural areas not only in the regional study but also in the country; these economic activities which would otherwise serve as a catalyst of modernization are being monophysed in a few major cities. The need for dispersal of industries as a means of attaining balanced development of the economy as a whole

has been emphasized in the successive five year plans of India. It is expected that over a reasonable period, all the regions of the country would realize their potential for economic development and attain levels of living, not far below the national level. In this way the regional imbalances may be minimized in order to get the stage of equilibrium, as far as the economy is concerned.

Industrial development is the backbone of the economy in a region. Primary, secondary and tertiary sectors of the economy are the indices of the levels of development. Primary Sector does not need any kind of technical and higher education. While secondary and tertiary sectors require technical and higher education. The areas which are industrially developed result in urbanization and development of tertiary sector. Hence, the employment opportunities become easily available in industrially developed region. As a result, the per capita income enhances of the people, resulting in high standard of living of the people in such areas.

Solapur District is relatively better in industrial development than many parts of the Maharashtra State. It has been estimated that, there are one hundred and ten large and medium scale industries in the Solapur District. Unfortunately, out of the total industrial units, about twenty percent are sick because of the adverse effect of the shortage of the raw material, enough capital, skilled workers and miss management. As a matter of fact, Solapur district is poor in minerals and forest resources, hence, such types of resource based industries do not flourished in the Solapur district.

In the year 1962, Maharashtra industrial Development Corporation was established in the state. There are number of MIDC estates in

Maharashtra in the large and medium class cities. Fortunately, Solapur also has several MIDC estates, which are located at Solapur, Tembhurni and Kurduwadi. It has been proposed by the State Government that five new MIDC industrial estates will be added soon at Karmala, Akhuj, Mangalwedha, Pandharpur and Barshi. In addition to this, there are nine co-operative industrial estates which are found at Solapur, Barshi, Akhuj, Mangalwedha, Karmala, Mohol and Akkalkot. This clearly indicates that the Solapur District is better in industrial development than many parts of the state.

5.2 FACTORS INFLUENCING INDUSTRIAL DEVELOPMENT:

The industrial development is generally depends upon several factors. Among the various factors, the important factors are the availability of raw material, climate, water resources, labors, capital, power resources, transportation systems and market facilities. Apart from these factors, the efforts made by individual entrepreneurs, co-operative societies, industrial estates and Government efforts are enough for the growth of industries in a particular area. Indeed, these four agencies make efforts if individual and collective levels to make available all the necessary facilities for the industrial development. These create pre-conditions and infrastructure facilities which are essential for industrial development. Such efforts are applied in a region on scientific basis, than the proper utilization of resources is a possibility while developing and the region industrially. It is necessary to assess, whether the contemporary efforts put in, by these agencies are competent to use regional resources efficiently and optimally. Here an attempt is being made to understand and extent of the efforts put in, by the individual entrepreneurs, industrial, co-operative estates and Government for the development of industries in the Solapur district.

5.3 INDUSTRIAL EFFORTS IN SOLAPUR DISTRICT:

The most important objective of any industrial development programmes is to raise the per capita income of the people, which in turn is reflected in the high standard living of people. Therefore, industrialization is one of the powerful and effective tools for enhancing the level of regional economy. It is a observed fact, that entrepreneurs are the prime agents in the process of regional development. It is proven fact, that unless, the entrepreneurs properly organized, the skills and the resources of that region cannot be utilized efficiently, it's economic growth is bound to remain slow. Since entrepreneurs, who are the prime organizers of initiative and their responsibilities are regarded as a rare human race; their shortage is believed to have made the process of industrialization very slow.

Due to the major impediment rooted in the social structure itself and in the negativity of social system and in the value, which society attaches to different kind of economic activity consequently resulting in the lack of industrial leadership in a region like Solapur district. One of the best examples of social structure, in which rigid stratification of occupations represents a considerable barrier to industrial, expansion in regions of Solapur district. Industrial development efforts are made by the entrepreneurs for the rapid expansion of industries in any region, and Solapur district is no exception for this rule.

Co-operative movement has made very remarkable progress in Sugar industries in Solapur district. It is clear from the fact that nineteen are registered sugar factories in Solapur district in 2009. But due to various adverse effect of social and economic factors, only fifteen sugar industries are in working conditions in the Solapur district. Some textile mills also runs on co-operative basis in Solapur district. Though, there are

more than fifteen registered spinning mills, only less than five are efficiently working in Solapur district. This shows that the Solapur district has shortage of entrepreneurs. This shortage may be attributed to absolute poverty of the people and unwillingness of rich people to accept the challenging role of entrepreneurs. It has been observed that in most part of the industrial estates of the district the 'Marwadi' Community particularly belonging to Gujarat and Rajasthan who had long back migrated to Solapur district, have infact, established large, medium and small scale industries in the study region.

5.4 INDUSTRIAL REGIONS IN SOLAPUR DISTRICT:

Process of industrialization is started at global level in the year around 1860 in developed countries of the world. It shows that the concept of industrialization is not new one. It started more than one hundred fifty years ago. Though, the concept of industrial estate varies from region to region, various terms are used to denote the concept of industrial estates in different countries. For example in the United States of America, the industrial estates are termed as planned and organized tracts, districts or parks. On the other hand, in United Kingdom, these are known as Trading Estates, Industrial Estate and Industrial Zones.

An industrial estate has been defined as a tract of land which is sub-divided and developed according to a comprehensive plan for use of a community of industrial entrepreneurs. The emphasis of these entire concepts more or less has been placed on the some factors like provision of proper factory accommodation in advance of demand and other basic industrial prerequisite. However, the concepts used by planners have added two more facilities like technical and common facilities. There are number of agencies which provide land for the buildings and infrastructure facilities to the entrepreneurs. The sites for the industrial

development are some times either sold or leased out or rented. The industrial estates offers, basic required facilities to both for small scale and large scale industries.

The central Government of India has implemented five year planning programme in order to boost economy of different region in different sectors in India. For the first time, the programme of industrial estate was introduced in the second five year plan in Maharashtra state. At present, there are more than seventy industrial estates in Maharashtra out of these four industrial estates, are found in Solapur district alone which are as under :

- i) MIDC estate Akkalkot road Solapur city
- ii) MIDC estate Chincholi (North Solapur)
- iii) MIDC estate Tembhorni (Madha)
- iv) MIDC estate Kurduwadi (Madha)

It has been proposed by the state Government recently that, MIDC industrial estates will start functioning very soon at Karmala, Akluj, Mangalwedha, Pandharpur and Barshi tahsils Headquarters.

Apart from the MIDC areas, there are ten co-operative industrial estates in the district as given bellow.

- i. Solapur co-operative industrial estate, Solapur.
- ii. Sangola co-operative industrial estate, Sangola.
- iii. Barshi co-operative Industrial estate, Barshi.
- iv. Shankarrao Mohite Patil Co-operative Industrial Estate Akluj.
- v. Mangalwedha co-operative Industrial estate, Mangalwedha.
- vi. Santhnath Co-operative Industrial estate Vairag.
- vii. Kamaladevi co-operative industrial estate Karmala.
- viii. Chantramauli co-operative industrial estate, Mohol.
- ix. Swami Samarth co-operative industrial estate, Akkalkot.
- x. Pandharpur co-operative industrial estate, Pandharpur.

These industrial estates are distributed in different tahasils of Solapur district, along with four MIDC estates (Fig. 5.1)

CLASSIFICATION OF INDUSTRIES IN SOLAPUR DISTRICT

There are number of industries based on the need of the product in day to day life. These various types of industries may be grouped in as many as products are there. Because every products has it's own utility and value. There are large number of chemicals pharmaceutical industries making different kinds of medicines, iron and steel industries. However, in order to study various industries in Solapur district precisely, it is, most suitable to categories these industries in to two major groups namely:

- 1) Large and medium scale industries
- 2) Small scale industries.

Though, it is very difficult to take all the industries in to consideration. Hence, some important industries are taken for analysis purposes. Let's take, some important agro based industries first, such as sugar industries, spinning mills and edible oil industries etc.

5.5. LARGE AND MEDIUM SCALE INDUSTRIES IN SOLAPUR DISTRICT:

As stated earlier, for the convenience the industries of Solapur district have been grouped into two categories. The first category consists of large and medium scale industries; while second category into small scale industries. Now, some important large and medium scale industries are discussed.

5.5.1. SUGAR INDUSTRIES IN SOLAPUR DISTRICT:

In fact, there are nineteen registered sugar factory in the Solapur district out of these only seventeen sugar factories are functioning efficiently at present.

SOLAPUR DISTRICT

MIDC AND CO-OPERATIVE INDUSTRIAL ESTATES



Industrial Estates

	MIDC
	Co-operative Industries

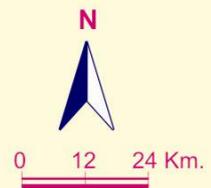


Fig. No.5.1

i) The Saswad Mali Sugar factory Ltd. Malingar -

This factory was established in the year 1932, at Malinagar in Malshiras tahsil under the act of 1913 company Ltd., act and almost ninety crores rupees are invested in this sugar factory. In the beginning, its production capacity was 1250 metric tones which increased to 2500 metric ton in the year 1998-1999. During the period 1988-1998 almost 60 villages were supplying sugarcane as raw material to this industry and it produced 1.75 lacs quintal sugar during the same period. After few years, this industry made tremendous progress, which is clear from the fact that in the 1991-92 it produced 2.26 lacs quintals sugar which declined substantially due to certain setback to 1.85 lacs quintal in the year 1994-95. This may be probably due to decline in the supply of sugar cane. However, the sugar factory took momentum and the production of sugar increased to 5.46 lacs quintals in the year 1995-96 and became as high as 7.08 lacs quintal in the year 2000-2001. This sugar factory is manufacturing the distillery, alcohol and bio-fertilizer on a large scale, about 30,000 liters per day of rectified spirit and almost 20,000 liters per day extra natural alcohol is manufacturing at the cost of around 18 to 20 crore rupees. Unfortunately, this sugar factory is suffering from bomber sugar cane production during the last few years. There are about around 850 workers engaged in this industry.

ii) Pandurang co-operative sugar factory Ltd. Shreepur –

This sugar factory started in 1933-34, under the act 1913 company act at Shreepur in Malshiras tahsil. In the beginning this sugar factory was known as the Brihan Maharashtra Sugar Syndicate Factory. Particularly, up to the year 1988 it was-a private sugar factory. A state farming used to provides, sugarcane to this factory up to 20 percent because, very few farmers were producing sugar cane in the jurisdiction

of the factory. Ujjani canal, Nira right bank canal and lift irrigation schemes provide water facilities with the sugar cane field. Fortunately, the factory was registered as a co-operative sugar factory on 21 October 1988 under the 1960 company act section 9.

There are six go down in this factory and more than 4200 members are providing sugar cane from 66 village located around this sugarcane factory. The production of sugar was estimated to 2.35 lacs quintal in year 1993-94 surprisingly, the sugar production capacity has increased up to 2500 metric tones probably, due to increase in area under sugarcane. Now more than 8400 member are providing sugarcane to this factory. It must be noted that, due to bumper sugarcane production around this factory, the extra sugar cane has been sent to other sugar factories located at Phaltan, Naldurg, Someshwar, Sakharwad and Georai Sugar factories. During the year 2000-2001, Sugar production was estimated to 5.5 lac quintals.

iii) Sahkar Maharshi Shankarrao Mohite Patil co-operative sugar factory, Akjul :

It started functioning in 1960-61 and located at Shankar Nagar near Akulj. It started functioning as Yashwant Sahkari Sugar Factory but, later on the name was changed to Sahakar Maharshi Sankarrao Mohite Patil co-operative sugar factory. During the year 1981-82, the sugar production capacity was estimated to 3000 metric tonnes. In the year 1981-82, there were 13356 sugar producing members which increased tremendously to 17059 sugar producing members. More than 120 villages are providing sugarcane as a raw material to this factory. And during the same period nearly 625421 quintal sugar was produced by this factory, which substantially increased to 983330 quintals in 2000-01. This factory is producing 82.24 lac liters Alcohol every year. At the same time, the bio-

fertilizer is also produced in a large scale by this factory. More than 1000 workers are engaged in this factory.

iv) Shree Shankar co-operative sugar factory, Sadashivnagar :

It has started functioning during the period 1966-67. During the period 1988-89, there were about 170 villages under the Jurisdiction of this factory, which increased to 339 during 2000-2001. Earlier, there were 2237 sugar producing members which surprisingly increased to 9167 member in the year 2000-01. In the beginning the sugar production capacity was 1250 metric tons, which has doubled and become 2500 metric tons, in 2000-2001. There are about 800 workers who are engaged in this factory.

v) Siddheshwar Sahkari Sugar Factory, Kumathe :

This factory was established 1969 but started functioning smoothly in the year 1971. The catchments area of the sugarcane as raw material provided from, North Solapur, Mohol, Tuljapur, Akkalkot and south Solapur tahsils. In the year 1987-88 there were 8042 sugarcane producing members whereas these increased to 10490 in the year 2000-2001. More than 380 villages are providing sugarcane as a raw material to this factory.

SOLAPUR DISTRICT

SUGAR INDUSTRIES



Location of Sugar Industries

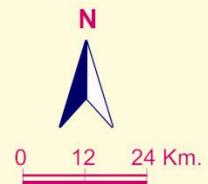


Fig. No.5.2

Table 5.1
Features of Sugar Factories in Solapur District

Sr. No.	Name of Sugar Factory	Tahsil	Year of Establish	Production capacity M.T.	Number of Employees	Number of Villages	Bio-products
1.	The Saswad Mali Sugar factory Led. Malinagar	Malshiras	1932	2500	850	60	Distillery, Alcohol, Bio-fertilizer
2.	Pandurang co-operative sugar factories Shreepur	Malshiras	1933-34	2500	750	66	Compost Manure
3.	Sahakar M. Shankarrao Mohite Patil co-operative Sugar factory, Akluj	Malshiras	1960-61	3000	1000	122	Bio-Fertilizer
4.	Shri. Sankar co-operative sugar factory, Sadashivnagar	Malshiras	1966-67	2500	800	169	Bio-Fertilizer
5.	Sidheswar Sahkari Sugar factory, Kumathe	Solapur North	1969	2500	750	120	Spirit Paper
6.	Vittal co-operative sugar factory, Gursale	Pandharpur	1975	3500	800	93	Distillery bio-fertilizer

7.	Bhogavati Sahakari Sugar Factories, Vairag	Barshi	1975-76	2500	350	86	-
8.	Bhima Sahkari Sugar Factory Takali Sikandar	Mohol	1975	2500	840	50	Bio-Fertilizer
9.	Shree Sant Damaji Sahkari Sugar Factory, Mangalwedha	Mangalwedha	1993	2500	730	73	Bio-Fertilizer
10.	Adinath co-operative sugar Factory, Shelgaon Balawani	Karmala	1993-94	2500	800	86	bio-fertilizer
11.	Indira Sahkari Sakhar Karkhana, Dahitane	Akkalkot	1990	2500	930	96	Bio-fertilizer
12.	Vittal Sahkari Sakhar Karhana, Pimpalner	Madha	2000	2500	920	65	Bio-fertilizer
13.	Sangola Taluka Sankar Sakhar Karkhana, Waki	Sangola	2002	1250	800	86	-

14.	Loknete Baburao Patil Anagarkar sugar, Anagar	Mohol	2001-02	2500	785	56	bio-fertilizer
15.	Lokmangal Sahkari Sugar Factory, Bibi-Darphal	Solapur North	2000-01	2500	500	73	Bio-fertilizer
16.	Chantrabhaga Sahkari Sakhar Karkhana, Bhalawani	Pandharpur	1998-99	2500	900	53	bio-fertilizer
17.	Makai Sahkari Sakhar Karkhana Ltd. Bhidarwadi	Karmala	2001-02	2500	780	68	Bio-fertilizer

Source : Based on the Field work.

The production of sugar cane was 443320 quintals in 1987-88, which increased to 688800 quintals in 2000-2001. As a result of it, the sugar production increased to grater extent in this factory. The factory has also started producing spirit, on a large scale which amount to 2807844 liters in the 1994-95 and substantially increased to 4196913 liters in 2000-2001. There is a bumper sugar cane production in the jurisdiction of thus factory area, in the year 2000-01.

vi) Vitthal co-operative sugar factory, Gursale :

This sugar factory started functioning in the year 1975. In the initial stage the production of sugar was less than 1000 metric tones

which increased to 1250 metric tones in year 1985-86 per day. At present, the production capacity has increased to 3500 metric tones per day during the period 2000-2001. There are 93 villages under the jurisdiction of the factory. In the year 1985-86, there was 4804 sugarcane producing members, which increased rapidly and became as high as 14185 members of sugarcane producing. The sugar production has also increased from 279397 in 1985-86 to 837477 quintals in 2000-2001. There are 15 godowns in the factory premises. It is worth mentioning that this factory has got gold medal in 1982-83 and again in 1985-86 for its better performance. Apart from this, one more award was given to this factory namely Diamond stated super selection in year 1986-87. At present, distillery manufacturing unit have seen started in this factory. There is a great enthusiasm among the farmers in the catchments area of this factory resulting in a very high sugar cane production which is beyond the capacity of this factory. Due to this reason this factory also provides extra sugarcane to the Atpati, someshwar Kavathe Mahankal. Almost 800 workers are engaged in this factory.

vii) Bhogavati Sahakari Sugar Factory, Vairag :

It is located at vairag in Barshi tahsil of Solapur district. It was established in the year 1974, and actually started functioning in 1975-76. Its working capital is more than 4 crores of rupees. Due to various setback, it stopped working in between due to the shortage of the sugarcane supply to this factory, adversely affected this factory in 1983-84, 1986-87 and 1992-93. During the year 2000-2001, there were 14875 sugar cane producing members. Production of sugar was 377450 quintals. In the initial stage the production of sugar capacity was only 1250 metric tones, which increased to 2500 metric tones in the year 2000-2001. It is

matter of surprise that this sugar factory was in net loss of rupees 978 cores by 31 March 2001.

viii) Bhima Sahkari Sugar Factory, Takali Sikandar:

This sugar factory was established in the year 1975 at Takali in Mohol tahsil of the Solapur district. In the years 1984-85, there were 50 villages under the jurisdiction of this factory. Initially crushing capacity was 1250 metric tones per day and 31365 quintals sugar was produced in the same year. During the period 1995-96 the factory worked for 230 days, where as in 1996-97 the factory was functioning only for 155 days. Therefore, sugar production declined from 458850 quintals in the year 1996-97 to 233035 quintals in 2000-01. At present, there are 7801 sugarcane producing members in the vicinity of this factory. At present the number of labors, who are permanently engaged in the service of this factory are about 840 persons. It produces bio fertilizer on a large scale.

ix) Shree Sant Damaji sugar factory Mangalwedha:

This factory was started on fifteenth February 1993. In that season above 1570 metric tones sugarcane was crushed and 265 quintal was produced in 1993. There was 8817 sugarcane producing members during 1993-94. The members increased to 2894 in 1998-99. During the, 2000-01, there were 73 villages under the jurisdiction of this factory. But, it is believed that about 106 villages are supplying sugarcane to this factory. There are four godowns in the factory premises. Vithal Sugar factory provides some sugarcane to this factory. The production capacity of sugarcane has increased to 2500 metric tones per day. More than 730 workers are engaged in the production of sugar in this factory. Besides, it also produces bio-fertilizer to a greater extent.

x) Adinath co-operative sugar factory, Shelgaon – Bhalavni:

Adinath sugar factory was established in the year 1993-94 and there were only 921 sugarcane producing member in the beginning. The sugar producing members, however, increased to 1470 in the year 2000-01. About 86 villages from Karmala and 12 villages from Zamkhed villages of the Ahamednagar district were supplying sugarcane to this factory; its crushing capacity of the sugarcane is 2500 metric tones. In 1993-94, factory worked only for 143 days due the shortage of sugarcane. For next few years factory improved it's conditions and while working 264 days per year. Now days, there is bumper sugarcane production in the jurisdiction of the factory. During 1993-94, about 119600 quintal sugar was produced which increase substantially and became as high as 466400 quintals in the year 2000-2001. Due to much production than the demand now days, the sugar factory is giving relatively less price per metric tons than many other factories in the district. About 800 workers are engaged in this factory. It also produces bio fertilizer which is consumed locally by the farmers.

xi) Indira Sahakari Sakhar Karakhana, Dahitane:

It is located in the Akkalkot Tahsil of Solapur district at Dahitane, This sugar factory was established in the year 1990, about 20 years before, from now. Initially, 18 crores rupees were invested for the establishment of sugar unit. Now days, there are 930 workers serving in this factory. Recently, during the period 2000-2001 above 4,00,000 metric tones sugarcane crushed and above 4,20,000 quintal sugar manufactured in same year. It also produces bio-fertilizer to a grater extent which is used in the jurisdiction of the factory in the field.

xii) Vithal Sahkari Sakhar Karkhana, Pimpalner:

This sugar industry was established during the period 1999-2000. Initially about 25 crores rupees were invested in this-factory. There are 4890 sugar cane producing members and more than 65 villages supplying sugarcane to this factory. More than 900 workers are engaged in this factory. During the period 2000-2001, about 432410 quintals sugar was obtained by this unit of sugar factory. It is worth mentioning that Ujjani Project is most beneficial to this sugar factory because, an abundant irrigation facility is responsible for affecting the high sugarcane production. Hence, there is no problem of raw material to this factory. More than 900 persons are engaged in the manufacturing of sugar. It also produces bio-fertilizer which is consumed in the area around the factory by the local farmers.

xiii) Sangola Taluka Sahkari Sakhar Karkhana, Waki:

This sugar factory was established very recently particularly during the 2001-02 and more than 20 crores rupees were invested in the established of this factory. More than 800 persons are engaged in the manufacturing of sugar in this factory. Surprisingly, during 2002 and 2003 only 2920 metric tons sugar cane was crushed and only 3030 quintals sugar was manufactured. Now days, the situation have improved because of the better supply of sugarcane by this factory.

xiv) Loknete Baburao Patil Anagarkar Sugar Factory, Anagar:

This factory was started very recently about a decade before in the year 2001-2002, at Anagar in Mohol Taluka of Solapur District. During the period 2001-2002 it manufactured – 1166350 quintals sugar which slightly increased for the next year and became as high 133750 quintals. More than 4500 members of sugar cane production are found in this

factory; more than 56 villages came under the jurisdiction of the factory which is supplying sugar cane continuously to this unit.

xv) Lokmangal Co-operative sugar factory, Darphal, North Solapur:

This factory was established during 2000-2001 and started functioning during the same year. About 28 crores rupees were invested in the establishment of sugar factory. More than 500 persons are engaged in manufacturing of sugar in this unit. In the initial stage, the sugar production of this unit was about 38138 quintals which increased to 426970 quintals in the year 2005-2006. There are more than 4570 sugar cane producing members from the 73 villages around this factory. The crushing capacity has increased to 2500 metric tones per day. Bio-fertilizer is the additional production of this factory.

xvi) Chandrabhaga Sahkari Sakhar Karkhana Ltd. Balawani:

This sugar industry is located at Bhalawni in Pandharpur tahsil of Solapur district. Initially, 415 lacks rupees were invested in the establishment of this factory, during the period 1998-99. There are 4200 members who, supply sugarcane to this unit particularly from the 53 villages under the Jurisdiction of this unit. In the year 1999-2000 sugar production was estimated 2,80,000 quintals which increased to 3581529 quintals in the year 2001-2002. More than 900 persons are engaged in this unit. The factory has sufficient supply of sugarcane from the vicinity of this factory.

xvii) Makai Sahkari Sakhar Karkhana, Bhidarwadi, Tal. Karmala :

It is located at Bhidarwadi in karmala tahsil of Solapur district. It has also started very recently about before a decade in 2001-2002. During the same year, the sugar production was 2305 quintals which increased to

224750 quintals in the year 2002-2003. There are about 3500 sugar producing members from different 68 villages around the factory. There are 780 workers who are engaged in the manufacturing of sugar in this factory. The sugarcane crushing capacity has increased up to 2500 metric tones per day. Due to improvement in sugar production in Karmala tahsil and adjoining tahsil of Usmanabad and Ahemadnagar districts are chief source of sugarcane supply. Hence, there is no. problem of shortage of sugarcane to this industry. Perhaps in future his factory has wide scope of increasing sugar production as abundant; raw material is available around it. It has been observed that the bio-fertilizer also is produced by this factory.

Apart from these, sugar co-operative factories, there are four more additional registered sugar industries in the Solapur district. Most of these sugar factories are under construction, and it is believed that with in a year or two, these industries will start functioning smoothly.

• PROBLEMS OF SUGAR FACTORIES IN SOLAPUR DISTRICT:

There are number of problems related with the production of sugarcane, production of sugar, problems of low prices of sugarcane, problems Bio products, faulty government policy and environmental pollution and skilled labor supply as well as, marketing problem to supply the products. It is better to take these problems one by one in order to understand the magnitude of the problems at root cause level. Among the various problems, the following important points are taken into consideration for development purpose, in order to improve and boost the sugar factories in Solapur district.

i) Problem of bumper sugarcane production:

In fact, the problem of bumper sugarcane production is not a serious problem because the surplus sugarcane production is not crushed within the time due; hence surplus sugarcane is sent to other factories away from the catchment areas of Solapur district. This kind of problem was faced by the Shankarrao Mohite Sugar Factory, Sadashivnagar, Shreepur and Chandrabhaga in recent past. Most of these factories run for 240 days, in the year even than entire sugar cane coming to these factories used to send to some other factories of Maharashtra. As a matter of fact, these factories are now in position to crush to all the sugarcane coming to these factories, because of some additional new units started recently in this area. Now days, the bumper production of sugarcane is not a problem because of demand by other unit in the area.

ii) Problems of Sugar production:

There is an imbalance between supply and demand of sugar in the state of Maharashtra. Some times adverse climate conditions affect the cane production which results in the low production of sugar. Some sugar factories located in Akkalkot, Sangola and Barshi tahsils face the problems of low yield of sugarcane, short period of crushing and unsuitable location of industries. The inadequate supply of sugarcane is root cause of low production of sugar in these industries. There is a need to encourage the farmers to produce enough cane instead of other crops.

iii) The problem of low prices of sugarcane:

The problem of low prices of sugarcane in certain factories is a very serious and acute because, the universal rate of sugarcane is not given to the farmers as a result of, low quality of the sugarcane and off season of the crushing of the sugar cane. Generally, the factories are

working more than half of the year but, some times farmers are not able to supply sufficient cane, during the peak period. Therefore, after the peak period some factories like Vitthal co-operative, Shankarrao Mohite Sugar factory, give the maximum benefit to farmers. But many other sugar factories give much lower prices to the farmers which is not sufficient for the farmers as regard to production cost of the cane. It is, therefore, necessary to increase the period of crushing for the cane and provide appropriate rate to the farmers.

iv) The problem of Bi-products:

The most important aspect of sugar industry is the full utilization of by products, special bagasses and molasses. Earlier, there was a very serious problem of by products because, bagassese were used as a fuel while sugar factories did not know what to do with the accumulating molasses which created a very serious environmental problem. In vicinity of sugar factory the bad smell created by molasses was a health hazard for the people. Fortunately, molasses is being used for manufacturing of alcohol and fertilizers, while bagasses are used for manufacturing power. Now a days, a number of sugar mills located in close proximity to each other are joining together to utilize by products fully and effectively. In this way, they bring down cost of sugar production which often helps to raise the economy of the factory.

v) Problems of supply of skilled and cheap labour:

The role of cheap and skilled labour is very important in the sugar factory. If, the labor available in the area of the sugar factory is skilled and cheap than the production of the sugar may be raised and the raw material is fully consumed on time. The mismanagement is infact, caused by the unskilled labours adversely affect sugar production.

vi) Marketing problems:

The mismanagement of the marketing system also sometimes creates a very serious problem because; an abundant store of sugar is not supplied properly to the needy people. As a result, it has been observed that certain elements are the greatest enemy of society, for their self interest to gain trifling profit, play a very tricky role, and consequently, collapse the system of supply for sugarcane to the required area. It has been observed that millions of tones of sugar is turned in to naught. This should be check and proper marketing system should be applied.

vii) Faulty Government Policies:

Government policies also play a very significant role in controlling the sugar prices. The central Government and state Government should take such a collective decision, so that the sugar prices should be kept at reasonable rate. Most of the sugar factories are infact, under the control of government. But some faulty Government policies give a net loss to the masses of the farmers. They suffer sometimes, to purchase the same product at higher cost while selling the cane at lower cost. This system is not in the interest of the industry as well. It is, therefore, necessary to fix a reasonable price of sugar cane so that farmers should get maximum benefit. There is urgent need to improve the Governments faulty policies, in order to eradicate manifold problems from the country.

5.5.2 Spinning Mills In Solapur District:

Spinning mill locally known as Soot Girini. The yarn which is manufactured from the cotton by the spinning mills are finally used to prepare the cotton clothes of different varieties. The cotton clothes have their own significance, since a very ancient period. Though, at present

there are many other products which are helping in manufacturing clothes of different variety, synthetic clothes are also available manufactured by different materials. In the Solapur district, there are 10 co-operative spinning mills and the eleven numbers of private spinning mills. In additions, there are fifteen more registered spinning mills in the Solapur district which are likely to start, but after a long period due to various political, social and economic reasons these have not been started functioning yet.

The following co-operative spinning mills are functioning in the district of Solapur.

- **Co-operative spinning Mills :**
 - i. Shankarrao Mohite Patil co-operative Soot Girani Pisewadi, Tal. Malshiras.
 - ii. Sharda Yantramag Vinkar co-operative Soot Girani Ltd., Kumbhari, Solapur.
 - iii. Mahatma Fule Anusuchit Jati Jamati Shetkari co-operative Soot Girani Ltd. Wagholi, Tal. Mohol.
 - iv. Shetkari co-operative Soot Girani, Sangola.
 - v. Swami Samarth Shetkari Co-operative Soot Girni, Walsang, Tal. South, Solapur.
 - vi. Yashwant co-operative soot, girni, Akkalkot Road, Solapur.
 - vii. Solapur Vinkar co-operative, soot girni, Solapur.
 - viii. Shri. Jagdmba Anusuchit Jati Vinkar co-operative Girni, Madha.
 - ix. Shetkari Mahila co-operative soot girni Ltd., Sangola.
 - x. Solapur Vikas co-operative soot girni, Akkalkot Road, Solapur.

- **Private Soot Gurnis are as given under :**
 - i. Dhayphule Ginning and soot girni Itphal, South Solapur.

- ii. Dhayphule Ginning and soot girni, Tandulwadi, South Solapur.
- iii. Cimco Tada Spinning mill, Solapur.
- iv. Niwas mill soot girni, Solapur.
- v. Prabhawati Soot girni, Makani Road, Solapur.
- vi. Mutgiri Soot Girni, Nilamnagar, Solapur.
- vii. Guntur Soot Girni, Nim nagar, Solapur.
- viii. Mahindra Soot Girni, Walsang, South Solapur.
- ix. Barshi Soot Girni, Barshi.
- x. Jam Mill Soot Girni, Solapur.
- xi. Shri. Niwas Spinning Mills, MIDC, Chincholi Tal. North Solapur.

Among, these, above mentioned spinning mills, the important five co-operative spinning mills have been visited by the investigator to understand the problem personally during the field work.

i) Shankarao Mohite Patil co-operative Soot Girni Ltd. Pisewadi, Tal. Malshiras:

Though, this unit was established in 1980, but it was really started during 1990-91, due to non availability of capital from the Government of Maharashtra, in the beginning, the cotton as a raw material is enough from the local area but, due to non predictable and erroneous nature of monsoon, the cotton production is adversely affected occasionally. There are 740 workers engaged in the manufacturing of thread in this factory. The total cost of cotton was 96233 lacs during the same period and total production of thread was 1548794 kilograms. The total members in the mill are about 7656. (Table 5.2)

Table 5.2
Features of Spinning Mills In Solapur District 2001

Sr. No.	Name of Spinning mill	Year of Establishment	Total Investment in Rs. Lac	Total Spindles	Number of workers
1.	Shankarrao Mohite co-operative Soot Girni Ltd. Pisewadi, Akluj Tal. Malshiras	1980	438.18 Lacs	2500	740
2.	Sharda Yantramag Vinkar co-operative Soot Girni Ltd. Kumbahir, Solapur	1990	272.80 Lacs	25000	855
3.	Mahatma Phule Anusuchit Jati-Jamati, Shetkari co-operative Soot Girni, Wagholi, Tal. Mohol	2001	237.85	14000	700
4.	Shetkari co-operative Soot Girni Ltd. Sangola.	1980	635.40 Lacs	45000	2000
5.	Shri. Swami Samarth Shetkari Vinkar Soot Girni, Valsang, Tal. South Solapur.	1979	459.18 Lacs	25000	1027

Source : Field work.

by the 31st March 1996. During 2000-01, this mill was in loss of rupee 82.37 lacs. Hence, this unit has purchased, 204 lacs k.g. cotton from cotton federation of Maharashtra state and above 2.27 lacs k.g. from other

states of India. Some of the important problems which are responsible for the low production of yarn are:

- i. Lack of raw material.
- ii. Lack of Skilled worker.
- iii. Irregular supply of electricity.
- iv. Lack of working capital.
- v. Lack of technical knowledge

**ii) Sharda Yantramag Winkar co-operative Soot Girni Ltd.
Kumbhari, Solapur :**

It is located in North Solapur tahsil at Kumbhari. On 28th August 1990, it was registered under Maharashtra co-operative institute Act. 1960. The State Government has given permission for 25000 spindles and investment of rupees 28 crores on 8th October 1993. There are 2293 members who supply the raw cotton to this co-operative unit. Due to fluctuation in cotton price, increase in electricity rate per unit, increase in prices of other materials, had same wages, and low price of yarn in the market, has resulted the mill in net loss by the 2000-01. Hence, about 48920 spindles were added in this unit during the next year. During 2001-2002 there were 137 lacs spindles but actually 721 lacs spindles were used for the work. This shows that only about 52 percent spindles are used due to the shortage of raw materials. It may be stated that the yarn production declined substantially during last few years, perhaps, due to shortage of cotton, fluctuation in electricity supply and low skilled labor. It is estimated that about 398 lacs rupees was of loss during the 1998-99, which increased 2442 lacs in 2000-2001. It is, therefore, needed that the proper management of this spinning mill is required, in order to flourish the mill in future.

iii) Mahatma Phule Anusuchit Jati-Jamati Shetkari co-operative Soot Girni, Wagholi, Tal. Mohol :

This spinning mill was established in 2000-2001 at Sharad Nagar, Wagholi, Tal. Mohol of Solapur district. It was started by Laxmanrao Dhobale a leader for the employment of backward community to raise their standard of living to greater extent. In 2001, there were 6000 spindles which increased to 14000 spindles and it is believed that now 25000 spindles are in use by 2005. There are 21926 members supplying cotton to this mills, out of the total members nearly 2037 were from schedule cast and schedule tribes community. It is worth mentioning, here, that more than 4000 lacs rupees were invested for land, building, and plant machinery and for other infrastructure. At present, there is capacity of mills above 1652187 kilograms cotton and produce about 1342520 kilograms soot by 2004-2005. More than 700 workers are engaged in spinning of the yarn in this mill, particularly from the backward community. Despite, net loss was borne by this mill during 2001 and 2002 of rupees 575 lacs. It is remarkable to note that this unit has exported standard soot to many other countries like Mauritius, Canada, Bangladesh, South Africa, South Korea and Egypt.

iv) Shetkari co-operative Soot Girni Ltd. Sangola :

It is located at Sangola, Tahsil of the Solapur district. Its foundation was laid down on 28th January 1980. But its machinery was fixed actually in the year 1984. There were 9376 member as on 31st March 2002. The unit invested 1434 lacs as fixed capital on the land, machinery, laboratory and many other assets. About rupees 1773 lacs was the initial working capital. But this amount was raised by taking loan from different banks, number of spindles used in the mill fluctuates from

year to year as a result of it, the production of soot also fluctuated from year to year. More than 2000 labors are working in these spinning mills. This unit is also facing number of problems like lack of labor, holiday problem, and irregular supply of electricity. Many time this factory is closed for which more than six percent labor are responsible for the BANDH spindles. And 15.75 percent labors were responsible for the bandh spindles in 2001-02.

This unit export soot to Ichalkarnji, Vita, Solapur, Bhiwandi and Malegaon. This unit is also facing number of problems as given below:

- i) Lack of skilled labor.
- ii) Shortage of best quality cotton.
- iii) Irregular supply of electricity.
- iv) High rate of electricity charges, per unit
- v) Shortage of working capital.
- vi) Low market prices.
- vii) Lack of market's demand.
- viii) Lack of cotton from the local areas.
- ix) Changing pattern of clothes due to new innovation.

v) Shri Swami Samarth Shetkari Co-operative Soot Girni (Walsang):

This co-operative spinning mill is located at Walsang in South Solapur Tahsil. This unit was registered under the Maharashtra co-operative Society Act. 1960 having its register number Samarth prg/A (Dated 14-11-1979) more than 1000 labors are engaged in the manufacturing of yarn in this factory. More than 459 lacs rupees were invested in the establishment of this co-operative spinning mill. The spindles capacity of this unit was 25000, which increased to 30,000 spindles in the year 2005. It has been estimated that this unit has a profit of rupees 1, 80,000 lacs during the 2004-2005. The cotton is supplied

from the near by areas of the spinning mills. There are about 7000 members supplying raw materials to this unit.

The major object of this Girni is to carry out the business of spinning and selling yarn, to the weavers and to other, with the purpose of producing best cotton. The board of this Girni is nominated for five years to administer the work. The mill has purchased 25.24 hectares land in order to smooth functioning to Girni. The factory has made available good building for the workers. At the same time, the mill has also built up to date canteen and rest room to all workers. All these factors have resulted in the efficient working of mill. The share holders of the mills are 3860 and total share capital is 459 lacs rupees. There are 157 machineries in all the department of the unit. Welfare activities for employee workers are sufficient. The mills has obtain best working performance award from the state of Maharashtra-co-operative spinning mil federation in the year, 1999-2000.

5.5.3 Refined Edible Oils and Fat Industries in Solapur District:

There are three units which are located in Chincholi MIDC area of Solapur district. These are as follow:

i) Khetan Solvent and Refinery Ltd., MIDC, Chincholi, Tal. North Solapur.

This unit was established on August 1992. About Rs. 4 crores was invested on machinery, Shed and other infrastructural requirement. There are 105 workers in this industry. Per year production capacity is 120 metric tones. Its production was 50 metric tones in 1998 whereas; it increased upto 55 metric tones in 2000-2001. (Table 5.3)

Table 5.3**Refined, edible oils and fats industries in Solapur district**

Sr. No.	Name of Oil Factory	Year of Establish	Total Investment	Number of Workers	Major Productions
1.	Khetal Solvent and Refinery Ltd. MIDC Chincholi, North Solapur	1992	4.00 crores	105	Refined edible oils
2.	Novcom Industries MIDC, Chincholi, North Solapur.	1993	4.88 crores	85	Vegetable fats, oils and their fractions
3.	Vanky Crud oil mill MIDC Chincholi, North Solapur.	1991	8.65 crores	149	oil and cake.

Source : Field Work.

ii) Navcom Industries, Chincholi, North Solapur:

Its products are vegetable fats, oils and their fractions. About Rs. 4.88 crores amount was invested in this factory and nearly 85 workers are serving in this unit. Total yearly production capacity is 55 metric tones. During 2000-2001 about 59 metric tones oil was produced by this unit. Sometimes it suffers by lack of raw material.

iii) Vanky Crude oil mill, Chincholi, Solapur:

It was founded in MIDC area of Chincholi, North Solapur Tahsil. Nearly Rs. 8.65 crores amount was invested in this unit and about 149 workers are engaged in this unit. Annual cake production cost is about of 50 lacs rupees, whereas oil production cost is of 2.5 crores rupees.

This unit suffers from the following problems.

- i) Lack of raw material
- ii) Proper marketing
- iii) Low marketing price for final product.
- iv) Irregular supply of electricity.

5.5.4 Textile Mills in Solapur District:

There are number of textile mills in Solapur district particularly in the city of Solapur. Due to various socio-economic and political reasons, numbers of large scale cotton textile mills have been closed down. Among these are, Laxmi and Vishnu Cotton Textile Mill, Solapur, Jam Shree Cotton mill Solapur, Narshing Girji Cotton Mill, Solapur and Juni Cotton Mill, Solapur.

However, still there are few mills functioning in the Solapur district. The important textile mills working are as under:

i) Volant Textile Mills, Solapur :

It is located in the Solapur city it self. It was established on 19th June, 1995. For establishment of this textile mills 2.50 crores rupees were invested and at present 220 workers are engaged in manufacturing of the textile clothes. This textile mills produces gray fabrics since the beginning of this mills. Apart from this, now a day mill has started manufacturing other variety of clothes particularly from 1997.

ii) Niwas Spinning Mills Ltd., Chati Galli, Solapur :

It is also located in the Solapur City in the Chatti Galli areas core of the city. It was established on 15th January 1993, but actual production

started in January 1997 after four years of establishment. Initially, rupees 1.5 crores were invested in establishment of this unit. At present, 125 workers are engaged in the manufacturing of clothes. This mill manufactures cotton yarn carded and combed during the period 2000-2001. This unit has received profit of rupees 30 lacs.

iii) Zingade Spinning Mills, Boramani, South Solapur :

It is located at Boramani about 10 Kilometers away from the Solapur city in South Solapur Tahsil. It was also established on second March 1993, where as it's actual production was started on 24 March 1995, it main production is cotton yarn. During 2000-2001, the total production cost of estimated more than 2 crores of rupees. This mill suffers from irregular supply of raw material and power supply. As a result of this, the mill is not running in profit till to day. More than hundred labors are engaged in the manufacturing of clothes in this unit.

iv) Janshri Ranjitsingh Spinning and Weaving Mill Co. Ltd. Fatechand Damani Nagar, Solapur :

This unit has been established in the Solapur city on 24th March 1993. Infact it is started manufacturing the clothes in September 1995. It's main product is processing wearing fabrics of cotton containing 85%, some time even more. It produces bedsheet, towels and chadars. It is seen that good quality products of mills is also exported to various countries like Africa and Europe. (Table 5.4)

5.5.5 Dairy Industries In Solapur District

Dairy industries are based on Agro Industry. Dairy industry plays on important role in economy of a particular region. It is based on a number of cattle's found in a region, particularly, of milk producing cattle. It is responsible for the improvement of economic conditions particularly of the poor people. Solapur district has good potential for the development of dairy industries. The areas which are predominant in

Table 5.4
Textile Mills in Solapur District

Sr. No.	Name of Textile Mills	Year of Establishment	Total Investment	Number of Workers	Major Productions
1.	Volent Textile Mills Solapur.	1995	2.5 crores	220	Gray Fabric
2.	Niwas Spinning Mills Ltd., Chatti Galli, Solapur	1993	1.5 Crores	125	Cotton yarn carted
3.	Zingata Spinning Mills, Boramani, South Solapur	1993	1.2 Crores	107	Cotton yarn
4.	Jamshri Ranjitsinhji Spinning and Weaving Mills co. Ltd. Damani Nagar, Solapur	1993	1.5 Crores	112	Bed sheets, Towels an Chadars.

Source : Based on the field work.

rural activities of primary sector have better potentiality for the development of dairy industry. In Solapur district particularly Malshiras, Pandharpur, Mohol, Madha, Sangola and some other tahsils have favorable climatic and social conditions, for the development of this industry. There are seven important milk chilling plants in the Solapur District. As far as investment amount is concerned, the Government milk dairy ranks first among the dairy plants. There is no vast difference in the investment amount of dairy. Chilling capacity of every plant is very high.

It ranges from 20,000 liters to 60,000 liters. Collection of milk per day is very low of Sudarshan Milk plant, whereas it is quite high for Sidharth Milk dairy. The unit collect merely 20, 000 liters milk per day, whereas Lokmangal Milk dairy collect about 15,000 liters per day. About 150 workers are engaged in Government milk dairy, on the contrary only 17 workers are engaged in Sudharshan Milk Dairy. (Table 5.5)

The case study has been carried out only for two important milk dairy plants as given below:

Table 5.5
Distribution of Milk Chilling Plants in Solapur 2001

Sr. No.	Name of the Plant	Investors in Rs. Lacs	Production capacity in liters per day	Collection of Milk perday in liter	No. of Labour
1.	Chandrabhaga Dairy, Wakhari, Pandharpur	150	50,000	10,000	17
2.	Kisan Milk Collection Natepute.	120	60,000	5,000	25
3.	Govt. Milk Dairy Solapur	550	50,000	11,000	150
4.	Shetkari Milk Dairy, Sangola	140	20,000	12,000	40
5.	Sudarshan Milk Plant, Mangalwedha	150	50,000	4,000	17
6.	Sidhanath Milk Dairy, Nandani, Tal. Mangalwedha	140	50,000	20,000	35
7.	Lokmangal Milk Dairy, Darphal, Tal. North Solapur.	120	30,000	15,000	25

Source : Based on the field work.

1. Solapur District Sahkari Milk production and Processing Sangh Ltd. Solapur:

It was established on 10th December 1981 in Solapur city. Collection of milk, processing of milk supplying fodder and food to the cows and buffalows there are various aims and objectives for this dairy. Surprisingly, all tahsils are included in this unit except Malshiras tahsil in Solapur district. There were 1291 dairies of this unit during 1991. Number of dairies increased from 1291 in 1991 to 1916 in 2003. (Table 5.6)

Table 5.6
Tahsilwise Distribution of Dairies in Solapur District

Sr. No.	Name of Tahsil	Number of Dairies	
		31-3-1991	31-3-2003
1.	North Solapur	30	49
2.	South Solapur	71	90
3.	Mohol	149	237
4.	Barshi	143	185
5.	Madha	276	417
6	Sangola	175	266
7.	Pandharpur	166	258
8.	Mangalwedha	91	144
9.	Akkalkot	36	45
10.	Karmala	154	225
	District Total	1291	1916

Source : District co-operative milk sangh.

The concerned table indicates that Akkalkot tahsil was having only 45 dairies in 2003. Malshiras tahsil has not participated in the Dairy.

North Solapur and South Solapur tahsils were having less numbers as compared to other tahsils, Madha was first (417) in respect of dairies and Akkalkot was last (45) in rank during 2003. Although, dairies has been increased, in each tahsil during the period 1991 to 2003. Particularly, dairies have increased on greater scale in Pandharpur, Sangola and Madha Tahsils of Solapur District.

- **Milk Collection:**

The table 5.7 gives an idea about milk collection of the plants. The buffalows milk was collected about 2 percent while, 98 percent was collected from cows and daily milk was collected 191532 liters in 1994-95, which increased with greater fluctuation and finally it became the same as are presented in the 2002-03 years. However total milk productions became more than double.

Percentage share of buffalows milk in collection, varies from 2 percent to 4.88 percent between 1994-95 and 2002-2003; Cow's milk percentage is constant from 1994-95 to 2002 2003, it was above 95 percent throughout the period above mentioned. Daily collection of milk was 1,81,532 liters in 1994-95, where as it increased to 3,75,858 liters in 2002-2003.

- **Milk Sale :**

Solapur district co-operative milk production and processing sangh distribute its milk after processing and pack in polythine bag. Unit distributes its milk in the Solapur city. It also sale milk to Akkalkot, Walsang, Pandharpur, Mohol, Barshi, Vairag, Sangola, Maindargi and Mangalwedha tahsils of the Solapur district. It also sale the milk to Osmanabad, Tuljapur, Paranda and Omerga tahsils of Osmanabad district. This unit sales milk to Gulbarga, Aland, Bijapur, Bagalkot,

Table 5.7
Milk Collection of Solapur District Co-Operative Milk Production
and Processing Sangh

Year	Collection milk in Liters		Total Milk Collection in liters	Buffalos Milk collection in Percent	Cow milk collection in percent	Daily average collection of milk in liters
	Buffalos	Cow milk				
1994-95	1309864	64949171	66259035	2.00	98.00	181532
1995-96	1306487	75839901	77146388	2.00	98.00	211360
1996-97	3036603	77507032	80543635	3.80	96.20	220667
1997-98	4363375	84926221	89289596	4.88	95.12	244629
1998-99	5083180	98804409	103887589	4.60	95.40	327178
1999-2000	5493810	113926209	119420019	4.60	95.40	327178
2000-01	5440936	119833613	125274549	4.34	95.66	343218
2002-03	2748989	134439343	137188332	2.00	98.00	375858

Source : District co-operative milk sangh.

Basavkalyan, Bidar, Humnabad, Sahabad, Wadi, Belgaon, Dharwad, Hubli and Goa. Particularly this unit sales milk in packed bags. The sangh

distributes milk through agents. There were 705 agents to distribute milk and milk products of the sangh.

During 1994-95 about 9583926 liters milk was sold out of the district of Solapur, whereas. 256980 liters milk was sold out of the Maharashtra state. During 1994-95 about 15074822 liters milk was locally sold. During 2002-2003 about 120 lacs liters milk was sold in Karnataka State, whereas 143 lacs liters was sold in local market, particularly in Solapur city. About 272605 liters milk was used for preparing cheese, Pedhe, Ice-cream, Shrikhand and Sugandhi Milk during 2002-2003.

- **Workers engaged in milk dairy**

There were 917 workers as on 31st March 1998, and total number of workers increased upto 1185 on 31st March 2003. About Rs. 498.77 lacs amount was spent on the employees during 2002-2003.

- **Problems of the Dairy :**

There are number of problems faced by this dairy every year. This dairy suffers from the following problems.

- i) Shortage of Fodder to Milking livestock's:** Particularly this problem arises in the summer season due to shortage of water supply. This problem seriously found in Madha, Sangola, Mahol, Karmala, Barshi and Akkalkot Tahsil of Solapur district.
- ii) Irregular Supply of Electricity:** This problem creates in every rainy and summer season.
- iii) Problem of Skilled Workers:** There is shortage of skilled worker in this dairy.
- iv) Lack of co-ordination:** Directors of this dairy belongs to various political parties, hence; there is lack of co-ordination among them. There is also less co-ordination between the various milk supplying centers.

2) Shivamruth Milk Sangh Akluj:

This milk production co-operative Sangh was started on 26th January 1976 at Akluj. To increase milk production, this Sangh has given motivation to the milk producer. Naturally, milk production increased to a greater extent. Milk is perishable commodity, hence, it should be immediately sent to the market. Therefore, Sangh has started chilling plant at Shankar Nagar. There are above 200 dairies member of Shivamruth Sangh. About 85047800 Rupees were made available as share capital as on 31st March 2003.

This sangh is limited only to Malshiras tahsil. Many Villages of the Malshiras Tahsil collect milk for the Shivamruth Dairy. There are 392 milk collection centers in Malshiras Tahsil. About 45 trucks are engaged in milk collection. These trucks collect milk from various villages especially in the morning and evening. After processed the milk is sent to New Mumbai, Pune, Latur, Nanded, Khamgaon and many other places.

SANGH has started PASHUKHADYA unit in 1982. The capacity of this unit was 80 metric tones. During 2002-2003, Sangh has produced about 267171 bags PASHUKHADYA. But only 259810 bags were sold to the milk producers during the 2002-2003. SANGH has also started medicine unit. The main objective of this unit is to provide medicine to the milk producer within time.

- **Problems:**

There are number of problems found by this dairy every year due to variation in climatic conditions, supply and demand of the milk in the market. Following are the important problems faced by this dairy.

- i. Shortage of milk supply in summer.
- ii. Problem of perishable milk.
- iii. Problem of quick transport.

- iv. Lack of co-ordination among directors.

5.5.6 Engineering Units:

At present, there are six engineering units in Solapur district. These are found around Solapur city area only, particularly located in Chincholi MIDC area and Akkalkot road MIDC area. There are six important units functioning at present in Solapur district. (Table 5.8)

i) Sarojini Steel Ltd. MIDC Chincholi Tal. North Solapur :

It started in Sept. 1993 and produces various articles of iron and steel. About 200 workers are engaged in this plant. About 2.36 crores rupees were invested in this plant. During 1999-2000, about 2.00 crores production cost was invested in this unit. Nearly, 26 lac rupees profit was obtained. Particularly, this unit produces articles of iron and steel.

ii) Sarojini Steel Company MIDC Chincholi, Tal. North Solapur:

Sarojini steel company has started its second unit in December 1995 in MIDC area Chincholi in Solapur North. Nearly 200 workers are engaged in this unit. This unit received 3 lac rupees as profit in the year 2000-2001.

iii) Precision Shell cast Ltd. Solapur :

It is situated in the MIDC, Akkalkot road area of Solapur. It was established on February 1998. Basically 1.09 crores rupees were invested in this unit. Nearly, 190 workers engaged in this factory. This unit produces articles of iron and steel. The production cost was 1.4 crore rupees during 200-2001. This unit received 19 lacs rupees in the year 2000-2001.

Table 5.8
Engineering Units in Solapur District

Sr. No.	Name of factory	Year of Establishment	Total Investment	Number of Workers	Major Productions
1.	Sarojini Steel MIDC Chincholi, North Solapur.	1993	2.36 crores	200	Articles of Iron and steel
2.	Sarojini steel company MIDC Chincholi, North Solapur.	1995 Second Unit	3.00 cores	2000	Articles of Iron and steel.
3.	Precision Shell cast Ltd., MIDC Akkalkot Road, Solapur	1998	1.09 crores	190	Articles of iron and steel
4.	Precision Camshafts Ltd., MIDC Akkalkot Road, Solapur	1998	7.28 crores	500	Transmissi on shafts Including Camshafts and crank sheets.
5.	Precision Camshafts Pvt. Ltd. MIDC Chicholi, North Solapur	1992	1.43 crores	180	Camshafts for tractors
6.	Chetal Foundries Ltd. MIDC Chincholi, North Solapur.	1997	3.62 crores	180	Cast Articles of Iron and steel.

Source : Field Work.

iv) Precision Camshafts Ltd. Solapur:

This unit was establishing in the MIDC area Akkalkot Road, Solapur in 1998. Particularly, it produces transmission shafts including cam shafts, crank sheets. About 7.28 crores were invested in this unit. Nearly 500 workers are engaged in this unit. The production cost of this unit was 2.6 crores in the years 2000-2001. This unit obtained 25 lac rupees in the year 2000-2001.

v) Precision Camshafts Pvt. Ltd MIDC Chincholi, North Solapur :

It was established on 7th September 1992. It produces camshafts for tractors. Nearly 1.43 crores were invested in this unit. About 180 workers are serving in this unit. During 2000-2001, the production cost of was 2.25 crores. In this year factory got 40 lac rupees profit.

vi) Chetan Foundries Ltd., MIDC Chincholi, North Solapur:

It was established in MIDC Chincholi areas of North Solapur. The Main Production of Factory was cast articles of Iron and Steel. It was established in 1997. About 3.62 crores rupees were invested in this unit, whereas 180 workers are engaged in the unit. Factory earned about Rs. 35 lacs profit during 2000-2001.

● **Problem of Engineering Industry :**

There are number of problems faced by this industry. The important problems of this industry are given below.

- i) Lack of skilled labor supply.
- ii) Raw materials supply.
- iii) Marketing
- iv) Supply of electricity.
- v) Low capital investment.
- vi) Unfavorable Government Policies.
- vii) High transportation Cost.

- **CONCLUSIONS :**

In short, it may be concluded that the large and medium industries in the Solapur district have, the bright scope in future, provided they should be given due attention by both Government and entrepreneurs.

i) Solapur district has better scope for co-operative sugar factories because; area under irrigation has increased to a greater extent. Therefore, sugar cane area and production has substantially increased in recent years. There is wide scope, for six to eight sugar factories so that problem of bumper sugarcane crop may be solved. Malshiras, Pandharpur some part of Mohol, Mangalwedha, Karmala, Madha and Akkalkot changed their socio-economic structure due to sugar industries to agriculture extent.

ii) There is wide scope for other agro-based industries in the Solapur district. There is heavy concentration of industrial units in Solapur City. It is essential to divert large and medium scale units from the city area to rural areas, so that industrial sector of the rural area may be developed in future.

iii) Swami Samarth co-operative Soot Girmi's productivity level was constant between 1999-2000. This unit paid entire loan within prescribed time. Due to its best working performance, it has obtained best working award by the Government of Maharashtra.

iv) Dairy industries have changed the standard of living of the poor farmers in the entire Solapur district. These poor farmers are getting weekly payment from dairy therefore; their purchasing power has increased to a greater extent. Increase in irrigation facilities, have increased area under fodder crops, as a result of it, milk production has also increased in all tahsils during the last few years.

5.6 SMALL SCALE INDUSTRIES IN SOLAPUR DISTRICT

INTRODUCTION:

This part of the research study, is associated with small scale industries in Solapur district. At the very outset, it is essential to understand the distinction between large and medium scale industries on the one hand, and small scale industries on the other. To the best of our understanding, large scale industries are those industries which have large number of workers engaged in the production of the goods and commodities. Hence, the production per unit is also very high and large. On the contrary, the small scale industries are relatively smaller in size and have smaller number of workers per industrial unit and hence, lower production in such industrial units.

In the preceding discussion, an attempt has been made to study the various features of large scale industries in the Solapur district. Now, it is most interesting to take in to consideration the various aspects of small scale industries in the region under study. Some important aspects, such as growth of small scale industries, index number of small scale industries, investment, and production cost and labor force have been discussed in this section.

The important small scale industries within the district of Solapur are included such as Dal mill, Oil mill, Textile, Forest based industries, Building, Lather, Rubber, Plastic, Chemical units, Engineering Units, Electric and Electronic units and many other miscellaneous industries. This part has also included the analysis of the industrial combination regions on the basis of Doe's method. It has also studied the number of small scale industries per 100 square kilometer area as well as per 1000 population. The classification concentration and diversification of small scale industries within the Solapur district have also been analyzed in this section.

Solapur district is known as cotton textile industrial belt in south eastern Maharashtra. Many products of this industry are exported to other countries of the world. Since, the Solapur district is poor in mineral as well as forest resources. But the region under study has good textile soil better drainage pattern, good means of irrigation and the infrastructure facilities are to certain extent good and favorable for the development of small scale agro based industries. The small scale industries play a very significant role in the economy of the region. It is chief source of income for many literates and educated people by providing employment. The development and growth of small scale industries certainly may improve economic condition of the people even in near future, both for rural and urban areas in Solapur district.

- **Growth and Development of Small-scale Industries:**

There are two method of understanding, the growth of small scale industries in Solapur district. The first one is the increase, in the number of small scale units during the period 1980-81, 1990-91 and 2000-2001. Secondly, increase in percentage of the industries given in the same period. This may be applied for the investment for the establishment and development of industries during the same period. In similar way the production capacity may also be assessed for the concerned period. Number of labors who are engaged in the unit can be assessed in the total number as well as in percentage. The growth the small scale industries has enabled us to understand the relative, growth of industries in the number of unit and it's percentage increase as well as during the last three decades. In the year 1980-81, there were 2110 small scale industrial units which have slightly increased for the next decade for 1990-91. However, there have been tremendous increases in the total number of small scale industries during 2000-2001. This may be probably due to the impact

Table 5.9
Growth of Small Scale Industries in Solapur District

Sr. No.	Units	Years			Change in percentage		
		1980-81	1990-91	2000-01	1981-91	1991-2001	1881-2001
1.	Number of small scale-units	2110	4238	9084	2128 (108.35)	4846 (114.35)	6974 (430.52)
2.	Investment in Lac Rupees	3798	8349	17308	4551 (199.82)	8959 (107.31)	13510 (455.71)
3.	Production capacity in Lac rupees	5655	14590	33002	8935 (158.00)	18412 (126.20)	27347 (583.59)
4.	Number of labors	6330	20430	62882	14100 (222.75)	42452 (207.70)	56552 (993.40)

Source : Field Work.

Figures in the brackets indicate percentage.

of new innovation and demand of various items in the market. Government policies have also boosted by providing capital at reasonable rate for the establishment of small scale units in the district of Solapur.

The assessment of growth of small scale industrial units may also be understood by calculating the percentage change, both which may be positive or negative. It is estimated during 1980-81 and 1991 period of 108.35 percent while 114.35 percent during 1991-2001 period. It means that during the last two decades the percentage change in the number of small scale industries has been of 430.52 percent. In other words their has been more than four time increase in the number of small scale units.

As far as the total investment in lac rupees is concerned, it increased from 3798 lac rupees in year 1980-81 to 8349 lac rupees in the

year 1990-91. It has increased about three times during the same period. The investment in lacs rupees has surprisingly increased more than five times during the concerned period, when it became as high as 17308 lac rupees in the year 2000-2001. Similarly, the percentage growth in investment was recorded 119.82 lac rupees during 1980-81 period, while 107.31 percent during 1990-91 period. Collectively the total growth in investment of rupees was 455.21 percent during the period 1981-2001.

The production capacity in lacs of rupees was estimated for entire small scale industrial units, 5655 lac rupees in 1980-81, which became as high as 14590 for the year 1990-91, for entire region under study. In the year 2000-2001, the production capacity was increased so rapidly that the figure has reached to 33002 lacs rupees. This shows a constant increase upward in terms of total capital obtained from all the small scale industries in the Solapur district.

Like wise the percentage was also calculated between the period 1980-81, 1990-91 and 2000-2001. The growth was of the order for the production capacity in lacs rupees of 158.00 percent during 1981-91 and during 1999-2001. Considering base year 1980-81 as 100 percent than the total increase was 583.59 percent during 1980-81 and 2000-2001.

The numbers of labors, who are actively engaged in the manufacturing in the small scale industries, are the best indicators for the development and growth of small scale industries in the years 1980-81. There were 6330 labors in the all small scale industries in Solapur district, which increased more than 3 times for the next decades and became 20430 in 1990-91. As a result of industrial revolution and demand of various articles both in local and state level markets has resulted in the high growth of labor which is clear from the fact, that became as high as 62882 in the year 2000-2001.

Table 5.10

Index Number of Units, Investment, Production Capacity and Labor Force In Percentage In Solapur District

Sr. No.	Years	Number of Units in percent	Investment in Percent	production capacity in percent	Labor force in percentage
1.	1980-81	100	100	100	100
2.	1981-91	200.85	219.82	258.00	322.74
3.	1981-2001	430.52	455.71	583.58	993.40

Source : Field work, Base Year considered as 100%

The percentage increase in the workers was very impressive during the concerned period, which became 993.40 percent during the period 1980-81, 2000-01. This increase may be attributed the high demand of labors in small scale industries in Solapur district.

From table 5.10 it is clear, that the number of small scale units have increased to grater extent within the Solapur district during the period 1981-2001. The percentage increased is recorded 430.52 percent during 1981-2001. This shows that the Government policies for the development of industrial sector, credit loan facilities have been provided to entrepreneurs by the various banks and funding agencies. Despites, other infrastructural facilities are quite favorable for the development of small scale industries.

Similarly, the investment in lac rupees has also increased to 455.71 percent for all the small scale industries for the region under study, during 1981-2001 periods. Increase the number of small scale units and the investment both have been responsible for high production hence,

production capacity in percentage has also increased to 583.58 percent during period 1981-2001, for the entire region.

Infact, it is not possible without less number of hands which are responsible for handling the machinery to produce goods and commodities from the various small scale industries. This is demand of time with growing population, if we consider 100 percent labor in 1981, than it became 322.74 percent in the year 1990-91. The continuous development in small scale industries has been witnessed from the fact that labor force has increased as high as 993.40 percent in the year 2001. It means that more than ten times labor force has increased in the small scale industries in Solapur district. Because, many other large scale industries have been closed, down due to various socio-economic and political reasons in Solapur district.

5.6.1. Tahsilwise Distribution of Small Scale Units in Solapur District:

In order to understand the spatial pattern of small scale industries in Solapur district; following important industries have been selected for the purpose of analysis.

A) DAL MILLS IN SOLAPUR DISTRICT :

During the years 1980-81, there were 170 Dal mills in the Solapur district. These were unevenly distributed in the study region. Out of the total Dal mills, about 54.06 percent Dal mills were found in North Solapur tahsil, below 5 percent Dal mill in each tahsil were found in Akkalkot, South Solapur, Mohol, Mangawedha, Pandharpur, Karmala, Madha tahsils during 2001. About 5 percent to 10 percent dal mills were found in Malshiras, Sangola and Barshi tahsil in the same period. Above 50 percent units were concentrated in North Solapur tahsil during 2001.

As table concerned, reveals that the numbers of units of Dal mills have increased during last two decades, substantially. In North Solapur tahsil net increase was of 141 units. Out of the total increase of Dal mills in the district, which were 250 units. It is worth mentioning here that Solapur city predominates in the industrial activities in the entire tahsil; have more than 50 percent Dal mills both in 1981 and 2001. (Fig. 5.3)

Apart from this, Barshi and Malshiras have also the number of Dal mills between 10 to 20 percent, it means, these two tahsils are the agricultural market centers and have local demand of the products. In the year 1981, most of the rest tahsils of the district, have shown, the number of Dal mills below the ten, probably due to the impact of Solapur city. However, the pattern was more or less similar in the year 2001, the North Solapur ranks first position and followed by Barshi. Fortunately, there have been no tahsil in the last category of below ten. It means that, there have been very impressive increase in the number of Dal mills in rest other tahsils of the district. (Table 5.11)

Apart from the number of Dal mills in the year 1981 and 2001 as well as net increase during the concerned period, another way of study of the Dal mill units has been adopted by calculating the percentage of Dal mills units in each tahsil of the district, both for 1981 and 2001. Similarly the percentage of change in the Dal mill unit has also been found out for each tahsil of the district in 1981 and 2001. (Fig. 5.3)

Table 5.11
Dal Mills in Solapur District

Sr. No.	Tahsil	no. of mills 1999	No. of mills 2001	in dal mills change	% units of dal mill 1981	% units of dal mills of the district 2001	% change in unit
1.	N. Solapur	86	227	141	50.59	54.06	2.64
2.	Barshi	18	36	18	10.59	8.57	2.00
3.	Akkalkot	03	10	07	1.76	2.38	3.33
4.	S. Solapur	08	18	10	4.71	4.29	2.25
5.	Mohol	08	20	12	4.71	4.76	2.50
6.	Mangalwedha	07	19	12	4.12	4.52	2.71
7.	Pandharpur	09	20	11	5.29	4.76	2.22
8.	Sangola	09	21	12	5.29	5.00	2.33
9.	Malshiras	10	22	12	5.88	5.24	2.20
10.	Karmala	06	14	08	3.53	3.33	2.33
11.	Madha	06	13	07	3.53	3.09	2.17
	District Total	170	420	250	100	100	2.74

Source : Office of the dist. Industrial centre Solapur.

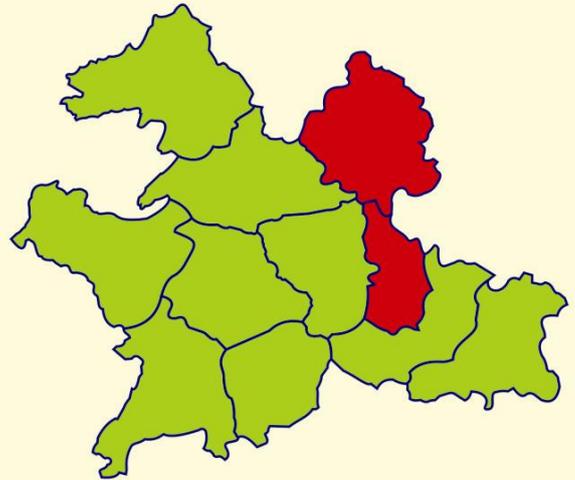
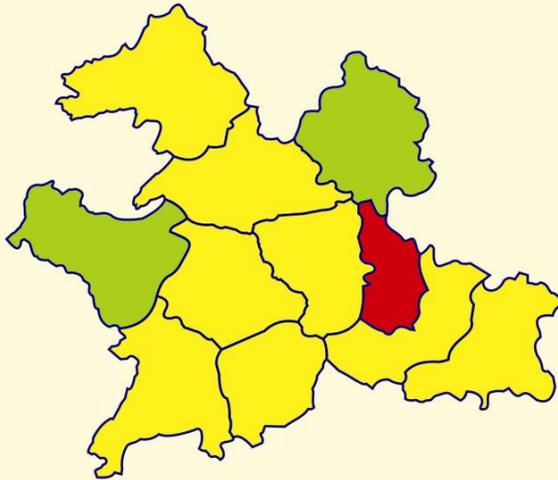
It reveals that more than 50 percent Dal mills units were located at north Solapur tahsil in 1981 and 2001 as well. In the year 1981, Barshi represented more than 10 percent Dal mill units while rest tahsils represented below 10 percent Dal mill units. Similar case has observed in the 2001, with expectations of Barshi tahsil which also has gone below the category of 10. The percentage change in Dal mill units represents around two percentage except the tahsil, Akkalkot where the number of Dal mill increased more than three percent. Overall, it may be concluded that there has been a rapid increase in the number Dal mill units in most

SOLAPUR DISTRICT

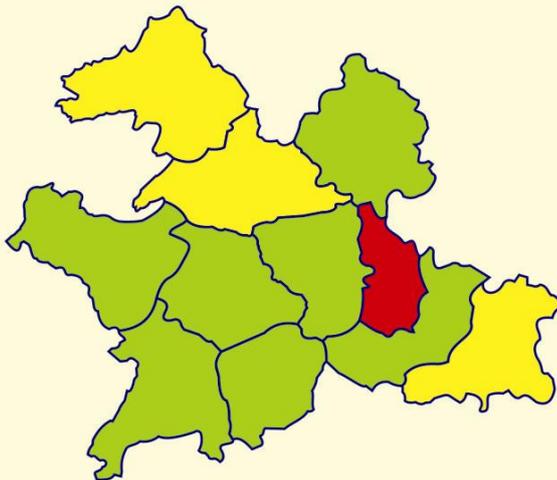
NUMBER OF DAL MILLS

1981

2001



Change in Percentage



Change in Number of Dal Mills

	Above 20
	10 - 20
	Below 10



14 7 0 14 28 Km.

Figure 5.3

of tahsils of the Solapur district. This shows that during the period 1981 and 2001, the demand of Dal has tremendously increased, probably due to high increase of dal.

B) OIL MILLS IN SOLAPUR DISTRICT:

The edible oils are the most significant product of the agro based industries. Various kinds of oils are used in day to day life by the people in their preparing the food, both for chapati as well as for vegetables. Hence, an oil mill occupies an important position in the study of industry. In the year 1981, there were 160 oil mills in Solapur district, distributed all over the region. The numbers of oil mills have substantially increased and became as high as 410 oil mills in 2001, for the district as a whole; this shows that there has been increase of oil mills more than 2.5 times in the region under study. (Table 5.12)

As stated earlier, there were 160 mills in the entire region, out of these 86 oil mills were located only in the North Solapur tahsil in the year 1981. This number of oil mills has gone up, and become 226 oil mills units in the year 2001. It is a very tremendous increase in the number of oil mills as net increase of oil mills was estimated to 140 during the last 20 years. In other words, more than 50 percent oil mills were found in the North Solapur tahsil due to the existence of Solapur city. The spatial pattern of the oil mills clearly shows that there has been the concentration of oil mill in North Solapur tahsil both in the 1981 and 2001. In the year 1981, there have been 4 other tahsils namely Akkalkot, South Solapur, Mohol and Barshi where the number of oil mills was between 10 to 20. Rest other tahsils of district fall in the category of below 10 edible oil mills.

However, in the year 2001, there has been a great change in spatial pattern of the oil mills because of rapid demand of the oils in day to day

Table 5.12**Oil mills in Solapur district**

Sr. No	Name of Tahsil	No. of oil mills 1981	No. of oil mills			% of oil mills in 2001	% of change 1981-2001
			Solapur 2001	Net increase of mill 1981-2001	% of oil mills		
1.	North Solapur	86	226	140	53.75	55.12	2.63
2.	Barshi	13	35	22	8.12	8.54	2.63
3.	Akkalkot	07	20	13	4.38	4.88	2.85
4.	S. Solapur	10	15	05	6.25	3.66	1.50
5.	Mohol	12	18	06	7.50	4.39	1.50
6.	Mangalwedha	02	08	06	1.25	1.95	4.00
7.	Pandharpur	13	20	07	8.13	4.88	1.54
8.	Sangola	06	22	16	3.75	5.36	3.66
9.	Malshiras	06	24	18	3.75	5.85	4.00
10.	Karmala	03	10	07	1.87	2.44	3.33
11.	Madha	02	12	10	1.25	2.93	6.00
	Dist. Total	160	410	250	100.00	100.00	2.56

life. In the year 2001, there were four tahsils namely, Barshi, Malshiras, Sangola along with North Solapur tahsil having more than 20 oil mills. Except, Mangalwedha, where the number of oil mills was below 10, rest other six tahsils consist of Karmala, Madha, Mohol, Pandharpur, South Solapur and Akkalkot where the number of oil mills was between 10 and 20.

The percentage change in oil mills in the various tahsils of the Solapur district represents positive change. This means that there has been increase in the number of oil mills in most of the tahsil during the

last 20 years. The tahsils which have shown above 3.50 increases in the oil mill are Malshiras, Madha, Sangoa and Mangalwedha. In the central part of district consist of Pandharpur and Mohol in the adjoining region of South Solapur the percentage increase was observed below 1.75. Rest other three tahsils, namely Karmala located in north western part of district Barshi in the northern, while Akkalkot in the eastern part of the district represent the percentage change in the oil mill between 1.75 to 3.50 percent. This may be stated that the oil mills are associated with the agro product hence; the increase was more impressive in the regions having better irrigation facilities. (Fig. 5.4)

C) FOOD PRODUCTS INDUSTRIES IN SOLAPUR DISTRICT

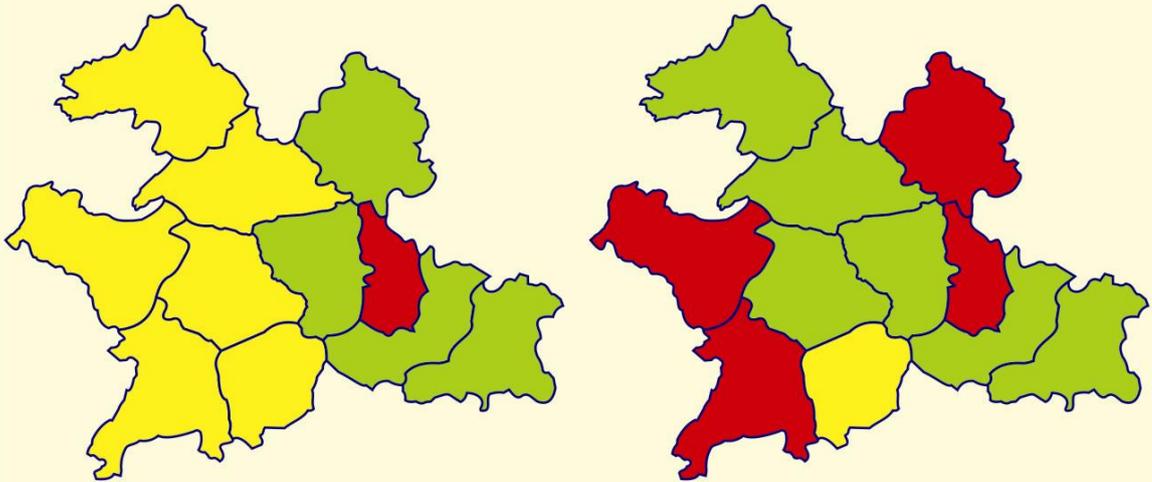
Food product industries are associated with the confectionaries. The chief products of food industries are of different kinds of biscuits, breads, cakes, toast and many other edible products in modern period, fast mode of life has resulted in the fast food products. In order to save time and energy, in the preparation and as well as in the preservation of the food products, it is the demand of the people to prepare various kinds of food products which may be used for longer period. Food products industries are such units, which manufacture different kinds of food product for the requirement of people in day to day life. The different kinds of development in modern periods have opened the manifold ways to fast and varieties of ingredients for the satisfactions of the people. The rapid growing population also needs the rapid growing food products.

SOLAPUR DISTRICT

NUMBER OF OIL MILLS

1981

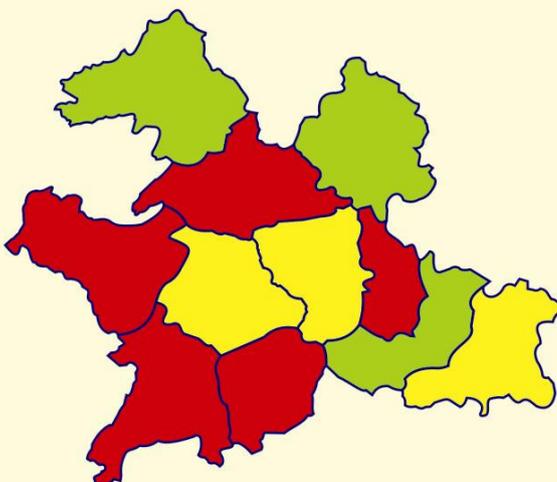
2001



Number of Oil Mills

	Above 20
	10 - 20
	Below 10

Change in Percentage



Change in Number of Oil Mills

	Above 3.50
	1.75 - 3.50
	Below 1.75

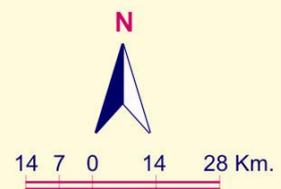


Figure 5.4

In order to fulfill the demand of the people related with the various kinds of the products, large numbers of food products industries are required. Because of the competition among the various food products, large numbers of food product units are being established in different parts of the Solapur district. In the year 1981, there have been 387 food products units; out of these around 60 percent are located only in the North Solapur tahsil, which are in number 230. Apart from this there are three more tahsils having sizable number of food product industries having 9 percent industries of the district particularly in the Barshi, Pandharpur and Mohol tahsil. These tahsils represent more than 35 food products units in Solapur district.

In the year 1981 the rest tahsil namely Karmala, Madha, Malshiras, Sangola, Mangalwedha, South Solapur and Akkalkot represented below 20 food products units.

In the year 2001, there were 532 food product units alone in the North Solapur tahsil. This constitutes around 63 percent food products units of the district. As matter of fact there have been 837 food products units in entire district, which were widely distributed in most of the tahsils of the Solapur district. (Table 5.13)

Pandharpur, Barshi have more than 60 units of food products, while Mohol has noticed declined in the manufacturing food product units in 2001. In other tahsils of the Solapur district there has been increase in the number of food product units during the 1981-2001, period, as table concerned reveals. The total increase in the number of food products units was highest for North Solapur tahsil where

Table 5.13
Food Products Units in Solapur District

Sr. No.	Name of Tahsil	no. of mills 1980-81	No. of mills 2000-01	Change in number of mills	% of unit 1980-81	% of units in 2000-01	% Change 1981 - 2001
1.	North Solapur	230	532	302	59.44	63.56	2.31
2.	Barshi	35	64	29	09.05	07.65	1.83
3.	Akkalkot	09	23	14	2.33	2.75	2.55
4.	South Solapur	19	20	01	4.91	2.39	1.05
5.	Mohol	35	18	-17	9.04	2.15	-1.94
6.	Mangalwedha	04	15	11	1.03	1.79	3.75
7.	Pandharpur	38	78	40	9.82	9.32	2.05
8.	Sangola	06	22	16	1.55	2.63	3.66
9.	Malshiras	05	38	33	1.29	4.54	7.60
10.	Karmala	03	13	10	0.77	1.55	4.33
11.	Madha	03	14	11	0.77	1.67	4.66
	District Total	387	837	450	100.00	100.00	2.16

Source : Office of the district Industries center Solapur.

its number was 303. It was followed by Pandharpur tahsil located in the central parts of the district. Except, Mohol tahsil, all other tahsils have recorded positive growth in the number of food products units as well as in percentage. Due to the existence of Solapur city, in North Solapur tahsil more than 60 percent units are found in an around of the city. The development of food products units have been represented in percentage as well as in number for both the years 1981-2001. And the percentage change has been positive in tahsils are the tahsils of Solapur district except Mohol where minus 1.94 percent declined was recorded.

However, the percentage change in food products units varies enormously within the region under study, from 7.60 percent for Malshiras tahsil to 1.75 percent for South Solapur tahsil. (Fig. 5.5)

D) TEXTILE MILLS IN SOLAPUR DISTRICT:

Though, number of cotton textile mills in Solapur city has been closed down due to adverse condition, related with the capital, political policies and adverse unsuitable climatic condition. The availability of raw material, though, is abundant in Solapur district even than large cotton textile mills could not flourished. However, small scale textiles mills are still flourishing in the region under study, because of the abundant availability of yarn, manufactured within the district. The preference and priority of the people for textiles clothes even to day is responsible for the functioning of the number of textiles and power looms in Solapur city as well as in its vicinity. People generally from the rural areas and old people even to day prefer to wear textile clothes. This has resulted in the development of textile mills in Solapur district.

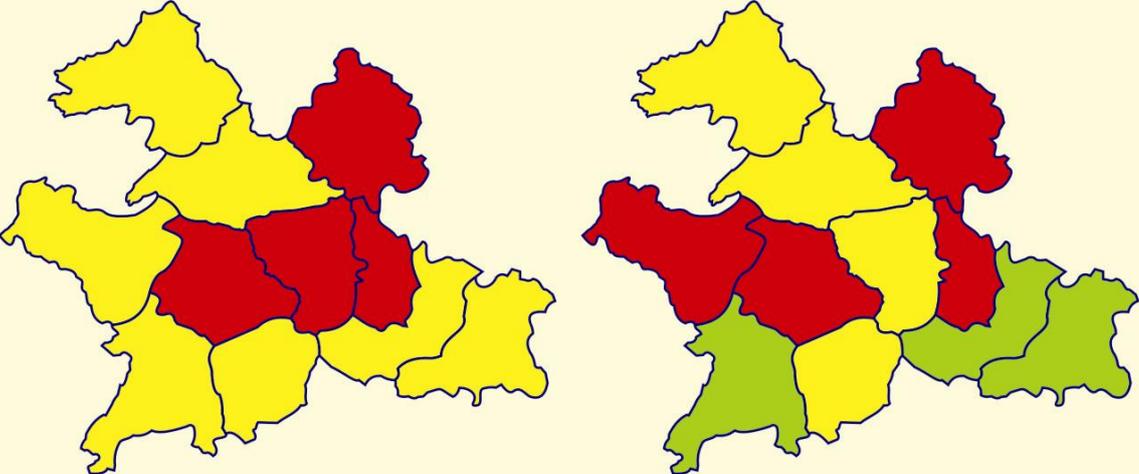
In the year 1981, there were 714 textile mills within the district of Solapur. Out of these 570 numbers of textile mills units were located alone in the Solapur city which comes to around 80 percent unit of the district. The south Solapur tahsil, which is around the close proximity of the Solapur city, also have shown considerable number of textile mills and occupies second position in the district. Barshi tahsil has 43 textile mills and occupies third rank in the year 1981. Except, Pandharpur where the number was 10 for textile mills, all other tahsils represented number of textile mills below 10. There are wide variations in the number of textile mills within the various tahsils of Solapur district. The highest number being of 570 for North Solapur tahsil while the lowest number of one for Mangalwedha tahsil in the year 1981.

SOLAPUR DISTRICT

FOOD PRODUCTS UNITS

1981

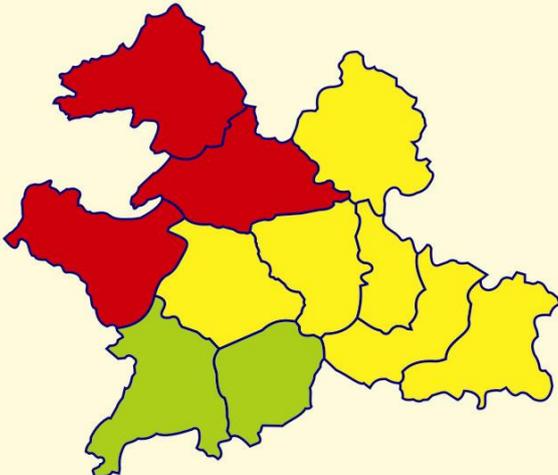
2001



Number of Food Products Unit

	Above 30
	20 - 30
	Below 20

Change in Percentage



Percentage Change in Food Mills

	Above 4
	3 - 4
	Below 3

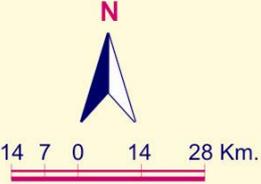


Figure 5.5

In the year 2001, there were 3668 textiles mills in the entire region of Solapur district. North Solapur tahsil occupied the first rank having 3400 mills, which is more than 90 percent of the district. There has been tremendous increase in the number of textile mills, except, south Solapur during the last two decades. It must be noted that, due to the presence of Solapur city and availability of skilled labor better transportation facilities and for longer period, supply of power have resulted in the flourishing of the textile mills in North Solapur tahsil. It is clear from the fact that the number of units for textile mills has increased by 2830 for textile mills.

Barshi has recorded total increase of 27 textile units followed by Malshiras and Pandharpur tahsil. Akkalkot has depicted 32 units of textile mill in year 2001. Except, North Solapur tahsil there has been increase in number of textile unit for the all the tahsils of the Solapur district but it was higher in certain of the district. Karmala and Madha tahsils have recorded increase in the number of textile units below 10 while Mohol, Mangalwedha and Sangola below 20 and Akkalkot and Barshi have recorded above 20.

The percentage of textile units though, does not give a clear impression as regard to spatial pattern of textile mills during the period 1981-2001, because their percentage are more or less equal in 1981 and 2001, except for North Solapur tahsil which has predominated the percentage of textile units. Percentage change in the textile units was positive for all tahsils, except, South Solapur. The increase in percentage was highest for Malshiras and lowest for South Solapur tahsil. The average percentage change was estimated to 5.13 for the entire region during the 1981-2001. The tahsils which have shown higher percentage change than the average for the region are North Solapur, Mangalwedha

Table 5.14**Textile Mills in Solapur District**

Sr. No.	Name of Tahsil	no. of mills in 1980-81	No. of textile mills in 2000-01	Change in No. of mills	% of unit 1880-1881	% of unit 2000-2001	% change
1.	North Solapur	570	3400	2830	79.83	92.69	05.96
2.	Barshi	43	70	27	6.02	1.91	1.62
3.	Akkalkot	08	40	32	1.12	1.09	5.00
4.	South Solapur	66	30	-36	9.24	0.82	-4.54
5.	Mohol	05	20	15	0.70	0.54	4.00
6.	Mangalwedha	01	18	17	0.14	0.49	8.00
7.	Pandharpur	10	30	20	1.40	0.82	3.00
8.	Sangola	04	20	16	0.56	0.55	5.00
9.	Malshiras	02	22	20	0.28	0.60	11.00
10.	Karmala	02	10	08	0.28	0.27	5.00
11.	Madha	03	08	05	0.08	0.22	2.66
	District Total	714	3668	2954	100.00	100.00	5.13

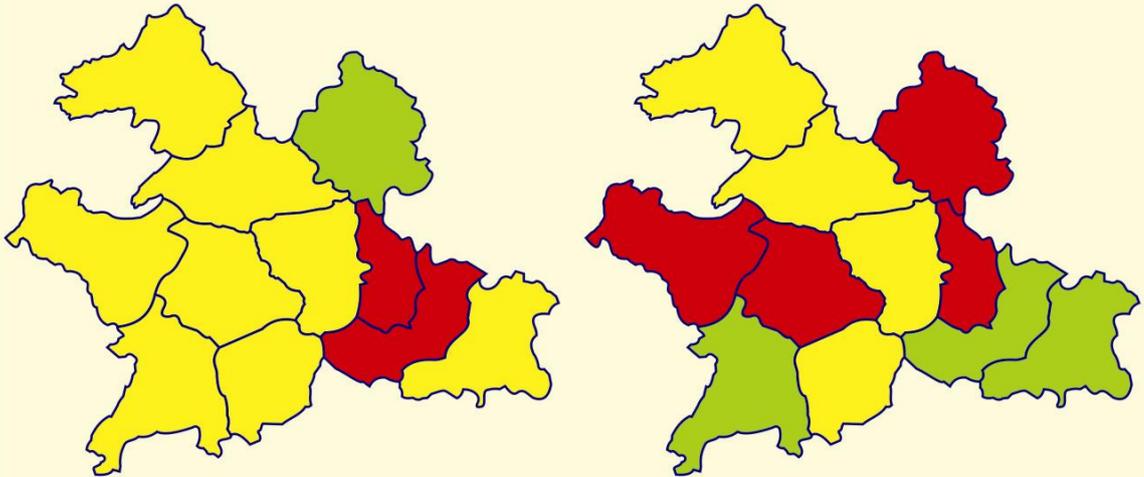
and Malshiras. Rest other tahsils have percentage change in textile mills below for the region. In short, it may be stated that there has been considerable increase in the number of textile units except South Solapur because of the demand of the textile clothes. As matters of fact, a large number of people are employed in the textile units, thereby, high proportions of the people gaining good income for the day to day expenditure in Solapur district. Still there is urgent and acute need to improve the machinery and quality of the products so that it may compete with the other product of the clothes. (Fig 5.6)

SOLAPUR DISTRICT

TEXTILE MILLS

1981

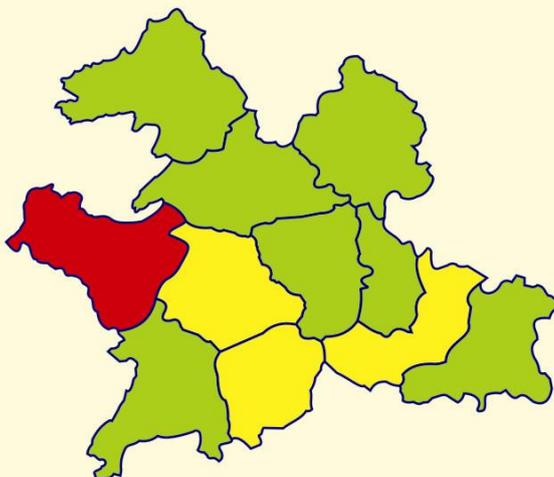
2001



Number of Textiles Mills

	Above 50
	10 - 50
	Below 10

Change in Percentage



Percentage Change in Textile Mills

	Above 10
	1 - 10
	Below 1



14 7 0 14 28 Km.

Figure 5.6

E) FOREST BASED INDUSTRIES IN SOLAPUR DISTRICT:

Forest resources constitute one of the most prominent features in a region. Forest is invaluable wealth of a region, because forest provides raw material to modern industries. Forest is the chief of timber for building material and provide habituate for numerous type of animal and micro organism. Forests offer protection to say by binding the network their routes and by protection soil from direct impact of falling rain drop.

It is matter of serious concerned that present economic man has forgotten the forest significance. Man has destroyed so rapidly and alarmingly that the forest areas have declined at regional level. Hence, there is need to bring the stage of equilibrium by a forestation, reforestation in waste lands. Apart from this the forest is the chief source of fire wood for millions of the people in rural areas of India. The forest based industries are generally located through out the region under study.

In 1981, there were 40 forest based industries in Solapur district which were distributes all over the region. The highest number of forest based industries was recorded in North Solapur tahsil, which is 42 percent of the total industries represented 3 each industries in the expectations Malshiras where it was 4. South Solapur and Mohol represented to each forest based industries while rest having only one forest based industries (Table 5.15)

In 2001 the number of forest based industries was 277, which has increased more than 7 times during the last 20 years as expected; the number of units for forest industries was highest for North Solapur tahsil due to the presence of Solapur city. It was followed by Mohol where the number 76 of forest industry. Pandharpur Akkalkot, Barshi recorded 20 and above forest based industries in 2001. While rest tahsils of the Solapur district recorded below 20 units of forest based industries

Table 5.15**Forest Based Industries in Solapur District**

Sr. No.	Name of Tahsil	No. of forest unit 1980-81	No. of forest unit 2000-01	Change in number	% of unit 1980-81	% of unit 2000-01	% change
1.	North Solapur	17	100	87	42.50	36.10	5.88
2.	Barshi	03	28	25	7.50	10.11	9.33
3.	Akkalkot	03	20	17	7.50	7.22	6.66
4.	South Solapur	02	15	13	5.00	5.42	7.50
5.	Mohol	02	16	14	5.00	5.78	8.00
6.	Mangalwedha	01	18	17	2.50	6.50	18.00
7.	Pandharpur	03	20	17	7.50	7.22	6.66
8.	Sangola	03	15	12	7.50	5.42	5.00
9.	Malshiras	04	17	13	10.00	6.14	4.25
10.	Karmala	01	14	13	2.50	5.05	14.00
11.	Madha	01	14	13	5.50	5.05	14.00
	District Total	40	277	237	100.00	100.00	6.92

The percentage change along with the percentage units both 1981 and 2001 gives not very clear picture of spatial variations because of the values calculated fall in the similar category except North Solapur tahsil, where a proportion of unit is more than 40 percent. The change is in percentage only 5.88 as regard to the growth of forest based industries some other tahsil, though, represent higher percentage of change but difference between number of forest based industries during 1981-2001 is misleading the idea in percentage. For example Mangalwedha tahsil having one forest based industries in 1981, which has gone up to 18 in 2001. It means there has been increase of forest based industries in 18

times, there fore it ranks first in the entire district as regard to percentage change for the growth of forest based industries. (Fig. 5.7)

F) CHEMICAL UNITS IN SOLAPUR DISTRICT:

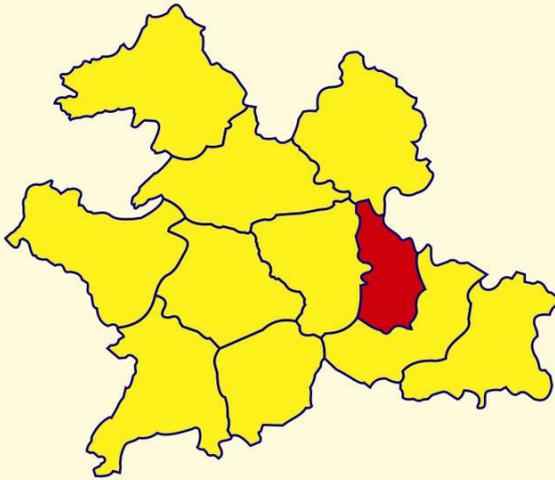
Chemical industries are very important from the point of view of manufacturing of the medicine. All Allopathic including Unani, Ayurved are depended upon the chemicals derived from the different kinds of vegetation and others organic and inorganic substances of the earth. As expected, due to favorable conditions require for the development of chemical industries are available easily in large urban centers. As a result of it, this kind of industry flourishes in large urban center.

In the region under study, there were 71 chemical units in the year 1981. Out of the total more than half chemical units were located in North Solapur tahsil. In other tahsils, the number of chemical industries was less than five, majority of tahsils were having more than thee chemical units, while Sangola and Malshiras had two chemical units. In year 2001, there has been tremendous increase in number of chemical units in Solapur district, as their number increase from 71 in 1981 to 307 in year 2001. As expected the increase in the number of chemical units was highest for north Solapur tahsil. There has been net increase of 163 units alone in North Solapur tahsil. For the district it was recorded 236 units. Among the various tahsils of the Solapur district Barshi and Malshiras tahsils recorded higher number of increase in the chemical unit during the last 20 years. South Solapur, Mohol and Mangalwedha have recorded more than five chemical units during the same period. Rest other tahsils recorded less than five increase in the chemical units during the same period. This is regarding the number of chemical units in 1981 and 2001, as well as net increase in the number of chemical units. (Table 5.16)

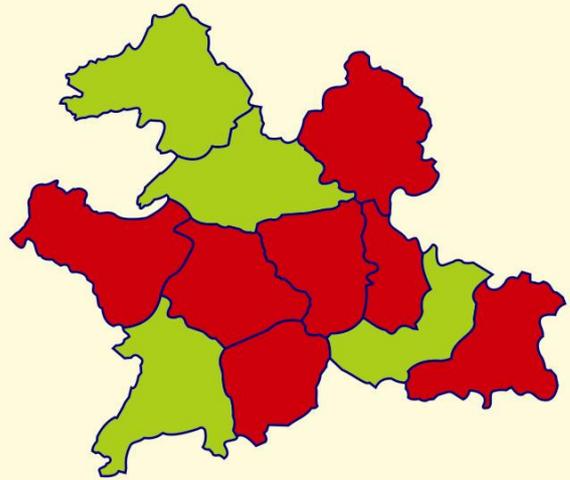
SOLAPUR DISTRICT

FOREST BASED INDUSTRIES

1981



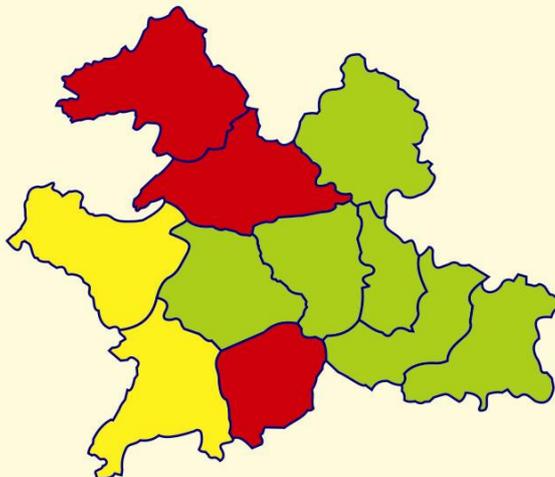
2001



Number of Forest based Industries

	Above 50
	10 - 50
	Below 10

Change in Percentage



Percentage Change in Forest based Industries

	Above 10
	1 - 10
	Below 1

N



14 7 0 14 28 Km.



Figure 5.7

Table 5.16
Chemical Units in Solapur District

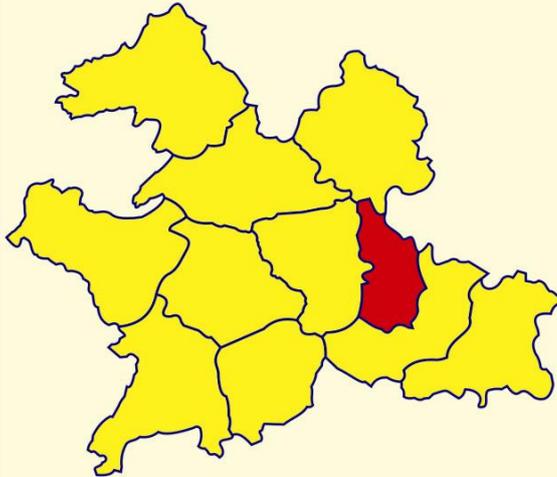
Sr. No.	Name of Tahsil	No. of Chemical unit 1981	No. of Chemical unit 2001	Change in number	% of unit 1981	% of unit 2001	% change
1.	North Solapur	40	203	163	56.34	66.12	5.07
2.	Barshi	04	30	26	5.63	9.77	7.50
3.	Akkalkot	03	02	01	4.23	0.65	-6.66
4.	South Solapur	05	10	05	7.04	3.26	2.00
5.	Mohol	03	08	06	2.82	2.61	4.00
6.	Mangalwedha	03	10	07	4.23	3.26	3.33
7.	Pandharpur	03	06	04	2.82	1.95	3.00
8.	Sangola	02	06	04	2.82	1.95	3.00
9.	Malshiras	02	20	18	2.82	6.51	10.02
10.	Karmala	03	06	03	4.23	1.95	2.00
11.	Madha	03	06	03	4.23	1.95	2.00
	District Total	70	307	236	100.00	100.00	4.32

Another way of expression of this information is by converting the number of units in percentage. For North Solapur tahsil the percentage of unit was calculated more than 50 percent for 1981 and 2001, while increase in percentage for the chemical unit was more than five percent. In the year 1981, the tahsils which have recorded more than 5 percent unit of the district, were south Solapur and Barshi. In the remaining tahsils percentage of unit was observed less than five percent for the year 1981. (Fig. 5.8)

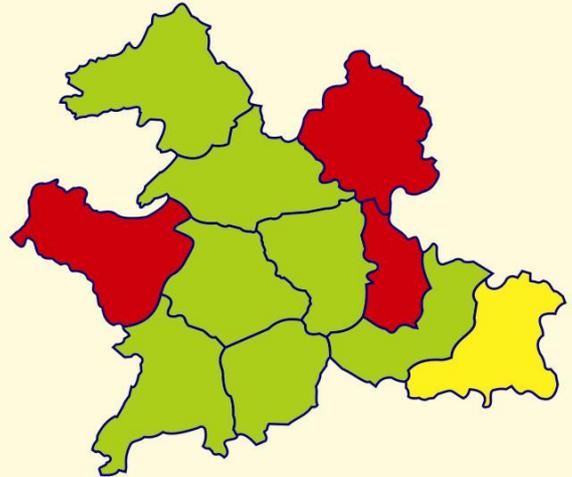
SOLAPUR DISTRICT

CHEMICAL UNITS

1981



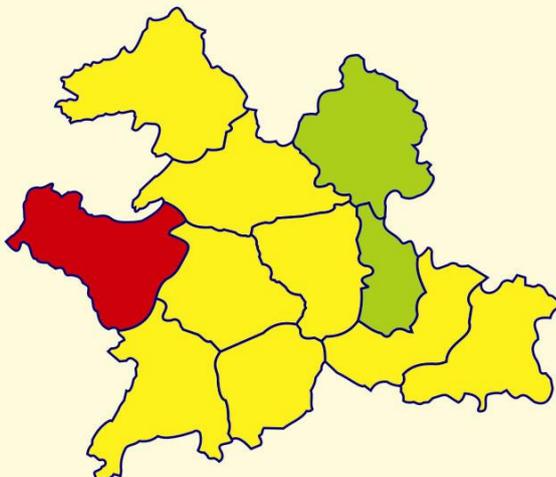
2001



Number of Chemical Units

	Above 15
	5 - 15
	Below 5

Change in Percentage



Percentage Change in Chemical Units

	Above 10
	5 - 10
	Below 5

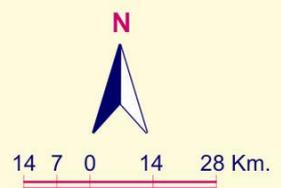


Figure 5.8

In the year 2001, North Solapur alone recorded alone two third units of the district which is about 66 percent units of chemical industries in North Solapur. Except, Barshi and Malshiras tahsils, which were having more than five percent chemical unit in the year 2001, rest other tahsils represented of chemical units less than five percent. The percentage change was positive for all tahsils except Akkalkot. It was shows that numbers of chemical units have gone down in Akkalkot tahsil. Malshiras recorded the highest percentage increase in chemical units during the last twenty years.

G) LEATHER UNITS OF SOLAPUR DISTRICT:

Leather industry is most significant industry as regard to goods manufactures by leather shoos, chappales, belts, bags, Purse and many other articles are manufactured by leather which are used in day to day life. Though, the age is of plastic use, even today the leather occupies a very important position. The items made by the leather are relatively costly than other synthetic materials it is also believe that in near future this industries will retained its place of significance.

In the year 1981, there were 84 leather units in Solapur district. Out of these 84, about fifty one were located in North Solapur tahsil. It was followed by Malshiras tahsil, where the number was recorded ten. In Sangola tahsil the number of lather units was six while other tahsils recorded less than five units.

In the year 2001, the total leather units were 162 in the entire district, out of these, 60 units were found in North Solapur tahsil. Leather industries were flourished also in other tahsils where the number was more than ten, were Mangalwedha, Pandharpur, Sangola and Malshiras. In other Tahsils of district, the number was less than ten. The change in the number of unit was positive for all the tahsils. The net increase in the

number of leather unit for entire district was 78, highest was recorded for Pandharpur and lowest number in the increase of the leather units was for the Madha tahsil. (Table 5.17)

Table 5.17
Leather Units in Solapur District

Sr. No.	Name of Tahsil	No. of Leather unit in 1981	No. of Leather unit in 2001	Change in number	% of unit 1981	% of unit 2001	% change
1.	North Solapur	51	60	09	60.71	37.03	1.17
2.	Barshi	02	08	06	2.38	4.94	4.00
3.	Akkalkot	02	10	08	2.38	6.17	5.00
4.	South Solapur	02	07	05	2.38	4.32	3.50
5.	Mohol	02	08	06	2.38	4.94	4.00
6.	Mangalwedha	03	12	09	3.57	7.41	4.00
7.	Pandharpur	02	13	11	2.38	8.02	6.50
8.	Sangola	06	12	06	7.14	7.41	2.00
9.	Malshiras	10	15	05	11.90	9.26	1.50
10.	Karmala	02	10	08	2.38	6.17	5.05
11.	Madha	02	07	05	2.38	4.32	3.50
	District Total	84	162	78	100.00	100.00	1.93

Source: District Industrial Development Office, Solapur.

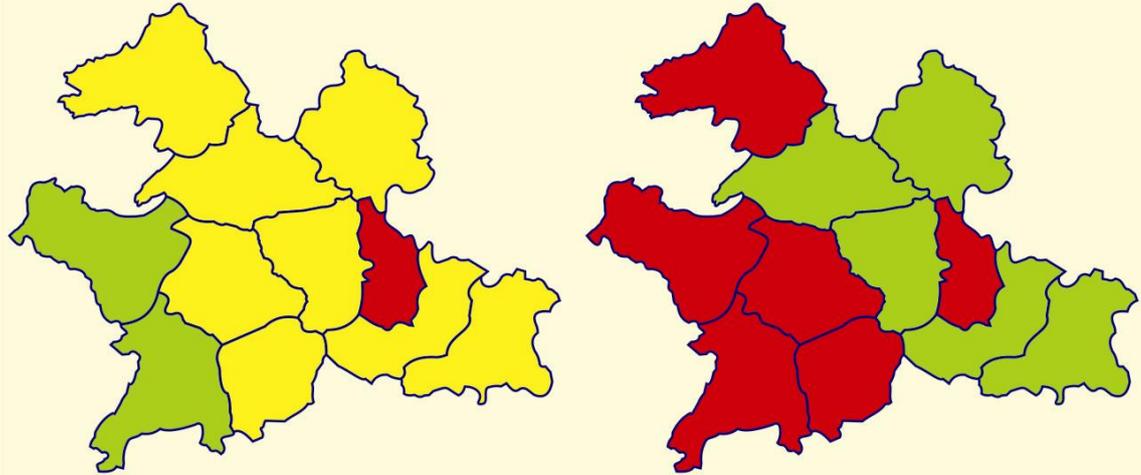
The percentage of leather industries was more than 60 percent for North Solapur tahsil in 1981, which decline to 37 percent in 2001. Except, Sangola and Malshiras, in other tahsils the percentage was around two percent in the year 1981. In the year 2001, due to decline in the percentage of unit for North Solapur tahsil, the percentage of leather unit became almost twice for all other tahsils of Solapur district, except, Malshiras and Sangola. The percentage increase, was highest for Karmala, Pandharpur and for Akkalkot tahsils. While for North Solapur and Malshiras it was below average for the region. In other tahsils, it was around four percent. (Fig. 5.9)

SOLAPUR DISTRICT

LEATHER UNITS

1981

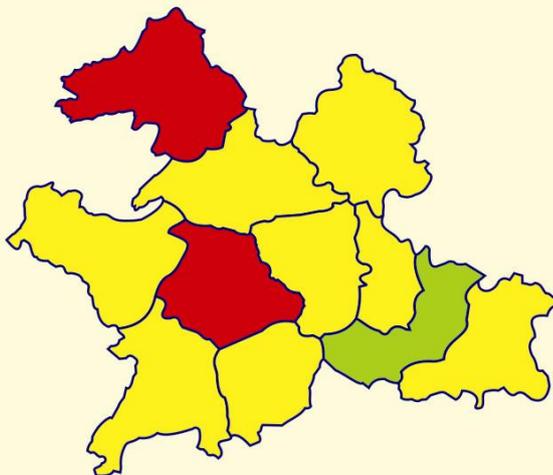
2001



Number of Leather Units

	Above 10
	5 - 10
	Below 5

Change in Percentage



Percentage Change in Leather Units

	Above 10
	5 - 10
	Below 5



14 7 0 14 28 Km.

Figure 5.9

H) ENGINEERING INDUSTRIES IN SOLAPUR DISTRICT:

The role of engineering industries is quite vital in the development of a particular region. The engineering industries are the chief source of technical manufacturing items. Modernization is reflected through work of engineer. Most of the transportation means are being handled by the engineering technology. Construction of roads, railways dams, buildings and many other miscellaneous works are the products of a small scale industries, in general and large scale in particular. Here, an attempt has been made to understand the spatial distribution of the number of engineering units of the Solapur district in 1981 and 2001. It has also been taken in to account to understand the change in the unit of engineering industries during the last 20 years. At the same time, the numbers of units of engineering unit have also been converted in to percentage for each tahsil, for the both decades. Similarly, the percentage change has also been shown for each tahsil in the table concerned.

In the year 1981, the units of engineering industries in the Solapur district were 74, which increased quite rapidly and became 357 in year 2001. It is quite amazing that there has been net increase of 283 units of engineering industries in Solapur distributing last two decades. For the district as a whole it was 4.82 percent increase. Out of the 74, small scale engineering industries in the year 1981, almost half of the engineering industries are located in the North Solapur tahsil, particularly in and around the city.

The spatial pattern of the small-scale engineering industries is not uniform. The large urban centers like Pandharpur and Barshi have much number of engineering units as table concerned reveals. Other tahsils of the district depict below five industries in each tahsils. Akkalkot,

Mangalwedha, Karmala and Madha tahsil have each, two units of engineering in 1981.

For the year 2001, the number of small scale engineering unit was as high as 357, out of these 140 units were found only in North Solapur tahsil due existence of Solapur city. Other tahsils, like Malshiras, Barshi and Pandharpur have shown tremendous increase in the number of engineering units. Akkalkot and Mohol tahsils had each fifteen and ten respectively in the year 2001. There were four tahsils in the district having five and more units of engineering industries namely Karmala, Mangalwedha, South Solapur and Sangola. (Table 5.18)

It is interesting to understand the total net increase in the small scale engineering industries in the different parts of the region under study, during the last twenty years. Due to the existence of the Solapur City, the net increase was more than 100 units in North, Solapur tahsil and more than 50 in Barshi and Malshiras tahsils. The number of engineering unit was between 10 to 15 for the Akkalkot and Pandharpur tahsils, as for as the net change in concern during the last 20 years.

The percentage of the small scale engineering units in the 1981 was above 50 percent for north Solapur tahsil, and was followed by Pandharpur. Barshi Tahsil represented relatively higher percentage and occupied third position. South Solapur, Mohol, Sangola and Malshiras each one of them represented 5.41 percent unit of small scale engineering industries in the year 1981. Rest four tahsils have also shown 2.70 percent engineering unit in each tahsils.

Table 5.18**Units of Engineering Industries In Solapur District**

Sr. No.	Name of Tahsil	No. of Engineering unit 1981	No. of Engineering unit 2001	Change in number	% of unit 1981	% of unit 2001	% change
1.	North Solapur	35	140	105	47.330	39.22	4.00
2.	Barshi	06	62	56	8.11	17.37	10.33
3.	Akkalkot	02	15	13	2.70	4.20	7.50
4.	South Solapur	04	05	01	5.41	1.40	1.25
5.	Mohol	04	10	06	5.41	2.80	2.50
6.	Mangalwedha	02	05	03	2.70	1.40	2.50
7.	Pandharpur	09	24	05	12.16	6.72	2.66
8.	Sangola	04	06	02	5.41	1.68	1.50
9.	Malshiras	04	81	77	5.41	22.69	20.25
10.	Karmala	02	06	04	2.70	1.68	3.00
11.	Madha	02	03	01	2.70	0.80	1.50
12.	District Total	74	357	283	100.00	100.00	4.82

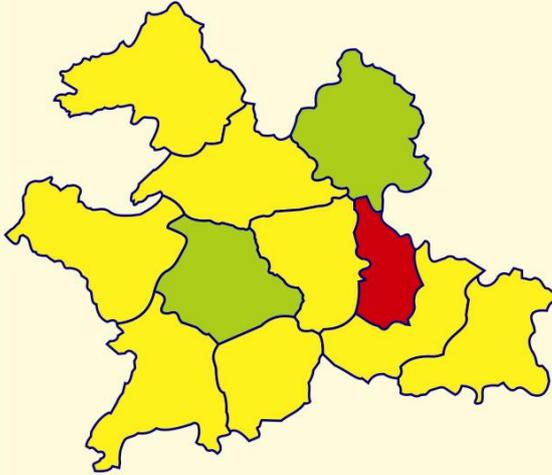
Source: District Industrial Development office, Solapur.

In the year 2001, the percentage varies enormously within the district, being highest for the North Solapur while lowest for Madha tahsil. During the last 20 years there has been tremendous increase in the percentage of engineering unit Barshi and Malshiras tahsil. Below five percent unit were located in all other tahsils of Solapur district except Pandharpur. The percentage change or the increase in percentage of engineering units was recorded highest for the Malshiras while lowest south Solapur tahsil. Barshi represented above 10, Akkalkot below ten, while other rest tahsil below five percent increase in the small scale engineering industries during the last 20 years. (Fig. 5.10)

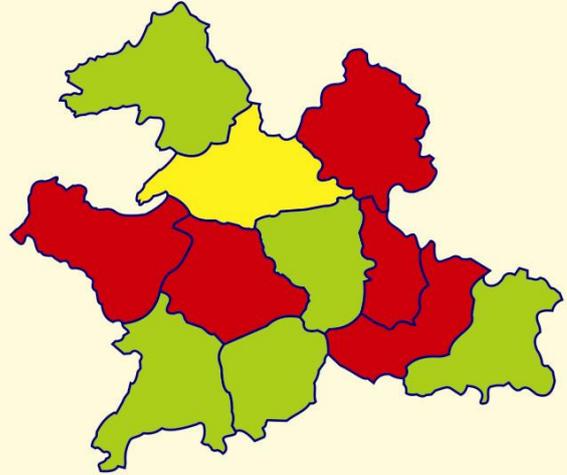
SOLAPUR DISTRICT

ENGINEERING UNITS

1981



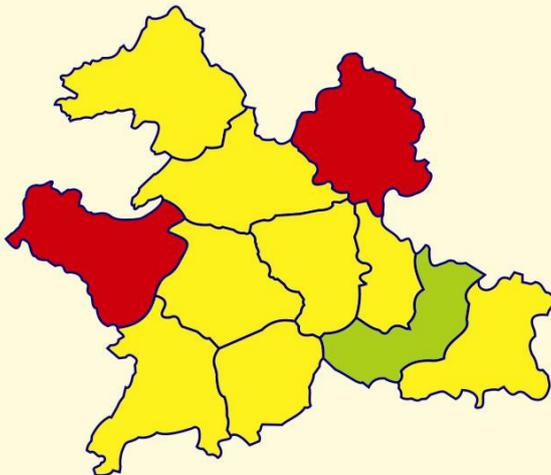
2001



Number of Engineering Units

	Above 10
	5 - 10
	Below 5

Change in Percentage



Percentage Change in Engineering Units

	Above 10
	5 - 10
	Below 5

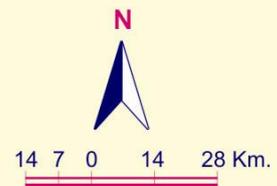


Figure 5.10

I) ELECTRONIC AND ELECTRICAL INDUSTRIES IN SOLAPUR DISTRICT:

This is the period of electronic and electrical development. The electric items such as Television, laptop and mobiles have created a great revolution in the society. Electrical items have also brought a great innovation in modern period. Electronic and electrical goods and items are the necessity in day to day life. The comfort ness of the people depends upon the items by manufactured by these units. Fridge, microwaves, air-conditioners and fan are not the luxurious item but necessity of the society in day to day life. Hence, an attempt has been made to know about the electronic and electrical units in Solapur district a spatially and temporally.

In the year 1981, there have been 110 electronic and electrical units in Solapur district, which have astonishingly increased to 903 units in 2001. There has been total increase of 793 units during the last two decades. In the year 1981, North Solapur tahsil represented alone 62 electronic and electrical units located in city and its vicinity. Due to close proximity South Solapur has shown second position. Akkalkot and Sangola were having more than seven units. Mangalwedha, Barshi and Pandharpur had each four units of electronic and electrical industry. In other rest tahsils, the number was only two for each tahsil.

For the year 2001, there were 320 electronic and electrical units alone in the North Solapur tahsil. Again, due to nearness to Solapur city the tahsil of south Solapur retain, second rank as for as the number of electronic and electrical units are concerned It was followed by Akkalkot tahsil in year 2001. There are wide variations in the spatial distribution of electronic and electrical units from one tahsil to another. Barshi and

Madha represented lowest number of electronic and electrical units. There are four tahsils namely; Mohol, Pandharpur, Sangola and Karmala having each tahsil 60 units while, Mangalwedha and Malshiras each 50 units of electronic and electrical industries. (Table 5.19)

Table 5.19

Electronic and Electrical Units in Solapur District

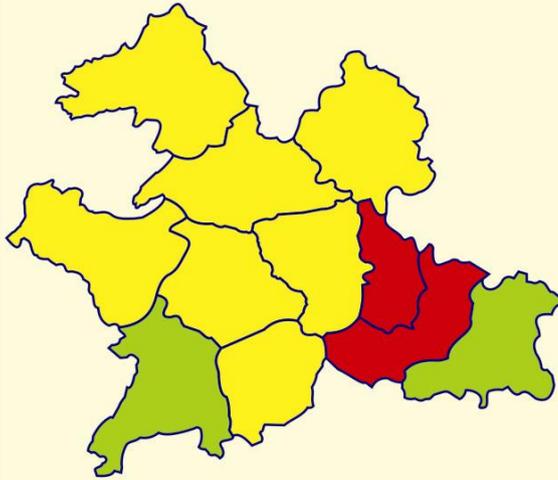
Sr. No.	Name of Tahsil	No. of Electronic unit 1981	No. of Electronic unit 2001	Net Change	% of unit 1981	% of unit 2001	% change
1.	North Solapur	62	320	258	56.36	35.44	5.16
2.	Barshi	04	25	21	3.64	2.77	6.25
3.	Akkalkot	09	92	83	8.19	10.19	10.22
4.	South Solapur	12	96	84	10.91	10.64	8.00
5.	Mohol	02	60	58	1.82	6.64	30.00
6.	Mangalwedha	04	50	46	3.63	5.54	12.50
7.	Pandharpur	04	60	56	3.63	6.64	15.00
8.	Sangola	07	60	53	6.36	6.64	8.57
9.	Malshiras	02	50	48	1.82	5.54	25.00
10.	Karmala	02	60	58	1.82	6.64	30.00
11.	Madha	02	30	28	1.82	3.32	15.00
	District Total	110	903	793	100.00	100.00	8.21

The net increase in the number of units during the last 20 years has been of the magnitude of 793 for the Solapur district as a whole. These were traced below 50 in Mangalwedha, Barshi, Malshiras and Madha tahsils, while between 50 to 100 units were recorded in all other tahsils except North Solapur where net increase was 258 in the unit of electronic and electrical industries.(Fig. 5.11)

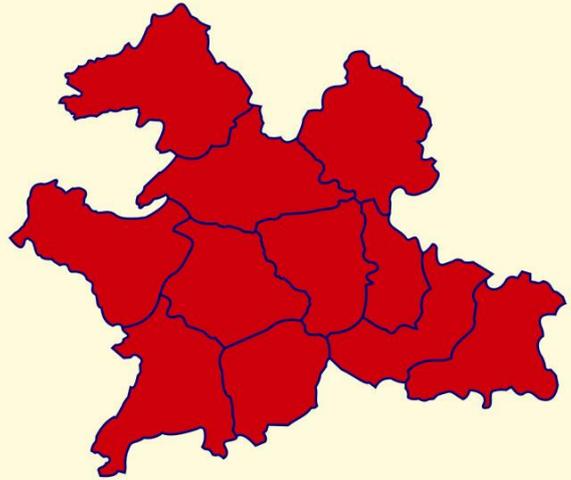
SOLAPUR DISTRICT

ELECTRONIC AND ELECTRICAL UNITS

1981



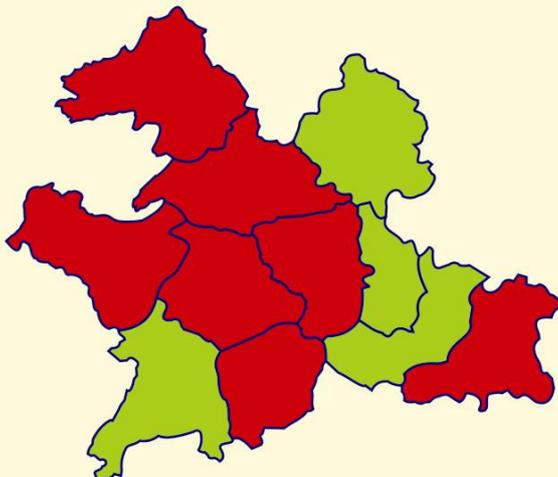
2001



Number of Electronic and Electrical Units

	Above 10
	5 - 10
	Below 5

Change in Percentage



Percentage Change in Electronic and Electrical Units

	Above 10
	5 - 10
	Below 5

N



14 7 0 14 28 Km.



Figure 5.11

Similarly, percentages of electronic and electrical units were also calculated for 1981 and 2001 for each tahsil for the Solapur district. As expected, the percentage of unit was highest for North Solapur tahsil in the year 1981, as a matter of fact, because of the Solapur city almost 60 percent electronic and electrical units found in North Solapur tahsil. It was followed by south Solapur tahsil due to close proximity of the Solapur city. Akkalkot and Sangola represented between 5 to 10 percent units of district. While rest other tahsils represented below 5 percent in year 1981.

The percentage of electronic and electrical units for the year 2001 surprisingly declined for North Solapur tahsil and became 35.44 percent, which is almost one third of the electronic and electrical units. Akkalkot and south Solapur, tahsil represented slightly high percentage than ten. Except Barshi and Madha, where percentage was below five for electronic and electrical units, percentage was below five for electronic and electric units; rest other tahsils of the Solapur district have shown percentage between five and ten.

As far as the percentage increase in the electronic and electrical unit is concerned in different part of the district, it was recorded highest for Mohol and Karmala tahsil having each tahsil 30 percent electronic and electrical units. Sangola, South Solapur, Barshi and North Solapur have shown percentage increase in electronic and electrical units below 10 percent, while four tahsils consisting of Madha, Pandharpur, Mangalwedha and Akkalkot, represented percentage of increase in units between ten to twenty percent except, Malshiras tahsil, where it was 25 percent during the last twenty years. This shows that Solapur district is getting a momentum in development of electronic and electrical units during the last two decades.

5.6.2. Number of units of small scale industries per 100 square km area and per 1000 population in Solapur district:

For regional planning the spatial and temporal variations do not, many times, give more realistic picture of the number of units for small scale industries. The magnitude of the intensity for the demand and supply of the goods cannot be found out correctly because; the ratio between population and area which is known as density many times misleads the planner for socio economic development. Therefore, a more realistic attempt has been made to understand, the problems of small scale industries per 100 square kilometers of area as well as number of small scale industries per 1000 population in the Solapur district for the years 1981 and 2001.

i) Number of small scale industries units per 100 square kilometer area:

The number of small scale industrial units per 100 square kilometer area is in fact, an index of the relationship between industrial unit and 100 square kilometer of area. This technique is highly useful in the identification of the potential development of particular industries; required by that region for social and economic development. Hence, the ratios were calculated for the region under study as a whole, and different tahsils distributed in different physiographic and climatic regions; for the period 1981 and 2001. In the year 1981, numbers of small scale industrial units per 100 sq. kilometer of area were computed to 14.21 for the region under study as a whole. The number of small scale industrial unit per 100 square kilometer area has represented the actual concentration of the small scale industries in each tahsil.

In the year 1981, the highest number of small scale industrial units per 100 square kilometer of area was found of 182 in North Solapur

tahsil. As expected, the high concentration of industrial unit in North Solapur tahsil is infact, the result of Solapur city. On the one hand Barshi, South Solapur, Pandharpur have shown relatively higher number of small scale industrial units which is of the order of 12.60, for south Solapur, 12.20 for Barshi and 9.30 for Pandharpur for other tahsil of district except Mohol, the number of small scale unit is below five. As a matter of surprise, except North Solapur tahsil and other tahsil have shown the number of small scale unit per 100 square kilometer of area below the average for the region. Besides, Karmala and Madha represented below two industrial units, while Mangalwedha slightly above two and Malshiras and Sangola below four industrial units per 100 square kilometer areas.

In the year 2001, the spatial pattern of the number of small scale units; per 100 square kilometer areas was quiet different from previous decade. The concentration index is by in large is the same, highest number of 799 for North Solapur tahsil and followed by due to close proximity by South Solapur. Where the number of small scale industrial units was 116 per 100 square kilometer of area. In other tahsils of the district, surprisingly, the number of industrial unit was below the average for region as whole in the year 2001. (Fig. 5.12)

ii) Number of small scale industrial unit per 1000 population:

This is an index of understanding relationship between numbers of small scale industrial units for per 1000 population. This is the ratio between number of industrial unit and per 1000 population. This understanding has enabled us to identity the deficit or industrially backward region or surplus industrially advance region. For this purpose, the number of industries per 1000 population have been calculated both for 1981 and 2001 period for all the tahsils of the Solapur district.

SOLAPUR DISTRICT

SMALL SCALE INDUSTRIAL UNITS PER 100 SQ.KM. AREA AND PER 1000 POPULATION

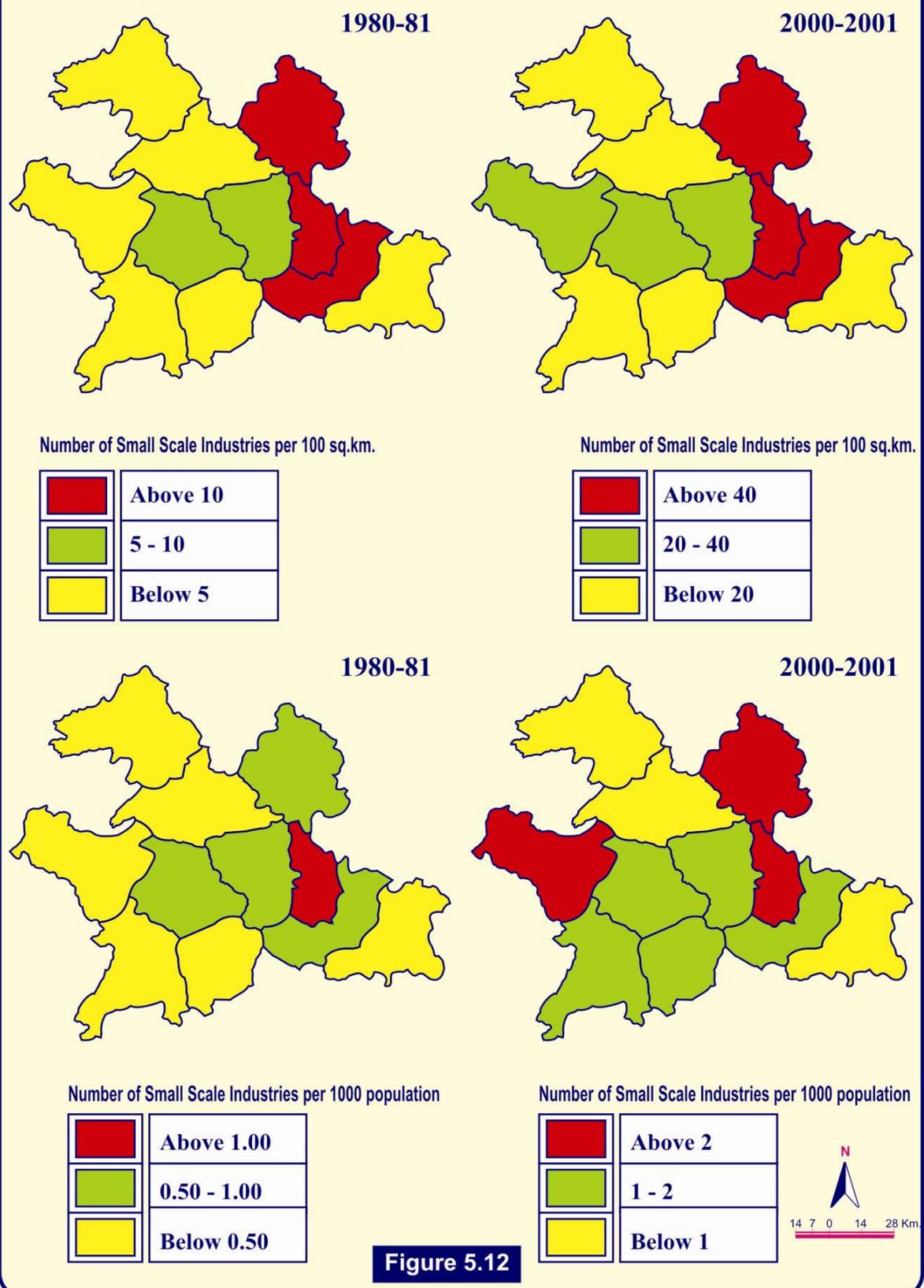


Figure 5.12

The number of small scale industrial units for per 1000 population has been calculated 0.81 for the region under a study as whole, for the year 1981. Due to the high concentration of industrial units in the Solapur City, the number of small-scale industrial units was highest of 2.14. Since most of the industries are located in the sub-urban areas of the Solapur city and many of them are located in South Solapur tahsil. Hence, this tahsil has also shown the number of small scale industrial units above the region average which is estimated twenty one for the year 1981. While more than 0.5 number of small scale industrial unit per 1000 population was for the Mohol, Pandharpur and Barshi tahsils. For other tahsils of the district the number of small scale industrial units per 1000 population was calculated below five.

For the year 2001 the average number of small scale industrial units per 1000 population was 2.81 for the region as whole. The highest number of small scale units per 1000 population was worked out of 7.40 units for North Solapur tahsil as expected for the year 2001. It is matter of surprise, that except North Solapur tahsil all other tahsils of district have shown the number of small scale unit per 1000 population below the region average. It means that where the number of industrial unit is more per 1000 population are better developed than the areas having less number of industrial units. It may be concluded that higher the number of industrial unit per 1000 population or per 100 square kilometer are of area, better industrially developed region on the one hand and lower number of industrial units are relatively economically and industrially backward region. This shows that the number of industrial units in relation to area and population is an index of economic development, which in turn is reflected in the social development of that particular region. (Table 5.20)

Table 5.20**Number of Small Scale Industrial Units per 100 square kilometer and per 1000 population in Solapur district**

Sr. No.	Name of Tahsil	No. of small scale industrial units per 100 sq. k.m.		No. of Small scale industrial units of per 1000 population	
		1980-81	2000-2001	1980-81	2000-2001
1.	North Solapur	182.00	799.00	2.14	7.40
2.	Barshi	10.20	41.00	0.60	2.01
3.	Akkalkot	4.30	17.00	0.28	0.89
4.	South Solapur	12.60	116.00	1.00	1.74
5.	Mohol	7.00	26.00	0.65	1.82
6.	Mangalwedha	2.10	17.00	0.26	1.29
7.	Pandharpur	9.30	33.00	0.51	1.37
8.	Sangola	3.90.	15.00	0.34	1.03
9.	Malshiras	3.90	34.00	0.23	2.65
10.	Karmala	1.90	12.00	0.18	0.98
11.	Madha	1.90	12.00	0.14	0.72
	District Total	14.21	64.00	0.81	2.81

5.7 INDUSTRIAL COMBINATION REGIONS:

Since, the study of industrial combination regions provide a basis for regionalization of industries, hence, it constitutes and important aspects of industrial geography. It is observed fact that the industries generally developed in combination with other types of industries. It is never possible that a particular industry should occupy a prominent position in total isolation, from other industries in a given a real unit at a given point of time. The spatial distribution of individual industry is highly essential and useful for planners to develop a particular area.

Besides, it is even more important to view the integrated assemblage of various industries flourished in an area unit. Geographers have always been closely associated with the spatio-temporal analysis of the regional and physical landscape of the earth. Regional aspects of industrial growth and development, industrial concentration, industrial diversification and combination are quiet fundamental to geographers. Hence, industrial planners and geographers have paid a very considerable attention on such studies so far.

The industrial combination region, thus, delimited would emphasize, the regional from work of industrial activities and the specialization of industries in a particular area. The pattern of industrial combination which emerge from the delineation of industries in fact, serve manifold purpose for a balanced regional industrial planning. For this purpose, several approaches and method have been applied for the delineation of crop combination regions in agricultural geography. Similarly, these methods may be applied for the delimitation of industrial combination regions. (Table 5.21)

Here, an attempt has been made to delineate, the industrial combination region by applying the one of the standard methods given by various geographers. To find out, the industrial combinations regions, one of the important methods, given by Doi's (1975) method is applied for the Solapur district.

The table concerned reveals that three combination regions were calculated for the Solapur district, the region under study in 1981, which have become two industrial combination regions in 2001. The Doi's method as frequently applied for the crop combination region by considering the percentage of area under a specific crop and there

Table 5.21**Industrial Combination Regions by Doi's Method**

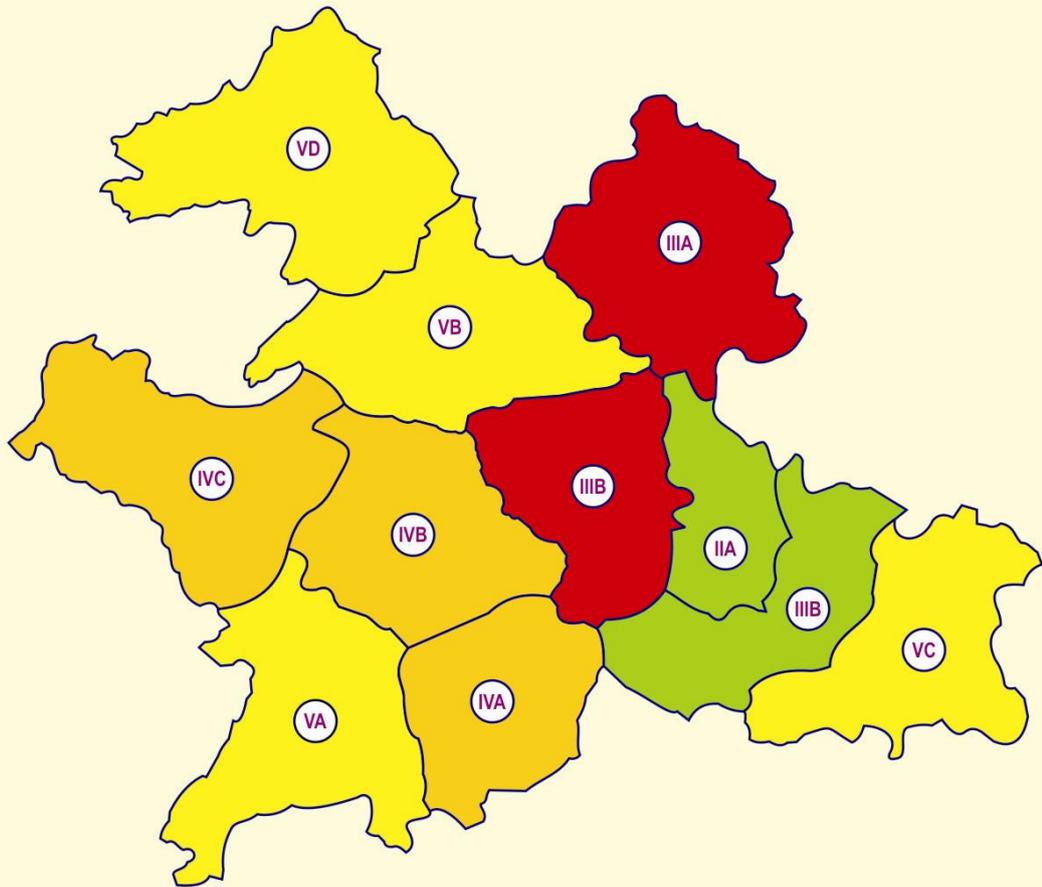
Sr.No.	Name of tahsil	1981	2001
1.	North Solapur	02	01
2.	Barshi	03	04
3.	Akkalkot	05	04
4.	South Solapur	02	03
5.	Mohol	03	05
6.	Mangalwedha	04	03
7.	Pandharpur	04	05
8.	Sangola	05	05
9.	Malshiras	04	04
10.	Karmala	05	03
11.	Madha	05	06
12.	Solapur District	03	02

cumulative percentage which make hundred percentage to all the crops. The dominancy of percentage above 50 percent makes one combination and till 75, two and 95 makes three combination low critical crops are ignored. (Fig. 5.13)

Similarly the Doi's methods find out the combination of industries in the Solapur district. In case, the total number of industrial unit's considering as 100 percent in a specific tahsil of Solapur district. The number of each industrial unit it will have own share of percentage. In case, particular industry has more than 50 share particular tahsil will have own dominancy as regards to one combination region. If another industry share 75 percent will two combination region and three makes percentage till 85 percentages. (Fig. 5.14)

SOLAPUR DISTRICT

INDUSTRIAL COMBINATION REGIONS DOI'S METHOD 1980-81



Combination:

- II A (North Solapur)
- II B (South Solapur)
- III A (Barshi)
- III B (Mohol)
- IV A (Mangalwedha)
- IV B (Pandharpur)
- V A (Malshiras)
- V B (Sangola)
- V C (Madha)
- V C (Akkalkot)
- V D (Karmala)

Industrial Combinations:

- 1. North Solapur : F, T
- 2. South Solapur : T, F
- 3. Barshi : D, F, T
- 4. Mohol : F,O,D
- 5. Mangalwedha : D,F,L
- 6. Pandharpur : F,O,T,D
- 7. Malshiras : D,O,F
- 8. Sangola : D,O,F,L
- 9. Madha : D,F,T,O,L
- 10. Akkalkot : O,F,T,Ee
- 11. Karmala : D,O,F,Fs

Abbreviations:

- D = Dal Mills
- Ee = Electric & Electronic Units
- F = Food Product Units
- Fs = Forest Based Units
- L = Leather Units
- O = Oil Mills
- T = Textiles Units

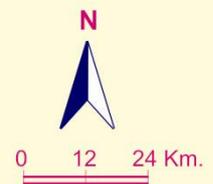
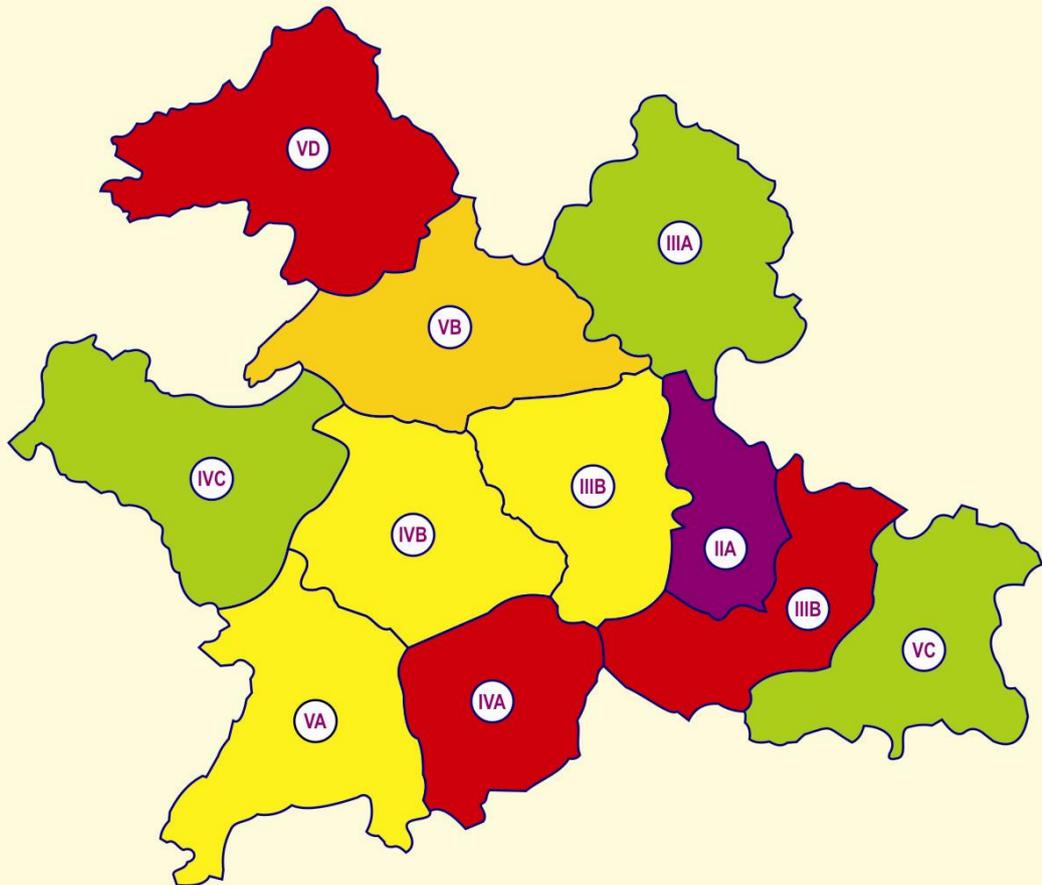


Fig. No.5.13

SOLAPUR DISTRICT

INDUSTRIAL COMBINATION REGIONS DOI'S METHOD 2000-2001



Combination:

I	(North Solapur)
III A	(South Solapur)
III B	(Barshi)
III C	(Mohol)
IV A	(Mangalwedha)
IV B	(Pandharpur)
IV C	(Malshiras)
V A	(Sangola)
V B	(Madha)
V C	(Akkalkot)
VI	(Karmala)

Industrial Combinations:

1.	North Solapur	: T
2.	South Solapur	: Ee,T,F
3.	Mangalwdha	: Ee,O,F
4.	Karmala	: F,En,Ee
5.	Barshi	: T,R,En,Ee
6.	Akkalkot	: T,R,F,O
7.	Malshiras	: En,F,Ee,O
8.	Mohol	: Ee,T,F,O,D
9.	Pandharpur	: Ee,F,D,T
10.	Sangola	: Ee,O,F,D,T
11.	Madha	: Ee,O,D,F,T

Abbreviations:

D	= Dal Mills
Ee	= Electric & Electronic Units
En	+ Engineering Unit
F	= Food Product Units
Fs	= Forest Based Units
L	= Leather Units
O	= Oil Mills
T	= Textiles Units

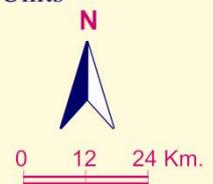


Fig. No.5.14

In this way, the region under study consisting of eleven tahsils in the study region and taking in to consideration thirteen small scale industrial units, such as dal mill, oil mill, food product, textile mill, forest based unit, building material units, leather, plastic, chemical rubber, engineering, electronic and electricals as well as other units. By Doi's method the combinations industrial regions are derived from these thirteen industrial units. As illustrated their values in the table 5.21.

In the year 1981, for the district as whole, as stated earlier, are three combination regions while became two in the 2001. It must be noted that the low number of combination region as, means better development of industrial region. This has been shown by the different values calculated for different tahsils of Solapur district for the year 1981 and 2001. For example North Solapur tahsil dominated by the city of Solapur, hence, the lowest values were calculated for 1981 and 2001 for North Solapur tahsil, which is most industrial developed region in the study area. On the other hand, Sangola tahsil having the highest value of industrial combination both for the year 1981 and 2001, which means that the Sangola is industrially much backward region in Solapur district. In this way other values may be also interrelated for other tahsils of Solapur district, lower the value for combination better the region developed, higher the values for industrial combination, poor is the region industrially developed. During last two decades, the improvement in the industrial sector may be attributed to increase in the level of literacy, easy loan facility, easy available raw material, competition among entrepreneurs and many other facilities have made easy available by the Government in the study region.

5.8 CONCENTRATION AND DIVERSIFICATION OF INDUSTRIES IN SOLAPUR DISTRICTS:

5.8.1. Industrial Concentration:

It means, the variations in the density of industry in terms number of units in an area at a given point of time. The concentration of small scale industrial unit in an area, generally, depends upon the nature of terrain, climatic conditions, availability of raw material and availability of water, power, agricultural production, transportation and market places. As matter of fact, industries have a tendency to concentrate in an area of ideal infrastructural facilities. The perfect knowledge of industrial concentration and diversification pattern in a particular region has considered most use full in the industrial development planning. The general concentration of an enterprise may be quantified with help of location quotient by co-efficient by localization. It is necessary, to make clear the attempt applied for the purpose in the middle half of 20th century, and this technique was primarily devised to study industrial locations. Florence (1948) compared the share of an enterprise of the region with that of the entire nation with the help of location quotient method.

Chisholm (1962) made an attempt to major the relative regional comparisons which are made between enterprises by calculating the difference between regional and national proportion of the area under a given enterprise. In order to determine the regional concentration of selected small units in the Solapur district, Bhatia's method of crop concentration (1965) is applied with slight modification for the calculation of location quotients.

$$\text{Index for determining concentration of small scale selected units} = \frac{\text{Percentage of Industry 'a' in the component areal unit}}{\text{Percentage of all selected small scale units in the component areal unit}} - \frac{\text{Percentage of Industry 'a' in the entire study region}}{\text{Percentage of all selected small scale units in the entire study region.}}$$

As per formula given for concentration of small scale industries applied for the region under study. The selected industrial units were taken in to concentration for all the tahsils for both 1981 and 2001 period. The computed values have been arranged tahsilwise in the table 4.22, Dal mill, Oil mill, Food products and textile units taken in to account for the purpose of analysis.

i) DAL MILLS:

Dal mills represented the value of 1.75 averages for the region under study for the year 1981, which substantially increased to 2.42 for the year 2001. The concentration of dal mills was highest for the North Solapur tahsil due to suitable conditions found in Solapur city, slightly increased to 3.66 for the year 2001. The region consists of Mangalwedha, Malshiras and Karmala tahsil have shown the values of concentration above the region average. These tahsils are agriculturally developed; hence, dal mills are relatively concentrated in this region. On the other hand, Madha, Sangola and Barshi represented moderate concentration value and rest other tahsils such as South Solapur, Mohol and Pandharpur have much lower concentration values than the average for regional as a whole. (Table 5.22)

In 2001, the average value for concentration was computed of 2.42 for the district as whole, the highest for North Solapur and lowest for Malshiras tahsil. The region having higher concentration value for dal mills in 2001, are South Solapur, Mohol, Mangalwedha, Sangola and Karmala. Other tahsils of district have lower values than average for the region. The concentration index clearly reveals that the concentration of dal mills is high in an area which is much suitable for the dal mills in terms of climate, raw material and market. (Fig. 5.15)

Table 5.22**Indices Showing Industrial Concentration In Solapur District**

Sr. No.	Name of Tahsil	1981				2001			
		Dal Mill	Oil Mills	Food Product	Textile Mill	Dal Mills	Oil Mills	Food Product	Textile Mills
1.	North Solapur	3.57	2.82	2.81	3.23	3.66	3.68	2.77	1.28
2.	Barshi	1.06	1.09	1.24	0.83	1.56	2.09	0.61	0.35
3.	Akkalkot	0.71	2.63	1.29	0.61	1.61	3.30	0.72	0.74
4.	South Solapur	0.50	0.90	0.70	1.34	2.75	2.35	1.54	0.52
5.	Mohol	0.60	1.32	1.59	0.13	3.34	3.08	1.51	0.38
6.	Mangalwedha	3.23	1.34	1.09	0.15	3.01	4.58	1.07	0.33
7.	Pandharpur	0.83	1.73	2.09	0.30	2.15	2.21	2.59	0.36
8.	Sangola	2.01	1.90	0.71	0.57	3.18	3.38	1.66	0.34
9.	Malshiras	2.78	2.44	0.84	0.18	1.43	1.60	4.15	0.16
10.	Karmala	2.75	2.44	0.83	0.30	2.45	2.25	2.64	0.25
11.	Madha	1.27	1.33	0.83	0.45	1.51	3.32	1.90	0.25
12.	Solapur District	1.75	1.79	1.27	0.80	2.42	2.89	1.92	0.45

ii) OIL MILLS:

The concentration of oil mills as expected is higher for the tahsils for North Solapur, Akkalkot, Malshiras, Karmala and Sangola than the average for region of Solapur district. This is because; oil extracting mills are widely distributed in rural dominated area. This is related with the primary workers of the rural sector.

The oil mills are moderately concentrated in the year 1981 in Pandharpur, Mangalwedha and Mohol tahsils of the district. More or loss, similar trend was observed in the year 2001. The average concentration

SOLAPUR DISTRICT

CONCENTRATION OF DAL MILLS AND OIL MILLS

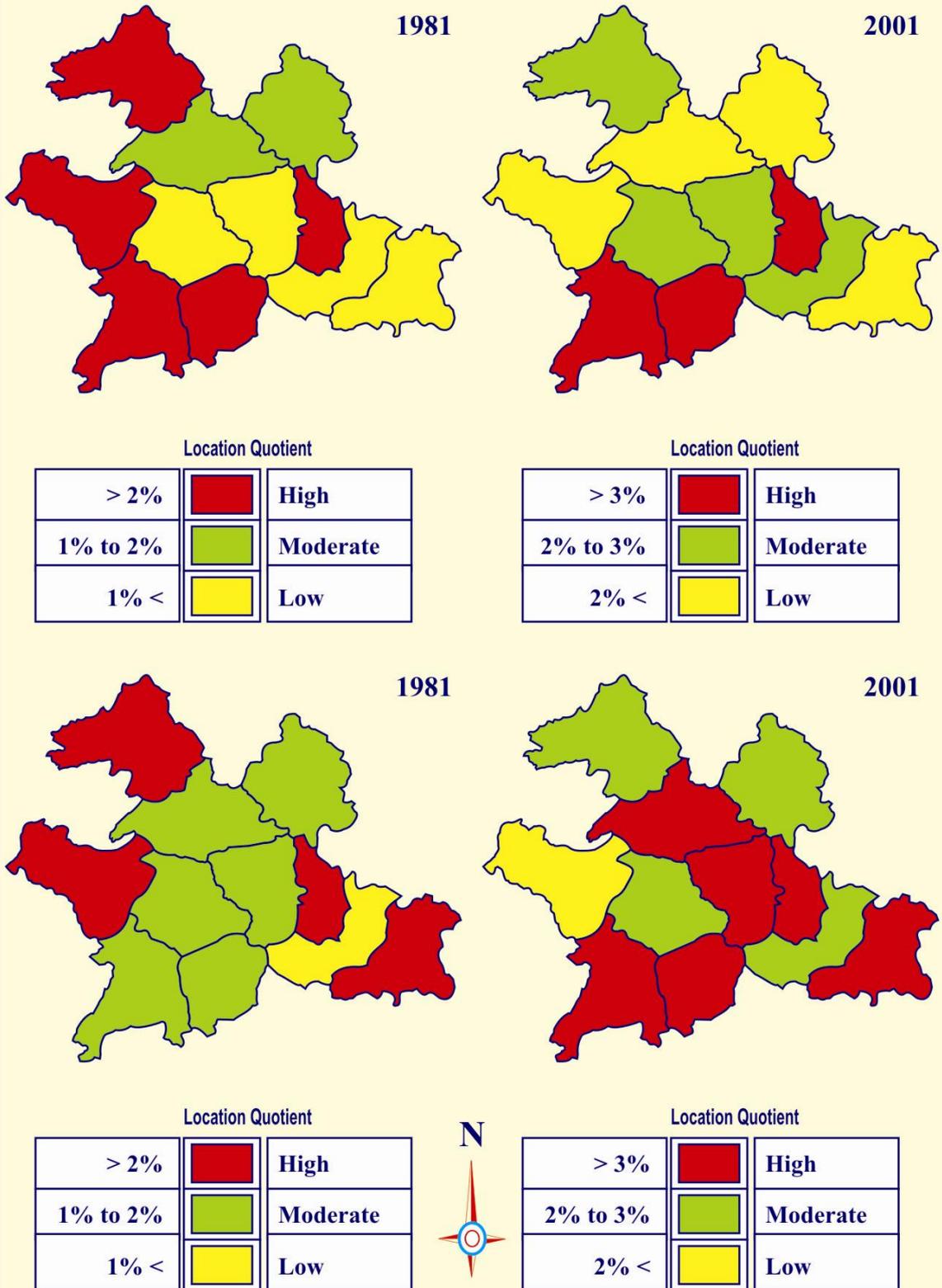


Figure 5.15

value was 2.89 for the region as whole. The higher values were recorded than for Madha, Sangola, Mohol, Akkalkot and North Solapur tahsil in the year 2001. The Mangalwedha tahsil represented the height value for the concentration of oil mills, because, of the high production of ground nut, sunflower and other oil seeds crops. As the Moderate value were found, in Karmala, Pandharpur, South Solapur and Barshi. Unfortunately, the Malshiras has declining trend in the oil mills as concentration value is as low as 1.60 in 2001.

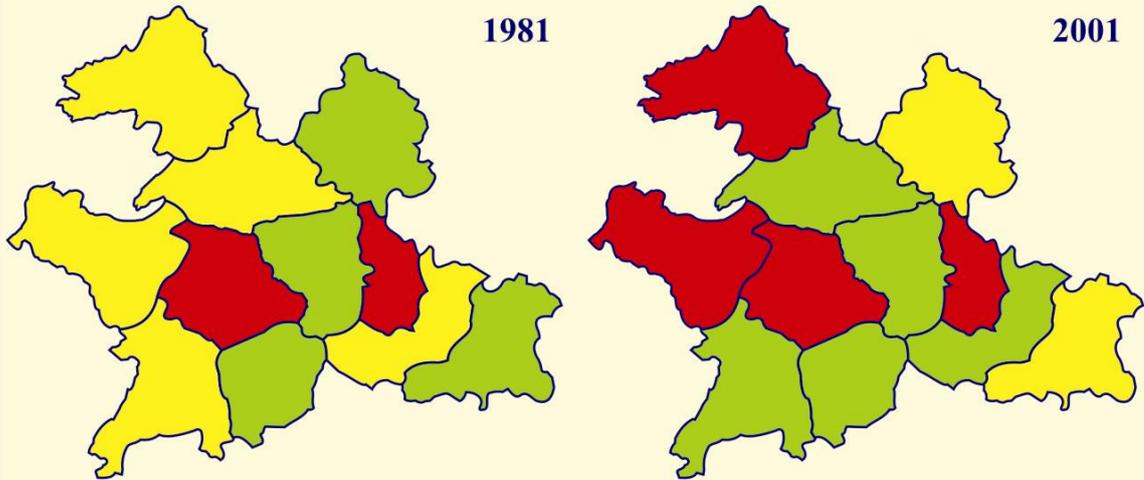
iii) FOOD PRODUCTS:

The average value for the food products was estimated 1.27 in year 1981. The concentration values are highest for North Solapur and lowest for the Sangola and South Solapur tahsils. Because of local demand, the concentration values for the food product industries was also recorded higher than the average for the regions like Pandharpur, Mohol as well as for Akkalkot tahsils. Medium concentration of food production was for Mangalwedha and Barshi. Rest other tahsils have much lower concentration value for the region average in 1981. (Fig. 5.16)

In the year 2001, a typical pattern was observed for the concentration values for food products units. Instead of Solapur, Malshiras occupies the first rank while Barshi occupied the last rank according to values. Karmala, Pandharpur and North Solapur have shown significantly higher values of concentration for food products, while Sangola, Mangalwedha, Mohol and South Solapur have moderate concentration of food product industries. The Akkalkot and Barshi tahsils represented much less concentration value for food production. The concentration of food products industries is based on agricultural products therefore; concentration is high in rural and agricultural dominated economy.

SOLAPUR DISTRICT

CONCENTRATION OF FOOD PRODUCT UNITS

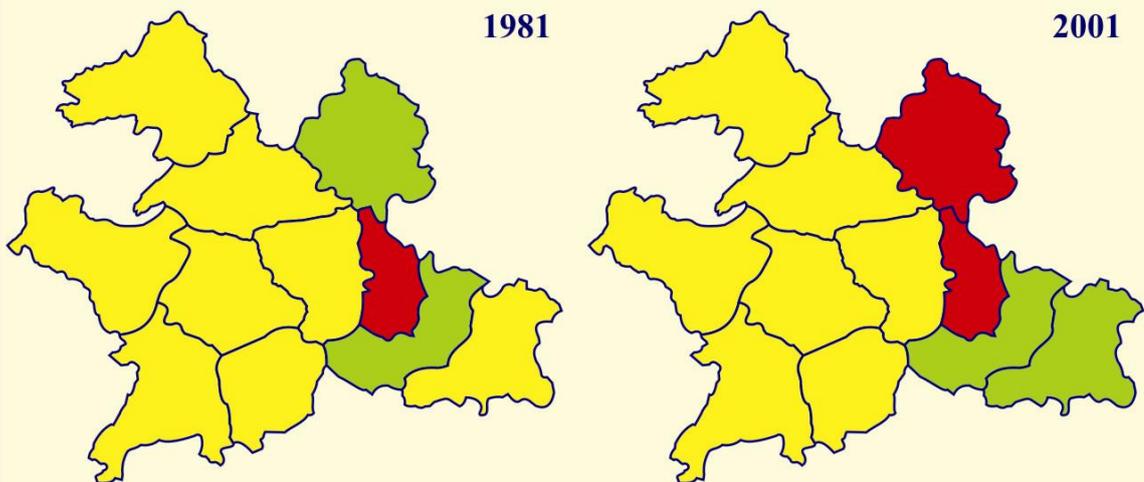


Location Quotient

> 2%		High
1% to 2%		Moderate
1% <		Low

Location Quotient

> 2%		High
1% to 2%		Moderate
1% <		Low



Location Quotient

> 2%		High
0.50% to 2%		Moderate
0.80% <		Low

Location Quotient

> 1%		High
0.50% to 1%		Moderate
0.50% <		Low



Figure 5.16

iv) TEXTILE MILLS:

The concentration of textile mills in Solapur district is found in the vicinity of Solapur City. Since, the concentration value is the highest for the North Solapur tahsil in the year 1981. On the other hand, the poor and quite low concentration was for textile unit in the Mohol, Mangalwedha and Malshirs tahsils. Except, north and South Solapur tahsils, all other tahsils of the district shown much, lower values of concentration for textile in Solapur district.

For the year 2001, there has been tremendous decline in textile units through out the district. It may be attributed to low production in crops as agricultural land is utilized for sugar cane cultivation. Most of the tahsils, including North Solapur have recorded much lower concentration value than previous decade. Except, Mangalwedha, Mohol, Pandharpur, Karmala and Madha in all other tahsils the concentration value for textile mills significantly declined for the year 2001. Probably, due to closing down of several cotton textile mills the production of cotton has also declined rapidly during last 20 years.

5.8.2 DIVERSIFICATION OF INDUSTRIES IN SOLAPUR DISTRICT:

The diversification is a concept that is opposite to a specialization of a specific industry in a particular area. The concept of industrial diversification is associated with the variety of industries involving the degree of competition in a industrial region. The diversification is a structural form of industry such as, industrial pattern and to explain, why it is necessary to start variety of small scale industrial unit, which have approximately us even proportion. The most essential activity related with the industrial activity obviously involved intense competition among various activities for a space. Infact, the higher competition the

computation, the higher magnitude of diversification, on the one hand, the lesser competition, greater will be the trend towards a specialization or monoculture, where emphasis in one or two industries. In other words, it may be stated that there is relation ship between industrial combination and industrial diversification. Which is in simple words greater the number of industries in combination higher is the diversification.

In order to under stand, the degree of industrial diversification in Solapur district, the different tahsils, Bhatia's (1945) method of crop diversification is applied here, in the similar way to calculate the industrial diversification with the help of fallowing formula.

$$\text{Index of small scale industrial unit} = \frac{\text{Percentage of 'x' small scale group}}{\text{Number of 'x' small scale industrial group}}$$

Where,

'x' stand for small scale industrial groups, which are though industrial which individually occupys above 10 percent or more share in a regional unit on the basis of the values computed by Bhatia's method for small scale industrial units for different tahsils in Solapur district both for 1981 and 2001, it may be stated that higher the value of index, lower is the diversification of the industrial unit. (Table 5.23)

The regional pattern of small scale industrial diversification may be grouped in three categories as given under :

- i) Area's of high diversification below 15 percent.
- ii) Area's of moderate diversification 15-20 percent.
- iii) Area's of low diversification above 20 percent.

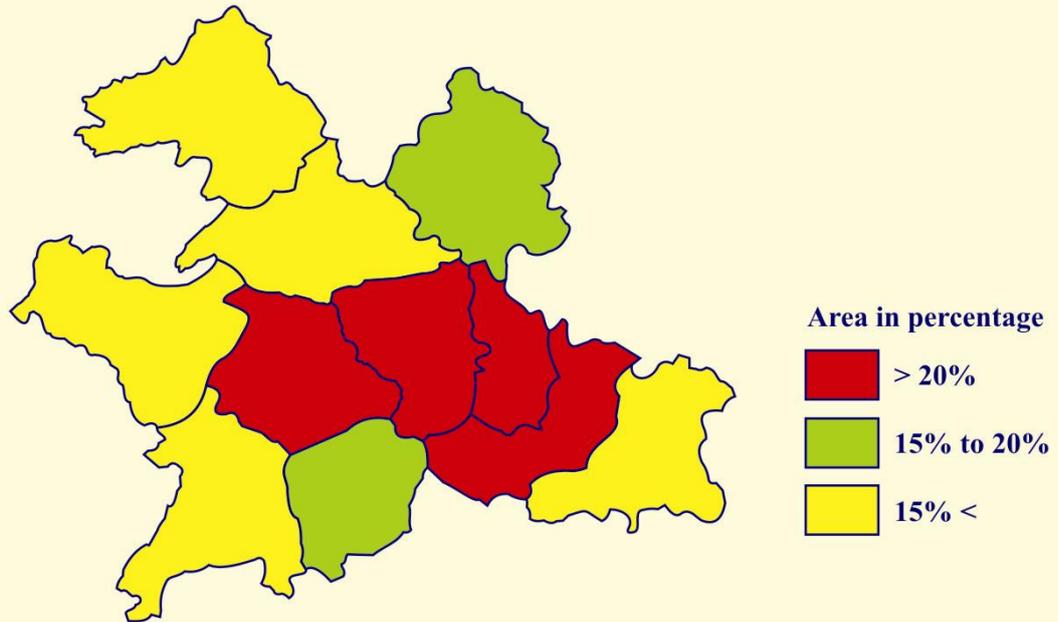
Table 5.23**Diversification of Agro Based Industrial Unit**

Sr. No.	Name of Tahsil	No. of small scale groups in diversification	Industrial share in total group base unit %	Industrial diversification Index	No. of small scale group in diversification	Industrial share in total agro based unit in %	Industrial diversification Index
1.	North Solapur	02	60.64	30.34	02	63.81	33.91
2.	Barshi	03	58.58	19.53	01	11.57	11.57
3.	Akkalkot	03	39.80	13.27	02	25.64	12.82
4.	South Solapur	02	56.30	28.15	01	10.20	10.20
5.	Mohol	02	47.95	23.97	01	10.35	10.35
6.	Mangalwedha	02	36.46	18.23	03	33.94	11.31
7.	Pandharpur	02	42.34	21.17	01	11.06	11.06
8.	Sangola	01	10.20	10.20	01	16.47	16.47
9.	Malshiras	02	26.68	13.34	01	24.61	24.61
10.	Karmala	03	40.00	13.33	01	12.50	12.50
11.	Madha	03	40.00	13.33	01	10.18	10.18
12.	District Total	03	63.20	21.07	02	49.60	24.79

In 1981, the industrial diversification index was calculated to 21.07 for the entire region as a whole. The values of diversification index were found below 15 percent in four tahsils of the district, consist of Sangola, Malshiras, Karmala and Madha tahsil in the western parts of the study region, while Akkalkot tahsil in the eastern part of region. On the other hand Barshi and Mangalwedha represented values between 15 and 20, hence, fall in moderate category of industrial diversification. (Fig. 5.17)

SOLAPUR DISTRICT

DIVERSIFICATION OF SMALL SCALE INDUSTRIES 1981



DIVERSIFICATION OF SMALL SCALE INDUSTRIES 2001

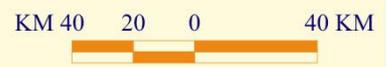
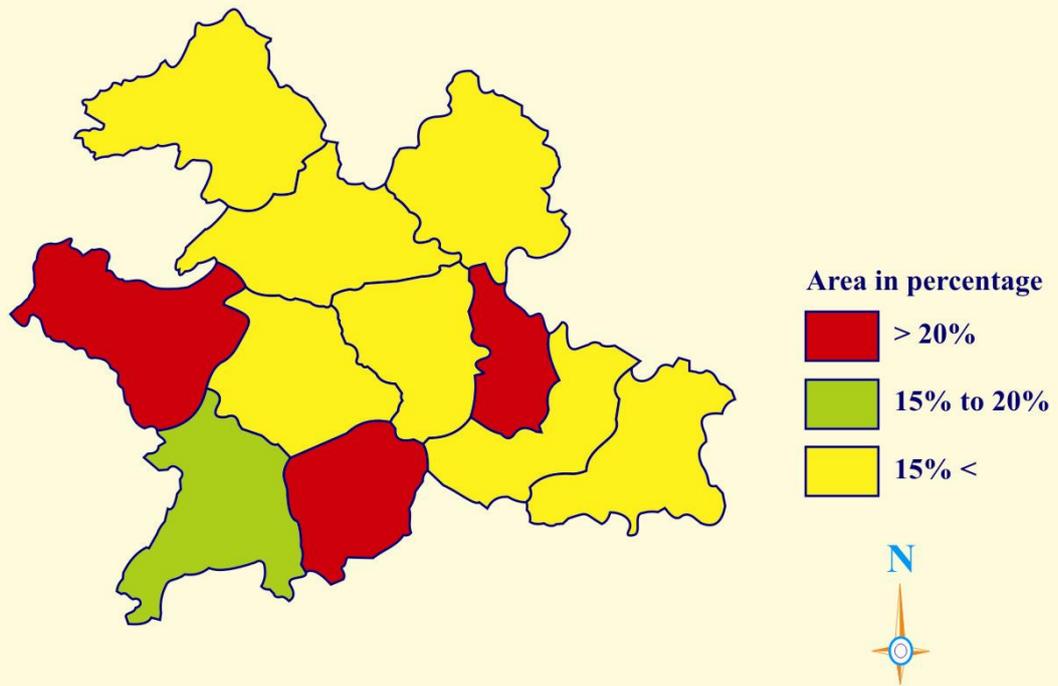


Figure 5.17

In the central parts of the region, under study, consist by North and South Solapur tahsil were having values of industrial diversification more than twenty. In therefore this region low industrial diversification was found.

In the year 2001, the situation was relatively different for several tahsils of the district, the high diversification in the most tahsils of district except, North Solapur and Malshiras tahsils which represented low diversification. While Sangola represented moderate diversification of small scale industries in the region under study.

REFERENCE

1. Angadi V. B. (1976): "Economics of Handloom Industry," Karnataka University, Dharwad, 1976, p. 12.
2. Annual Report of Small-Scale Industries Development Organization, New Delhi 1986-87. pp 1-2.
3. Bhatia S. S. (1965): "Pattern of Crop Concentration and Diversification in India" Economic Geography, pp. 40, 41, 53, 54, 58 and 56.
4. Chattarjee Kanan (1980): "Some Considerations on Cotton Textile Industry in Selected States of India," Geographical Review of India, Vol. 42, No. 1, pp. 55-61.
5. Doi Kikukazu (1957) : "The Industrial Structure of Japanese Prefectures," Tokyo Proceeding of the International Geographical Union, Regional conference in Japan 1957, pp. 310-316.
6. Dr. Choudhari M. R. (1970): "Indian Industries Development and Location," Oxford and I.B.H. Publication. Co. Calcutta, pp.2, 14.
7. Govt. of India Planning Commission, Third Five Year Plan 1960-61, New Delhi.
8. James, J. Bezne (1959) : "The pattern of Entrepreneurship in South India," Economic Development and Cultural Change (Chicago) Vol. III, No. 3, Part I, pp. 343-362.
9. Kuchal S.C. (1979): "The Industrial Economy of India," Chaitanya Publishing House, University Road, Allahabad p. 14.
10. Newalkar N.B.(1972) : "Development of Employment Synthesis," Yojana, New Delhi. Jan. 26, 1972, pp. 37-39.
11. Schumacher E.E. (1977) : "Small is Beautiful," ABACUS, London, p. 27.

12. Sharma P. R. (1983): "Industrial Sickness: Case Study of Small Units in Kumaun Region," Indian Journal of Marketing, vol. XIII, No. 8, April 1983, p. 15.
13. Shrivastava S. K. Nigar R. S. Hahal Banarjee (1967) : "Industrial Economics," Published by S. Chand and Co., New Delhi, p. 423.